Exploring mobile learning implementation in an industry context from a Community of Practice perspective

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Abstract

Mobile learning (m-learning) is an emerging trend that deserves attention, offering substantial benefits to education and business (Liu et al. 2010). As organisations strive to compete in the global economy, differentiation on the basis of the skills, knowledge, and motivation of their workforce takes on increasing importance. However, there is evidence that organisations face technology and social challenges in the implementation of m-learning and are unable to realise the benefits of m-learning initiatives. Research into m-learning to date has concentrated on tertiary/secondary educational contexts (Pimmer & Grohbiel 2011) with a tendency to focus on pedagogy, technology innovation and adoption, and authors have tended to adopt rationalist approaches. Empirical research in an industry context with a focus on social, relational and organisational aspects is also limited.

This study is motivated by the growing importance of m-learning to organisations and employees, the limitations of empirical m-learning research in industry contexts, and the relationship challenges and difficulties organisations have in implementing m-learning initiatives. To address these limitations and challenges, this research adopts Wenger’s (1998) Community of Practice (CoP) perspective to examine why the implementation of m-learning in a corporate business context is problematic. This study focuses on: 1) practitioners that develop m-learning initiatives and 2) stakeholders that have a significant stake or influence on m-learning, such as sponsors and learners. This study investigates the perspectives of practitioners and stakeholders and the skills, methods and tools that the practitioners may need when working with stakeholders. An interpretivist approach is used to inform the research methodology and design. A multiple case study approach was conducted with three Australian-based organisations using a grounded theory data analysis method to minimise any priori assumptions that could influence the findings.

The research findings confirm that m-learning initiatives involve complex social, relational and organisational considerations that influence the conceptualisation, relationship and practices of practitioners and stakeholders. M-learning initiatives tend to resemble m-learning CoPs, reflected in the practices of practitioners and stakeholders, as a way of dealing with the company’s bureaucratic context. The findings contribute to CoP theory and m-learning body of knowledge and practice by: 1) expanding the understanding of m-learning initiatives in organisational domains; 2) uncovering the bureaucratic contextual factors, conditions and practices that contribute to successful m-learning implementation; 3) providing a m-learning framework revealing important skills and practices that help improve the development and implementation of m-learning initiatives; and 4) extending and enriching CoP theory relating to mutual engagement, joint enterprise and shared repertoire.
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I would like to dedicate this thesis to my mum Nu and dad Ha to express my greatest appreciation of their love and dedication. I can’t thank them enough for providing me with the grounding of what is possible with hard work and determination.

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Declaration by candidate

I, Michelle Lac, declare that this thesis contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the examinable outcome.

And, to the best of the candidate’s knowledge, contains no material previously published or written by another person except where due reference is made in the text of the examinable outcome.

Michelle Lac
September 2018
Table of Contents

Abstract ......................................................................................................................................... ii
Acknowledgements ......................................................................................................................... iii
Declaration by candidate ............................................................................................................... iv
Table of Contents ............................................................................................................................... v
List of Figures ................................................................................................................................... ix
List of Tables ................................................................................................................................... ix
Chapter 1 – Introduction .................................................................................................................. 1
  1.1 Research motivations .................................................................................................................. 2
  1.2 Research objectives .................................................................................................................... 3
  1.3 Research questions .................................................................................................................... 3
  1.4 Research scope .......................................................................................................................... 4
  1.5 Contribution to theory and practice .......................................................................................... 4
    1.5.1 Contribution to CoP theory ................................................................................................. 4
    1.5.2 Contribution to the m-learning body of knowledge ............................................................. 8
    1.5.3 Contribution to m-learning practice ................................................................................... 10
  1.6 Dissertation structure ................................................................................................................. 10
Chapter 2 – Literature Review Part A: M-learning and its Implementation .................................... 12
  2.1 Defining m-learning .................................................................................................................. 12
  2.2 Academic m-learning literature ............................................................................................... 15
  2.3 Technology challenges associated with m-learning implementation ....................................... 19
  2.4 Social challenges associated with m-learning implementation .............................................. 21
  2.5 M-learning literature presented by industry practitioners ....................................................... 24
  2.6 Existing studies of m-learning implementation ........................................................................ 26
  2.7 Exploring why m-learning implementation is important for industry .................................... 29
    2.7.1 Proliferation in mobile technology adoption ....................................................................... 29
    2.7.2 Global mobility in the workforce ....................................................................................... 30
    2.7.3 Millennials demanding training and development .............................................................. 30
    2.7.4 Growth of mobile on-the-go workforce .............................................................................. 30
    2.7.5 Contributing to performance support and organisational training .................................... 30
Chapter 3 – Literature Review Part B: Theoretical perspectives ..................................................... 34
  3.1 Positivist and rationalist perspectives ....................................................................................... 34
  3.2 A practice perspective ............................................................................................................. 37
    3.2.1 Definition of ‘practice’ ....................................................................................................... 37
    3.2.2 Criticisms of Practice theory addressed in this research .................................................. 39
  3.3 Communities of Practice (CoP) theory ..................................................................................... 40
    3.3.1 Wenger’s (1998) CoP theory .............................................................................................. 41
    3.3.2 Criticisms of Wenger’s CoP theory and how these are addressed ..................................... 44
  3.4 Limitations of m-learning literature to date .............................................................................. 46
  3.5 Research focus and scope ......................................................................................................... 48
  3.6 Research questions ................................................................................................................ 49
Chapter 4 – Research methodology and design .............................................................................. 50
  4.1 Research paradigms and their philosophical assumptions ..................................................... 51
    4.1.1 Positivist research paradigm ............................................................................................ 52
Chapter 6

6.1 Research methodology

6.2 Research methodology selection

6.3 Research methodology components

Chapter 5 – Within-case analysis – Case 1

5.1 Background

5.2 Research participants

5.3 Theme 1 and 2: Practitioners’ perspective

5.4 Theme 3: Stakeholders’ perspective

Chapter 6 – Within-case Analysis – Case 2

6.1 Background

6.2 Research participants

6.3 Themes 1 and 2: Practitioner’s perspective

6.4 Theme 1: Practitioners’ conceptualisation of m-learning

6.5 Theme 2: Practice work of practitioners
6.3.3 Summary: Practitioners’ perspective ................................................................. 133
6.4 Theme 3: Stakeholders’ perspective ................................................................. 134
  6.4.1 Sponsor’s perspective ......................................................................................... 134
  6.4.2 Learners’ perspective ......................................................................................... 137
  6.4.3 Using executive managers to motivate learners.................................................. 140
  6.4.4 Summary: Stakeholders’ perspective ............................................................... 141
6.5 Discussion ........................................................................................................ 142
  6.5.1 Bureaucratic contextual factors influencing practitioners and stakeholders ...... 142
  6.5.2 What is the purpose of a CoP and how long does it last? ................................. 144
  6.5.3 Who belongs to the CoP and what holds it together? ....................................... 145

Chapter 7 – Within-case Analysis – Case 3 .............................................................. 147
  7.1 Background ........................................................................................................ 147
  7.2 Research participants ........................................................................................ 148
  7.3 Themes 1 and 2: Practitioner’s perspective ....................................................... 150
    7.3.1 Theme 1: Practitioners’ conceptualisation of m-learning ................................ 151
    7.3.2 Theme 2: Practice work of practitioners ....................................................... 153
    7.3.3 Summary: Practitioners’ perspective ........................................................... 159
  7.4 Theme 3: Stakeholders’ perspective ................................................................ 160
    7.4.1 Sponsor’s perspective ..................................................................................... 160
    7.4.2 Learners’ perspective ..................................................................................... 166
    7.4.3 Using executive managers to motivate learners .............................................. 172
    7.4.4 Summary: Stakeholders’ perspective ........................................................... 173
  7.5 Discussion ........................................................................................................ 173
    7.5.1 Bureaucratic contextual factors influencing practitioners and stakeholders ... 174
    7.5.2 What is its purpose and who belongs to the CoP? ......................................... 177
    7.5.3 What holds the CoP together and how long does it last? ............................... 177

Chapter 8 – Cross-case analysis ............................................................................ 181
  8.1 Theme 1: Practitioners’ interpretation of m-learning ......................................... 181
    8.1.1 Practitioners’ role ......................................................................................... 182
    8.1.2 Meeting sponsors’ requirements .................................................................. 184
    8.1.3 Supporting learning needs of sales staff ....................................................... 186
    8.1.4 Adopting tools to motivate learners ............................................................. 187
  8.2 Theme 2: Practice work of Practitioners ........................................................... 187
    8.2.1 Working as a team ....................................................................................... 188
    8.2.2 Practitioners engaging stakeholders ............................................................. 190
    8.2.3 Focusing on rapid implementation in a bureaucratic business context .......... 194
    8.2.4 Addressing technical issues ........................................................................ 196
  8.3 Theme 3: Stakeholders’ perspective ................................................................. 196
    8.3.1 Theme 3: Stakeholders’ perspective – Sponsors .......................................... 196
    8.3.2 Theme 3: Stakeholders’ perspective – Learners and Executive managers ....... 200
  8.4 Cross-case analysis discussion ....................................................................... 204
    8.4.1 M-learning initiatives are influenced by bureaucratic contextual factors ...... 205
    8.4.2 Implications of a bureaucratic context ......................................................... 207
    8.4.3 M-learning initiatives emerge as CoPs ......................................................... 210
    8.4.4 M-learning skills and practice framework .................................................... 219
Chapter 9 – Conclusion ........................................................................................................... 222
9.1  Key conclusions addressing research questions .......................................................... 222
  9.1.1  M-learning initiatives are influenced by bureaucratic contextual factors .......... 223
  9.1.2  M-learning initiatives may emerge as CoPs when supported by certain
        organisational conditions and practices ................................................................. 224
  9.1.3  Sponsors are important to m-learning CoPs .......................................................... 225
  9.1.4  Organisational instruments can be used to support CoP coherence ................. 225
9.2  Contribution to CoP theory .......................................................................................... 226
9.3  Contribution to m-learning body of knowledge ......................................................... 228
9.4  Summary of contributions to CoP theory and the m-learning body of knowledge. 231
9.5  Contribution to m-learning practice ......................................................................... 233
9.6  Limitations of study and suggestions for future research ......................................... 233
9.7  Concluding remarks ................................................................................................... 236
References ............................................................................................................................ 237
Appendix 1 – Case study interview guide ......................................................................... 250
Appendix 2 – Case 1 Cluster Diagrams .............................................................................. 252
  Theme 1: Practitioners’ interpretation of m-learning ..................................................... 252
  Theme 2: Practice work of practitioners ......................................................................... 254
  Theme 3: Sponsors’ perspective ...................................................................................... 256
  Theme 3: Learners’ perspective ....................................................................................... 258
  Theme 3: Executive managers’ perspective ..................................................................... 259
  Theme 3: Stakeholders providing expertise to the practitioners ................................... 259
Case 2 Cluster Diagrams .................................................................................................... 260
  Theme 1: Practitioners’ interpretation of m-learning ..................................................... 260
  Theme 2: Practice work of practitioners ......................................................................... 261
  Theme 3: Sponsors’ perspective ...................................................................................... 263
  Theme 3: Learners’ perspective ....................................................................................... 264
  Theme 3: Executive managers’ perspective ..................................................................... 265
Case 3 Cluster Diagrams .................................................................................................... 266
  Theme 1: Practitioners’ interpretation of m-learning ..................................................... 266
  Theme 2: Practice work of practitioners ......................................................................... 267
  Theme 3: Sponsors’ perspective ...................................................................................... 270
  Theme 3: Learners’ perspective ....................................................................................... 273
  Theme 3: Executive managers’ perspective ..................................................................... 275
Appendix 3 – Research participation consent forms ........................................................... 276
Appendix 4 – Ethics Approval .............................................................................................. 279
Appendix 5 – Contrasting research findings with m-learning literature to date ............... 280
Appendix 6 – Evidence of m-learning CoP practices grouped by implications of a bureaucratic
             context ......................................................................................................................... 281
List of Figures

Figure 1.1: Research scope .................................................................................................................. 4
Figure 3.1: Dimensions of practice based on Wenger (1998, p.73) ................................................. 41
Figure 4.1: Research framework developed for this study ............................................................... 50
Figure 4.2: Defining the ‘case’ ............................................................................................................. 64
Figure 4.3: Data analysis strategy ....................................................................................................... 69
Figure 4.4: Within-case analysis method ............................................................................................ 72
Figure 4.5: Initial coding example ....................................................................................................... 74
Figure 4.6: Focused coding example ................................................................................................... 76
Figure 4.7: Clustering approach .......................................................................................................... 79
Figure 4.8: Within-case analysis chapter structure ........................................................................... 84
Figure 5.1: Case 1 timeline – key events ......................................................................................... 94
Figure 5.2: Case 1 project team ......................................................................................................... 95
Figure 5.3: Practitioner interactions with stakeholders ................................................................. 101
Figure 6.1: Case 2 timeline – key events ......................................................................................... 124
Figure 6.2: Case 2 project team ....................................................................................................... 125
Figure 7.1: Case 3 timeline – key events ......................................................................................... 148
Figure 7.2: Case 3 project team ....................................................................................................... 150
Figure 8.1: Summary of the importance of sponsors in m-learning CoPs ........................................ 217
Figure 9.1: Summary of how this study addresses the research questions ...................................... 223
Figure 9.2: Contribution to CoP theory and m-learning body of knowledge .................................. 232

List of Tables

Table 1.1: Dissertation structure ....................................................................................................... 11
Table 2.1: M-learning literature reviews based on an educational context ..................................... 15
Table 2.2: M-learning technology challenges .................................................................................... 19
Table 2.3: M-learning social challenges ............................................................................................ 23
Table 2.4: M-learning initiatives ....................................................................................................... 27
Table 2.5: Contrasting m-learning contributing to performance support with m-learning academic literature ........................................................................................................................................... 31
Table 3.1: Theoretical frameworks used in conceptualising m-learning .......................................... 34
Table 3.2: Recommended improvements to practice research ......................................................... 39
Table 3.3: Characteristics of CoPs, formal work groups, project teams and informal networks (Wenger and Snyder 2000, p.142) .............................................................................................................. 42
Table 4.1: Research paradigm classification schemas ........................................................................ 52
Table 4.2: Relevant situations for different research methods .......................................................... 58
Table 4.3: Case study method (adapted from Yin 2009, p.8) ............................................................. 60
Table 4.4: Interviews conducted ....................................................................................................... 72
Table 4.5: Memo – “Practitioners balancing dual organisational roles” .......................................... 77
Table 4.6: Description of themes ....................................................................................................... 80
Table 4.7: Themes and theoretical categories across the three cases ............................................ 81
Table 4.8: Within-case analysis chapter structure ................................................................. 83
Table 4.9: “Trustworthiness” criteria, principles and objectives for interpretive research ......... 85
Table 4.10: Mapping “trustworthiness” criteria, principles and recommendations for interpretive research .................................................................................................................. 86
Table 5.1: Podcasts released to learners (sales staff) ................................................................ 92
Table 5.2: Research participants .............................................................................................. 94
Table 5.3: Research question, themes and theoretical categories – Practitioners’ perspective 96
Table 5.4: Theoretical categories – Sponsors’ perspective ......................................................... 104
Table 5.5: Theoretical categories – Learners’ perspective .......................................................... 110
Table 5.6: Bureaucratic contextual factors emerging in Case 1 ............................................... 118
Table 5.7: Characteristics of projects and CoPs ....................................................................... 118
Table 5.8: Research participants .............................................................................................. 124
Table 5.9: Research question, themes and theoretical categories – Practitioners’ perspective 126
Table 6.1: Research participants .............................................................................................. 128
Table 6.2: Research question, themes and theoretical categories – Practitioners’ perspective 128
Table 6.3: Theoretical categories – Sponsor’s perspective ......................................................... 134
Table 6.4: Theoretical categories – Learners’ Perspective .......................................................... 137
Table 6.5: Bureaucratic contextual factors emerging in Case 2 ............................................... 143
Table 6.6: Characteristics of projects and CoPs ....................................................................... 144
Table 6.7: Research participants .............................................................................................. 149
Table 6.8: Research question, themes and theoretical categories – Practitioners’ perspective 151
Table 7.1: Research participants .............................................................................................. 155
Table 7.2: Theoretical categories – Sponsor’s perspective ......................................................... 160
Table 7.3: Theoretical categories – Learners’ perspective .......................................................... 166
Table 7.4: Bureaucratic contextual factors emerging in Case 3 ............................................... 175
Table 7.5: Characteristics of projects and CoPs ....................................................................... 176
Table 8.1: Themes and research questions .............................................................................. 181
Table 8.2: Cross-case analysis of Theme 1: Practitioners’ interpretation of m-learning .......... 181
Table 8.3: Practitioners’ alignment with sponsors’ requirements .............................................. 184
Table 8.4: Practitioners supporting learning needs of sales staff ............................................. 186
Table 8.5: Cross-case analysis of Theme 2: Practice work of practitioners ............................. 187
Table 8.6: Theme 3 Cross-case analysis – mapping sponsors’ with practitioners’ perspectives 196
Table 8.7: Cross-case analysis of Theme 3: Learners’ and Executive managers’ perspective . 200
Table 8.8: Bureaucratic contextual factors in CoP and m-learning literature ............................. 205
Table 8.9: Implications of a bureaucratic context ..................................................................... 208
Table 8.10: Existing m-learning literature discussing implications of a bureaucratic context on m-learning implementations .................................................................................... 210
Table 8.11: Practices reflecting m-learning CoPs ..................................................................... 212
Table 8.12: M-learning skills and practice framework ............................................................. 219
Chapter 1 – Introduction

Mobile learning (m-learning) is an important area of Information Systems (IS) research, offering substantial benefits to education and business (Liu et al. 2010). As organisations strive to compete in the global economy, differentiation on the basis of skills, knowledge, and motivation of their workforce takes on increasing importance (Aguinis & Kraiger 2009). Organisations are increasingly recognising the benefits of m-learning to enhance organisational training, with more organisations adopting personal mobile devices for learning on the job (Sharples et al. 2009). M-learning can provide organisations with wide ranging benefits such as improved staff learning and performance, decrease in training costs and better multi-media content delivery and creation options (Mehdipour & Zerehkafi 2013). Organisations can also use m-learning to reduce the need for face-to-face training and therefore reducing employee travel costs which results in shorter absence from the workplace (Macdonald & Evans 2008). M-learning provides organisations with the ability to use the in-built functionality of mobile devices such as the camera, geolocation, microphone and audio recording, notifications, alerts, touch screens, voice/phone communication, and is also wearable, and portable (Macdonald & Chiu 2011; Woodill 2013). This richness of functionality is not easily available via traditional classroom-based learning or e-learning methods.

Research into m-learning to date has concentrated on educational contexts (Pimmer & Grohbiel 2011) with a tendency to focus on pedagogy and technology development and adoption. M-learning research in an industry context has been highlighted by academics and practitioners as a fertile area for further research to capitalise on the benefits and growing importance of m-learning to corporate businesses and individual learners (Ooi et al. 2018). Furthermore, some authors assert that the use of m-learning for organisational and staff performance support is growing (Brink 2011; Quinn 2011; Kahle-Piasecki et al. 2012; Genzic et al. 2014) and requires urgent attention (Ting 2005). Despite the benefits m-learning can provide to organisations and individuals, there is evidence that shows organisations struggle with developing and implementing m-learning initiatives because of technology and social challenges. Recent m-learning research, for example, suggests that the benefits and challenges of m-learning in an industry context can be better understood by taking a social, relational and organisational perspective (Pimmer & Pachler 2014). However, empirical research in an industry context with a focus on social, relational and organisational aspects hasn’t attracted the attention of researchers.

This research provides an empirically based investigation of the social, relational and organisational aspects of how the development and implementation of m-learning initiatives are problematic in an industry context, using Wenger’s (1998) Community of Practice (CoP) perspective. Limited research into the social processes associated with m-learning development implementation may indicate that m-learning researchers are in the main not addressing the topics of interest and concern to m-learning practitioners. This could be an indicator that m-learning researchers fail to appreciate the implementation concerns that challenge practitioners and therefore do not fully appreciate or understand the implementation of m-learning and/or the role practitioners and stakeholders have. Therefore, this research will focus
on m-learning implementation that occurs in industry, with a focus on practitioners and
stakeholders (sponsors and learners). This research defines m-learning as,

*Leveraging mobile technology, such as smart phones, tablets and laptops, for
employees and for the purposes of education, training, or performance support.*

The remainder of this chapter is structured as follows: sections 1.1 and 1.2 present research
motivations and objectives and sections 1.3 and 1.4 provide the research questions and scope
of the study. This study’s contribution to theory and practice is provided in section 1.5 and the
final section (1.6) outlines the structure of the thesis.

1.1 Research motivations

This study is motivated by the growing importance of m-learning to organisations and
employees (Liu et al. 2010; Krull et al. 2017; Ooi et al. 2018). It is also motivated by the problems
associated with existing perspectives and approaches to m-learning initiatives (Freifeld 2013)
and the limited empirical research about their implementation in a corporate organisational
context.

While academic literature has built knowledge about m-learning pedagogy, technology usage
and adoption in an educational context, such as in schools or universities; researchers have
largely ignored the social relationships between m-learning practitioners and stakeholders
during m-learning implementation in an industry context. This research defines practitioners as
those people that design, develop or implement m-learning initiatives. Stakeholders are defined
as “any individual or group of individuals that are directly or indirectly impacted by an entity or
a task” (Sutterfield et al. 2006, p. 27).

M-learning research in an industry context has also been highlighted as a fertile area for further
research to capitalise on the benefits and growing importance of m-learning to corporate
businesses and individual learners (Naismith et al. 2004; Kim & Kizildag 2011; Pachler et al.
2011; Woodill 2011; Ally et al. 2014; Keskin & Kuzu 2015). Adopting an interpretivist approach,
this study uses multiple case studies based on three Australian organisations to address the
lack of empirical m-learning research in industry contexts.

Existing technocentric approaches adopted by researchers may have served a technically
oriented audience well; however, they have resulted in a lack of research and skills in the social
processes associated with m-learning. Some authors suggest that m-learning research has been
too focused on m-learning technology and not enough emphasis placed on understanding
socio-cultural contexts, conflicting perspectives of the people involved and the organisational
environment (Pimmer et al. 2010). This view is supported by Garrison (2015) highlighting the
enhanced opportunities for engagement in a technologically connected society, and the role
the social environment plays in stimulating and shaping thinking and learning. Relatively recent
research suggests that the social context is important to understand m-learning in a workplace
context: “the value of m-learning in work settings can be perfectly explained by socio-cognitive,
situated and socio-cultural perspectives” (Pimmer & Pachler 2014, p. 199).

While offering support for some of the technical challenges, m-learning research to date offers
few insights into the social dimensions of m-learning, especially those associated with building
the necessary engagement with key stakeholders during the development of m-learning initiatives. The role and practice of m-learning practitioners, as they engage stakeholders in collaboration to understand their requirements and build commitment and interest, has largely been overlooked by researchers. The meanings practitioners and stakeholders ascribe to m-learning, and how these meanings influence relations between them and outcomes of m-learning initiatives, have also largely been ignored by researchers.

By using Wenger’s (1998) Community of Practice (CoP) perspective; this study aims to address the limitations of existing academic research. This study adopts a practice-based research approach, using Wenger’s CoP (1998) theory as a lens to examine the roles and practices of m-learning practitioners, including skills, methods and tools that practitioners may need when working with stakeholders. Also, to minimise priori assumptions that could influence the research findings, a grounded theory data analysis method is used.

1.2 Research objectives

The research objectives include gaining a greater understanding of the problems associated with m-learning initiatives and their implementation from a social, relational and organisational perspective as suggested by other researchers (Wiredu & Sorensen 2006; Genzic et al. 2014). The findings from this study will help organisations and individuals address the growing importance and realisation of the wide-ranging benefits associated with successful m-learning implementation.

Based on the research motivations discussed in section 1.1, the research objectives are presented here to guide the focus and scope of this study.

Research objectives:

1. Identify the social and relational practices of practitioners in m-learning development and implementation using a Community of Practice perspective.
2. Identify how m-learning stakeholders, such as learners and sponsors, conceptualise m-learning.
3. Provide a m-learning practice framework with suggested skills and practices that will both help practitioners and stakeholders conceptualise m-learning holistically and with implementation of m-learning initiatives.

1.3 Research questions

This study will address the following three research questions, derived from the research motivations (section 1.1), research objectives (section 1.2), literature review (Chapter 2) and the theoretical perspectives adopted (Chapters 3 and 4).

Research questions:

1. What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation?
2. How do m-learning stakeholders, such as learners and sponsors, conceptualise m-learning?
3. How does a Community of Practice perspective provide insights into organisational m-learning initiatives?
1.4 Research scope

The scope of this research addresses the research objectives (section 1.2) and research questions (section 1.3) described above. A specific focus is placed on m-learning practitioners and stakeholders including their conceptualisation and interpretation of m-learning, and the practices and interactions between m-learning practitioners and stakeholders. The context in how the research questions fit within the research scope is shown in Figure 1.1.

![Australian organisational context](image)

**Figure 1.1: Research scope**

The research scope includes exploring CoPs as defined by Wenger et al. (2002a, p.4), “the groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis”. The social configuration of the CoPs investigated may include practitioners, sponsors and learners.

1.5 Contribution to theory and practice

This study provides an empirical basis to theorise and extend our understanding of CoP theory and m-learning body of knowledge and practice. Firstly, this study confirms that the adoption of CoP theory is useful in gaining a greater understanding of m-learning initiatives and how they are developed and implemented from the perspective of practitioners and stakeholders. Consequently, the insights gained from this study extend and enrich our understanding of the CoP concepts of shared repertoire, joint enterprise and mutual engagement. Secondly, this study provides new insights contributing to the m-learning body of knowledge by uncovering bureaucratic contextual factors and their implications for m-learning development and implementation. Finally, a m-learning framework highlights important skills and practices that improve the development and implementation of m-learning initiatives.

1.5.1 Contribution to CoP theory

Four important contributions to CoP theory are provided by this study.

1. Extending CoP theory to m-learning implementation and revealing that in an organisational context, CoPs are influenced by bureaucratic contextual factors
M-learning initiatives involve complex social and organisational considerations that impact the relationships and practices of practitioners and stakeholders. Even though m-learning initiatives tend to be called ‘projects’, the way practitioners and stakeholders conceptualise and work together on m-learning initiatives suggest they cohere as m-learning CoPs reflecting Wenger’s (1998) CoP theory. CoP scholars tend to draw clear delineations between projects and CoP (Wenger & Snyder, 2000). This study has found that m-learning initiatives may start as ‘projects’ reflecting their time-bound nature. However, these ‘projects’ benefit in emerging as CoPs because practitioners and stakeholders worked together to deal with the challenges associated with implementing m-learning within a bureaucratic context through mutual engagement, joint enterprise and shared repertoire. For example, in dealing with organisational cost/time constraints, restructures, complex organisational procedures and decision-making processes and having limited m-learning and technical expertise, practitioners built strong interpersonal connections with stakeholders to help them deal with bureaucratic contextual factors out of their direct control. They also met sponsor’s requirements to satisfy changes to organisational need, the regulatory and/or competitive environment and adapted their approach to the delivery of m-learning based on previous experience in failed m-learning implementation.

Thus, this study contributes to CoP theory by demonstrating that a holistic understanding of how m-learning initiatives emerge as CoPs is important for m-learning implementation to be effective and more sustainable within bureaucratic contexts. Furthermore, this study has shown that m-learning CoPs can support both the delivery of m-learning initiatives as well as knowledge sharing in the uptake of m-learning training material and how to implement initiatives in a bureaucratic environment amongst and between practitioners and stakeholders. By taking an empirical approach, the insights into m-learning CoPs can be abstracted and theorised. Therefore, a significant contribution to CoP theory is made because these findings can be used and tested against other initiatives embedded in bureaucratic contexts reflecting similar bureaucratic contextual factors identified in this study.

2. Adding to CoP theory by revealing the conditions and practices contributing to the emergence of CoPs

This study adds a new dimension to CoP theory by identifying the conditions and practices that contribute to the emergence and maintenance of m-learning CoPs. For example, practitioners and stakeholders did not have control over the organisation’s bureaucratic context. The organisation’s bureaucratic context had important implications for practitioners and stakeholders that influenced their conceptualisation and interpretation of m-learning initiatives and their practices. These implications formed conditions conducive to the emergence and maintenance of m-learning CoPs, allowing practitioners and stakeholders to deal with the organisation’s bureaucratic context.

At the core of m-learning CoPs there is evidence of Wenger’s (1998) CoP concept in mutual engagement, joint enterprise and shared repertoire. However, upon closer inspection this study has added a new dimension to CoP theory by identifying three key conditions important for the emergence and maintenance of m-learning CoPs including: 1) a sense of purpose; 2) interpersonal connections; and 3) informality and autonomy in the way practitioners and stakeholders conduct work associated with m-learning development and implementation.
The role of the sponsor is important in supporting the conditions that allow m-learning CoPs to cohere. For example, sponsors provide a shared sense of purpose and level of informality and autonomy for practitioners to conduct m-learning work. Therefore, practitioners were able to negotiate certain m-learning decisions with the sponsor and through their negotiations and collaborations establish mutual engagement and joint enterprise. Practitioners used artefacts such as emails and project plans to share information with stakeholders. They also balanced their workload and differing priorities with their day-to-day organisational role, by sharing tasks with other staff through interpersonal connections, and having the autonomy to work with others outside of organisational reporting lines on an as-needs basis.

Working within a bureaucratic context that imposes constraints, priorities and objectives; practitioners and stakeholders developed practices that allow them to work within this context and cohere as m-learning CoPs. An important example is the practitioners’ inclination to build interpersonal connections with stakeholders, contributing to their coherence as m-learning CoPs. Some m-learning CoPs dissolved after m-learning initiatives were completed, while others appeared to continue. Where practitioners are skilled in motivating stakeholders and efficiently creating strong connections with them, they tend to be more successful in gaining the voluntary participation of stakeholders in m-learning activities. This is important, because practitioners often had limited m-learning and technical expertise, and further, limited access to resources and expertise due to organisational cost and time constraints. Consequently, they had to rely on interpersonal connections to gain access to expertise they did not possess and ask other staff in the organisation to complete m-learning tasks, such as asking IT staff to complete technology tasks and marketing staff to work on marketing tasks associated with m-learning implementation. Practitioners who build strong commitment and support from stakeholders also tend to gain a more positive perception of m-learning implementation from learners and their sponsors.

This study provides an understanding of how to foster and establish the conditions and practices contributing to m-learning CoP coherence. With an in-depth understanding of the conditions and practices provided by this study, m-learning researchers, practitioners and stakeholders can better plan and support CoP development, to improve m-learning adoption and sustainability of m-learning benefits to employees and the organisation.

3. *Enriching CoP theory by further bringing to light how the concepts of mutual engagement, joint enterprise and shared repertoire are operationalised in an organisational context*

Sponsors have significant influence in m-learning development and implementation and CoP coherence. The sponsor contributes to CoP coherence where a sense of mutual engagement, joint enterprise and shared repertoire with practitioners and stakeholders are operationalised in an organisational context. This is often achieved when sponsors take on management control, provide broad m-learning objectives and focus on rapid implementation, providing practitioners and learners with a sense of purpose and urgency. Sponsors are also active in their vocal support and participation in m-learning initiatives and support key conditions that allow m-learning CoPs to form, including providing practitioners with a level of flexibility and autonomy to conduct their work.
The significant influence and role of sponsors in CoPs have been overlooked by CoP and m-learning authors. This study demonstrates that sponsors are critical to the development and implementation of m-learning and contribute to m-learning initiatives, emerging as m-learning CoPs, supporting practitioners and stakeholders in dealing with the challenges of delivering m-learning in a bureaucratic context. They are also critical in providing important guidance and focus for practitioners and stakeholders to prioritise their organisation’s needs, allowing both learners and the organisation to realise the benefits of m-learning. By revealing the important influence of the sponsor in implementing m-learning implementation and CoPs; practitioners and stakeholders can better prioritise, plan, liaise and interact with the sponsor to improve the way m-learning is developed and implemented in their organisation.

This study provides insights into the significant influence of sponsors on CoPs and enriches CoP theory because it extends how CoPs emerge. By revealing the important role of the sponsor in CoPs; this study demonstrates that CoPs can be more widely applied and supports both the development and implementation of initiatives, learning and knowledge sharing in a bureaucratic industry context for the benefit of both employees and the organisation.

4. **Enriching CoP theory by revealing how instruments, such as an element of competition, enhance mutual engagement, joint enterprise and shared repertoire in CoPs**

The importance and the way m-learning CoPs are enhanced amongst and between practitioners and stakeholders, by having organisational instruments such as a competition element to m-learning initiatives, extends and enriches CoP theory not explored by Wenger (1998) or other CoP scholars. This study demonstrates that m-learning initiatives with an element of competition enhance interpersonal relations within a CoP and can be used as important instruments in supporting practitioners and stakeholders to cohere as CoPs. This is because an element of competition can contribute to a shared repertoire by providing practitioners and stakeholders with a routine and rhythm, and shared artefacts that promote a common and shared view of m-learning.

Practitioners, learners and sponsors refer to their own experience with emails or reports related to competition to discuss what is working well and what can be improved as they negotiate a joint enterprise or understanding of their involvement in the CoP. Furthermore, an element of competition in m-learning development and implementation often supports meaningful social interactions of mutual engagement, as demonstrated when learners voluntarily help each other, encourage those who struggle and find ways of making the understanding of m-learning training material fun through banter and friendly competition between other learners using the m-learning scores.

By understanding how an element of competition enhances CoP concepts of mutual engagement, joint enterprise and shared repertoire, this study allows CoP scholars to further apply and extend CoPs into the development and implementation of m-learning initiatives in an industry context. This study confirms the wider application of CoPs highlighting their value in both the development and implementation of m-learning initiatives as well as supporting knowledge sharing in the uptake of m-learning training content and initiative implementation, improving employee engagement and adoption of m-learning for the mutual benefit of employees and the organisation.
In summary, the findings from this study add new dimensions, and extend and provide a deeper understanding of how social and contextual considerations help practitioners, stakeholders and researchers improve the development and implementation of m-learning in bureaucratic organisations. The findings from this study can also be tested, and potentially extended, on other initiatives such as some Information Systems (IS) influenced by similar bureaucratic contexts.

1.5.2 Contribution to the m-learning body of knowledge

Departing from other m-learning literature, this study has found that for practitioners and stakeholders, the technology challenges associated with m-learning development and implementation constitute a small part as compared to social, relational and organisational challenges. Three significant contributions to the m-learning body of knowledge are provided by the research findings, summarised below.

1. Identifying and confirming bureaucratic contextual factors and their implications for m-learning initiatives

As discussed in the contribution to CoP theory (see section 1.5.1), this study reveals important contextual factors influencing m-learning initiatives, reflecting the bureaucratic context. The way these bureaucratic factors influence m-learning implementation is significant and have been largely ignored by m-learning researchers who tend to take a technocentric perspective and conduct m-learning research in educational rather than industry contexts. By focusing on the social, relational and organisational aspects of m-learning implementation, this study has found that the bureaucratic context has the following implications: 1) practitioners and stakeholders working together in an informal manner; 2) practitioners meeting the sponsor’s requirements; 3) m-learning work being time-bound; 4) supporting the learning needs of learners; and 5) learners valuing social interaction.

Practitioners and stakeholders aware of these bureaucratic factors and who are skilled in working together in m-learning initiatives, resembling CoP, are better able to deal with the challenges of developing and implementing m-learning in a bureaucratic context. Consequently, m-learning initiatives emerging as CoPs tend to be beneficial to the organisation and its employees, because practitioners and stakeholders share knowledge and learning of m-learning training material during development and implementation. Practitioners also benefit from working closely with stakeholders and improving their knowledge on how to develop and implement initiatives in their bureaucratic company’s context in general, which could be applied to other similar initiatives.

2. Identifying the practices that reflect practitioners and stakeholders cohering as m-learning CoPs

This study has found that m-learning CoPs form in such a way that practitioners and stakeholders can deal with the challenges and implications of implementing m-learning in a bureaucratic context. M-learning CoPs thus tend to have:
• **Practitioners** display the following practices: 1) building strong interpersonal connections with stakeholders; 2) leveraging pre-existing relationships; and 3) working on day-to-day organisational roles that overlap with some m-learning objectives.

• **Sponsors** display the following practices: 1) offering broad m-learning objectives that provide practitioners with a sense of purpose; 2) being supportive without specifying practitioners’ roles/responsibilities, providing practitioners with a level of flexibility and autonomy; and 3) being available to address escalating issues.

• **Learners** display the following practices: 1) socially interacting amongst learners and with practitioners and the sponsor; and 2) senior managers visibly supporting, promoting and participating in m-learning.

M-learning research to date has not adopted a CoP perspective to investigate m-learning development and implementation. By using a CoP perspective, focusing on social and organisational considerations, this study reveals the importance and implications of bureaucratic contextual factors and the conditions supporting m-learning emergence and maintenance in an industry context. Furthermore, this study provides a significant contribution to the m-learning body of knowledge and practice, because m-learning literature to date has not empirically explored how m-learning initiatives are developed and implemented by closely observing practitioners’ and stakeholders’ practices, how they conceptualise m-learning initiatives, how they cohere as CoPs and finally their role in the company’s bureaucratic context.

Some m-learning CoPs continue, as previously mentioned. This demonstrates that m-learning initiatives which emerge as CoPs are valuable and important for organisations to understand and foster, because they encourage a sense of cohesion and community through continuous engagement and social interaction amongst practitioners and stakeholders. Therefore, this study demonstrates that the social and organisational aspects of m-learning implementation are critical and often, as or more important than the technocentric focus taken by other m-learning researchers in the realisation of m-learning benefits to both employees and the organisation.

3. **Identifying the conditions conducive to m-learning CoP emergence and maintenance in supporting m-learning development and implementation in a bureaucratic context**

By focusing on the social, relational and organisational aspects of m-learning implementation, this study has revealed three important conditions supporting m-learning CoP emergence and maintenance in a bureaucratic context: sense of purpose, interpersonal connection and informality and autonomy in the practitioners’ and stakeholders’ interactions and work. Consequently, m-learning CoPs were significant in supporting m-learning development and implementation in a bureaucratic context.

In summary, the findings from this study provide a significant contribution to the m-learning body of knowledge because m-learning literature to date has not empirically investigated how m-learning initiatives are developed and implemented with a focus on practitioners and stakeholders in bureaucratic environments. This study provides in-depth understanding – not investigated by other m-learning researchers – of the social, relational and organisational aspects of m-learning initiatives by closely examining practitioner and stakeholder practices,
their connections and relationships, how they conceptualise m-learning initiatives and their role in a bureaucratic organisational context.

By exploring bureaucratic contextual factors, their implications and the conditions conducive to m-learning CoP emergence and maintenance, a significant contribution to the m-learning body of knowledge is provided in this study. The understanding of m-learning implementation in an industry context is therefore extended beyond the generic recommendations found in CoP literature to date (Josserand 2004). A greater understanding of the factors influencing m-learning initiatives will help m-learning researchers and practitioners to appreciate the complexity of m-learning implementation and better plan m-learning initiatives.

1.5.3 Contribution to m-learning practice

The research findings provide a contribution to practice by offering a m-learning framework, identifying the skills and practices required for improved m-learning implementation. This study has found that m-learning initiatives tend to be implemented by practitioners with limited m-learning and technical expertise. Therefore, this framework provides a practical framework that helps organisations prepare and equip their staff to understand the complexities associated with m-learning development and implementation.

This framework can be useful to m-learning practitioners and stakeholders, and improve the planning, development and implementation of m-learning initiatives. This framework can also prepare existing employees to understand what is required to take on m-learning practitioner roles that require strong relational skills to build interpersonal connections with stakeholders to complete the work associated with m-learning initiatives.

1.6 Dissertation structure

This thesis consists of nine chapters. Chapter 1 is the introductory chapter and provides a brief background and overview of the study including the research motivation, questions, objectives, scope, contributions to theory and practice and dissertation structure.

Chapter 2 presents the first of a two-part comprehensive literature review to establish a working definition for this research. This part of the literature review explores the technology and social challenges associated with m-learning implementation and focuses on m-learning literature relevant to corporate businesses, including the importance of m-learning to corporate businesses and individuals.

Chapter 3 is the second part of the literature review and explores theoretical perspectives relevant to m-learning in a corporate business context, including Wenger’s (1998) Community of Practice (CoP) theory and limitations in the current m-learning literature. This chapter also discusses how this study addresses criticisms associated with practice theory and Wenger’s CoP theory and concludes by presenting the focus, scope and research questions for this study.

Chapter 4 details the research methodology, starting with the research paradigms and philosophical assumptions considered. This is followed by details of how the research method was selected and justified for this study, and concludes by detailing the research design and strategy for writing up the results.
Chapters Five to Seven follow the same structure in presenting the analysis and discussion of each case in the form of a within-case analysis which includes: 1) the background to the case; 2) description of the research participants; 3) practitioners’ perspective; 4) stakeholders’ perspective, and concludes with a summary and discussion of key findings within each case.

Chapter 8 provides a cross-case analysis drawing out similarities and differences between the three cases and abstracting insights about the practices and role of practitioners, how stakeholders conceptualise m-learning and the nature of the m-learning initiative. The themes used in this chapter follow the same three themes used in the within-case analysis chapters to answer the three research questions.

Chapter 9 concludes the thesis by outlining the study’s contribution to theory and practice. This chapter also describes the limitations of the study and suggestions for future research.

The structure of the dissertation is summarised in Table 1.1.

<table>
<thead>
<tr>
<th>Table 1.1: Dissertation structure</th>
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<tbody>
<tr>
<td><strong>Chapter</strong></td>
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</tbody>
</table>
| 1. Introduction | • Research motivation, objectives, questions and scope  
• Significance of the research – contribution to theory and practice  
• Dissertation structure |
| 2. Literature Review  
Part A: M-learning and its Implementation | • Defining m-learning  
• Academic m-learning literature  
• Technology and social challenges associated with m-learning implementation  
• M-learning literature presented by industry practitioners  
• Existing studies of m-learning implementation  
• Investigating why m-learning implementation are important for industry |
| 3. Literature Review  
Part B: Theoretical Perspectives | • Positivist and rationalist perspectives  
• A practice and Wenger’s CoP perspective  
• Limitations of m-learning literature to date  
• Research focus and scope  
• Research questions |
| 4. Research Methodology and Design | • Research paradigms and their philosophical assumptions  
• Research method selection  
• Justification for using the case study methodology  
• Research design  
• Strategy for writing the results |
| 5. Within-case Analysis – Case 1 | • Case Study 1 Background  
• Research participants  
• Practitioners’ perspective and stakeholders’ perspective  
• Discussion |
| 6. Within-case Analysis – Case 2 | • Case Study 2 Background  
• Research participants  
• Practitioners’ perspective and stakeholders’ perspective  
• Discussion |
| 7. Within-case Analysis – Case 3 | • Case Study 3 Background  
• Research participants  
• Practitioners’ perspective and stakeholders’ perspective  
• Discussion |
| 8. Cross-case Analysis | • Themes 1 and 2: Practitioners’ perspective  
• Theme 3: Stakeholders’ perspective  
• Cross-case analysis discussion |
| 9. Conclusion | • Key insights and conclusions  
• Contribution to CoP theory, m-learning body of knowledge and practice  
• Limitations of study and suggestions for future research  
• Concluding remarks |
Chapter 2 – Literature Review Part A: M-learning and its Implementation

This chapter is the first part of the literature review and explores the concept of mobile learning (m-learning) to gain a shared understanding of what is meant by m-learning in the literature and establish a working definition for this research. This will help inform how m-learning is defined in this study. The purpose of analysing the different m-learning definitions used in the literature allows for the explaining, understanding and conceptualisation of the evolution and direction of m-learning (Guy 2009). Both academic and practitioner literature is analysed to gain a balanced perspective of the available body of knowledge associated with m-learning implementation, including technology and social challenges. This chapter also discusses existing studies of m-learning implementation and investigates why m-learning is important and beneficial to both corporate businesses and individual learners.

2.1 Defining m-learning

M-learning is not merely the conjunction of ‘mobile’ and ‘learning’ (Traxler 2011a). Authors of early m-learning literature tend to refer to m-learning as an extension of electronic learning (e-learning), including Georgiev et al. (2004) and Holzinger et al. (2005). E-learning is defined “as a way of learning that benefits on the support and improvement brought by the computer and by diverse communication techniques” (Ozuorcun & Tabak 2012, p. 299). Some authors do not perceive m-learning as distinctively different from e-learning and instead refer to m-learning as “mobile e-learning” (Guy 2009). Even in more recent m-learning literature, several authors draw a strong link between m-learning and e-learning, from 2011 onwards, including Roberts (2012), Martin and Ertzberger (2013), Miller and Doering (2014), Paul (2014) and Lin et al. (2016). For example, Lin et al. (2016, p. 576) and Paul (2014, p. 2) describe m-learning as a “following up” or a “subset” of e-learning. These authors emphasise the technology of m-learning as a subset of e-learning modalities (Paul 2014). Similarly, other authors emphasise that e-learning is now common, and that m-learning is an extension of e-learning (Miller & Doering, 2014). Furthermore, Martin and Ertzberger (2013, p. 77) highlight that m-learning is “here and now mobile learning” because m-learning technology has added capabilities not available in typical e-learning. The improvements on e-learning that these authors attributed to m-learning were largely that m-learning incorporates portable technologies.

In addition to conceptualising m-learning as an extension of e-learning, another characteristic of early m-learning literature is that authors take a technocentric viewpoint of m-learning (Winters 2006). Because technology changes rapidly, definitions with a technocentric orientation, with reference to specific technologies, quickly become outdated (Traxler 2005; Traxler 2010a). This is illustrated by Traxler (2005, p. 1), who defines m-learning as “any educational provision where the sole or dominant technologies are handheld or palmtop devices”, referencing palmtop devices which have been largely replaced with multi-function or smart-devices such as phones and tablets. Similarly, Quinn (2000, n.p.) provides another technocentric definition of m-learning and conceptualises m-learning as an extension of e-learning – “it’s e-learning through mobile computational devices: Palms, Windows CE machines, even your digital cell phone”. The technology aspect of m-learning is also highlighted by Brink
(2011, p. 27), defining m-learning as “micro learning: training titbits delivered via a mobile device such as a smartphone, MP3 player, netbook, Kindle, or iPad”. Similarly, Paul (2014, p. 1) describes m-learning as “the electronic delivery of training using mobile devices such as smartphones, tables, and laptops”. Other authors do not make reference to specific technologies but rather emphasise that technology is central to the definition of m-learning and that “one cannot be separated from the other” (Petit & Santos 2014, p. 4).

More recently authors have challenged the technocentric viewpoint. These authors conceptualise m-learning from the learners’ or users’ perspective. Authors such as Ally and Prieto-Blazquez (2014, p. 145) de-emphasise the importance of technology in m-learning and argue that m-learning “is not about the technology, it is about the learner”. Mehdipour and Zerehkafi (2013, p. 93) also do not highlight the importance of technology and describe m-learning as “U-Learning, personalised learning, learning while mobile, ubiquitous learning, anytime/anywhere learning and handheld learning”. Other authors emphasise the learner and the nature of learning while using technology and provide an equal focus on the learner and technology. For example, Dar and Bha (2016, p. 1469) define m-learning as “the learning to seek knowledge while on the move via the wireless networked devices” and Benvin (2016, p. 18) describes m-learning as “educational experiences accessed through mobile devices”. Sharples et al. (2007) argues that m-learning is not just learning facilitated by mobile technology and emphasises the importance of social interactions and processes amongst people and with interactive technologies – “[m-learning is] the processes of coming to know through conversations across multiple contexts among people and personal interactive technologies” (p. 8).

Unlike early m-learning literature, more recent literature seeks to draw a clear distinction between m-learning and e-learning. For example, Benvin (2016, p. 18) describes m-learning as “not simply the process of making e-learning content available on mobile devices ... and differs from traditional e-learning”. Authors like Benvin argue that m-learning differs from traditional e-learning because it makes use of a variety of delivery mechanisms which include social and content interactions.

In more recent m-learning literature, authors also emphasise the portable nature of m-learning and argue that m-learning supports learning in multiple contexts, including the workplace. M-learning definitions referring to ‘employees’ rather than the generic term ‘learners’ has appeared in the literature in the last four to five years. For example, Straz (2015, p. 1) defines m-learning as “learning across multiple contexts using personal mobile devices... enabling employees to receive and engage with real-time information while on-the-go anywhere, at any time”. Similarly, Genzic et al. (2014, p. 553) also emphasise the learner ‘mobility’ in their definition and specifically refers to ‘employees’ as the target audience for m-learning and define it as – “using portable devices that allow the employees to learn in different environments and whilst on the move instead of being restricted to a classroom setting or tied to a desk”. Another example is provided by Pimmer and Pachler (2014), who highlight the importance of m-learning for knowledge application rather than for knowledge acquisition and emphasise the practical aspect of being able to operate successfully across work contexts.
Authors who emphasise the portability dimension of m-learning highlight the mobile ‘technology’ and learner ‘mobility’ aspects, with technology providing learner autonomy, allowing the learner to choose when and where they wish to learn (O’Malley et al. 2003; Naismith et al. 2004). For example, O’Malley et al. (2003, p. 6) define m-learning as “any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies”.

Other authors move away from a learner-centric perspective and adopt an organisational performance improvement perspective. These authors see m-learning as a key enabler of improved employee and organisational performance. The Advanced Distributed Learning (ADL) Initiative, a US Government Defence program, links improved performance with training enabled by m-learning, and defines m-learning as “Leveraging ubiquitous mobile technology for the adoption or augmentation of knowledge, behaviours, or skills through education, training, or performance support” (ADL 2017).1 Little (2012) illustrates that corporate businesses are utilising m-learning to provide knowledge and expertise needed by their employees, whenever and wherever. Pande & Gomes (2015) highlight that corporate businesses could use m-learning to keep up with the constantly changing business pace and compete effectively. The authors that conceptualise m-learning from a performance improvement perspective tend to emphasise the benefits of m-learning in terms of improvements to employee learning, productivity and increased return on investment on organisational training budgets, because m-learning could result in better application of knowledge and overall training time can be reduced (Genzic et al. 2014; Benvin 2016).

Based on the literature review conducted for this study, there is no universally agreed definition of m-learning and multiple definitions prevail (Crescente & Lee 2010; Keskin & Kuzu 2015). The working definition of m-learning developed for this study is informed by three salient characteristics identified in the literature review conducted for this research.

The first salient characteristic relates to the role of technology in m-learning. Technology is an important part of enabling learning and therefore, in developing the working definition for this study, the term “leveraging mobile technology” is used in the first part of the working definition. This provides a reference to the technology that can be used without being in a fixed location, in a similar vein to the definitions by O’Malley et al. (2003) and Brink (2011). To provide clarity about what is meant by this term in common present-day usage, examples are provided in the working definition – “such as smart phones, tablets and laptops”. By providing

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examples, the definition does not limit mobile technologies used for m-learning but rather the examples provided. This achieves the dual purpose of providing clarity with examples but also allows the definition to not go out of date as technologies change over time.

The second salient characteristic relates to the target audience of m-learning. The working definition builds on that provided by Genzic et al. (2014) where they refer to ‘employees’ as the target audience for m-learning rather than the generic ‘learner’ or ‘user’ used by other authors. Similarly, this research uses the term “employee” in its m-learning definition to clearly situate the focus and context of this research, which targets employees in a corporate business context.

The last part of the working definition addresses the third salient characteristic and acknowledges the broad application of m-learning as highlighted in the ADL (2017) definition—“supporting education, training, or performance support”. Providing specific reference to how m-learning is applied in the last part provides a balance to the technology perspective in the first part of the definition. Furthermore, this description of how m-learning is applied is appropriate for this study because of its focus on corporate businesses.

Drawing on these three salient characteristics, and for the purposes of providing clarity and focus for this study, m-learning is defined as,

*Leveraging mobile technology, such as smart phones, tablets and laptops, for employees and for the purposes of education, training, or performance support.*

### 2.2 Academic m-learning literature

There is little uniformity in the way organisational m-learning is treated in academic research and literature. There are numerous academic literature reviews that tend to focus on pedagogy, educational theory and research methodologies. These are also predominantly situated in an educational context (see Table 2.1).

The large number of m-learning literature reviews suggests that the m-learning field is of growing interest and importance to the academic community (Macdonald & Chiu 2011; Krull et al. 2017). The m-learning field is still an emerging field of study (Traxler 2011c) because literature reviews are commonly used by scholars and researchers to gain an understanding of the m-learning body of knowledge to create a firm foundation for advancing knowledge (Webster & Watson 2002). Therefore, m-learning literature reviews are analysed below to provide further breadth and depth of understanding to inform this study. The analysis of m-learning literature review studies has found that while these reviews provide insights into student adoption, educational and pedagogical theories and research methodologies in schools and universities, they do not discuss the issues associated with employees in an industry context. The focus and findings from these literature reviews can be grouped into four key concepts: 1) the m-learning audience is focused on students; 2) an emphasis that m-learning will continue to grow in importance; 3) a focus on pedagogy and educational theory; and 4) a focus on research methodologies (Table 2.1).

*Table 2.1: M-learning literature reviews based on an educational context*
Some authors focus on students at different levels, from primary/elementary to high school to university level. For example, the relatively recent systematic literature review conducted by Fu & Hwang (2018) focused on mobile technology in collaborative learning. They found that university (or college) students received the greatest emphasis in m-learning studies and few studies were conducted on teachers and adults. Similarly Alioon and Delialioglu (2015) found that most m-learning studies they analysed were based on primary and high school students.
based in Asia. They found that most studies focused on engagement of students and just-in-time learning using real-world examples.

Also focused on university students, a report released by the Universities and Colleges Information Systems Association (UCISA) described six case studies deemed to be examples of good practice in using mobile technologies to enhance learning. This report shows that most case studies used iPads, reported overall positive student experiences in m-learning adoption, and that m-learning will continue to grow in importance in supporting student learning. Only one out of the six case studies provided some advice into how future m-learning initiatives can be better implemented using iPads in a laboratory setting (Ahmed et al. 2013). While these case studies provide some insight into m-learning benefits and challenges for student learning in universities, they do not explore the benefits and challenges to employees in an industry setting.

Other authors also emphasise the importance of m-learning because of its continuing rapid growth and reaching a ubiquitous state in everyday life for many people worldwide. For example, Hwang and Wong (2014) came to this conclusion based on countries such as Taiwan and the UK, where they have popularised mobile and ubiquitous learning approaches to nation-wide or region-wide scales. Naismith et al. (2004, p. 2) also emphasise that the growth of m-learning will continue and that the “whole world is going mobile” leading to considerable interest in exploiting the almost universal appeal and abundance of mobile technologies for educational use. Naismith et al. (2004) focused on academic literature and case studies in an educational context with a focus on educational theory. In contrast to dominant orthodox methods of learning (learning as an isolated individual activity), Naismith et al. (2004) argued that m-learning is a rich, collaborative and conversational experience.

On the other hand, pedagogy and educational theory was the main focus for authors such as Petrova and Li (2009) and MacCallum and Parson (2016). A learning-focused perspective was adopted by Petrova and Li (2009) and they argue that m-learning researchers need to think not only in terms of technology, but other domains such as pedagogy and educational theory. They found that contemporary m-learning research no longer focuses exclusively on technology but is also concerned with building the theoretical foundation of m-learning, both in terms of educational and pedagogical theories. While MacCallum and Parson (2016) did not use a conventional literature review approach, they used two contrasting examples to emphasise that careful and thoughtful application of theory in m-learning is important to ensure that appropriate pedagogy is adopted. They argue that m-learning should draw on a mixed and rich range of learning theories recognising that m-learning experiences can be extremely diverse. Consequently, m-learning can be a theoretically rich way of teaching and learning when various technologies are taken into account, which can help us to leverage the unique properties of m-learning (MacCallum & Parson 2016).

A bibliometric approach to and focus on different investigative methodologies has been adopted by other authors. The literature reviews that adopt a bibliometric approach tend to be focused on evaluating the effectiveness of m-learning (Wu et al. 2012; Krull et al. 2017). Some of these reviews have found that descriptive research was the most commonly used research method for m-learning studies (Cheung & How 2009; Wingkvist & Ericsson 2011). The recent
literature review conducted by Krull et al. (2017) analysed the research topics, methods, settings, and technologies used in m-learning research, focusing solely on the higher education sector. They found that the most common purpose for conducting m-learning research was to evaluate its effectiveness and that a significant change is occurring through Bring Your Own Device (BYOD) where learning with multiple personal devices is possible. Wu et al. (2012) conducted a systematic review on m-learning literature with a similar focus on research purpose, methodologies and outcomes. They found that most research purposes focused on effectiveness and system design. They also found that surveys and experimental methods were the most used research methods and that the research outcomes in the studies were significantly positive.

Also focused on research methodologies, Wingkvist and Ericsson (2011) used a systematic review approach but focused on conference proceedings instead of journal articles. Their focus may be because journal articles tended to be more stringent in publications with a strong preference for articles that have a proven theoretical basis and empirically based studies. These stringent requirements for journal publications are difficult to meet for an emerging new research area such as m-learning. Wingkvist and Ericsson (2011) found that research methods were evenly distributed, with the exception of basic research (development of new theories). They arrived at the same conclusion as Cheung and Hew (2009) and found that the majority of papers were based on descriptive research. Cheung and Hew (2009) also focused on the way m-learning research is conducted in their review of research methodologies used in schools and higher education settings. Their review of empirical literature found that questionnaires were the most used data collection method.

The authors of m-learning literature reviews tend to either analyse academic articles, research studies or projects. Authors that focus on analysing journal or conference articles tend to provide a view based on the breadth of reviewing many articles over several years, rather than any in-depth analysis of specific m-learning studies or projects. For example, Fu and Hwang (2018) analysed 90 articles published from 2007 to 2016, and Petrova and Li (2009) analysed 333 articles published between 2005 and 2007. Both reviews look for common themes across many articles without any in-depth analysis. On the other hand, other literature reviews tended to analyse 10 to 30 research studies or projects from around the world and provided deeper analysis of some m-learning studies (Naismith et al. 2004; Ahmed et al. 2013; Hwang and Wong; 2014; Alioon & Delialioglu; 2015), as discussed earlier and summarised in Table 2.1.

Despite the growth in m-learning academic studies, they tend not to be published in highly ranked peer reviewed journals. As discussed earlier, this may be because m-learning is a

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2 Journals ranked as A*, A and B were considered ‘highly ranked research journals’ from the 2013 ABDC and CORE journal lists (see Appendix 2 for details). These highly credible journal lists were designed to be used by Business and Information Systems schools in Australia to weed out non-impact journals while being disciplined and focused, despite the suite of international journals. The ABDC Journal
relatively new research area (Crescente & Lee 2010; Wingkvist & Ericsson 2011) and the stringent requirements for journal article publications are difficult to meet for an emerging new research area such as m-learning. This is further illustrated by Vavoula and Sharples (2009), highlighting that the first research projects only appeared in the second half of the 1990s and the first international research conferences only a decade ago.

Furthermore, highly ranked peer reviewed journals tended not to feature m-learning literature written by industry practitioners – those working in the m-learning field (see section 2.5). This may be because industry practitioners tend to rely on anecdotal rather than empirical evidence and provide descriptive rather than analytical case studies. Practitioner literature also tended to provide high level and brief articles rather than in-depth and comprehensive studies without theorising or adopting any theoretical frameworks. Furthermore, some practitioner literature may offer potentially biased viewpoints because of their association with consultancies or technology vendors rather than having an impartial position.

Given the novelty and lack of m-learning studies being featured in highly ranked journals by academics and practitioners, there is an opportunity here to add to the m-learning body of knowledge by taking an industry focus to m-learning research. Furthermore, some authors of academic research studies highlight the difficulties organisations have in developing and adopting m-learning. The difficulties experienced, as reported in academic m-learning studies, include technology and social challenges.

2.3 Technology challenges associated with m-learning implementation

Academic m-learning studies have tended to focus on technology related challenges of m-learning from the learners’ perspective. Such challenges explored by these authors include technology adoption and task fit, focusing on the adoption of mobile technologies and how these technologies are used, why they are adopted and how well mobile technologies are used for learning or completing tasks. Authors focused on technology related challenges also explored the technology specifications associated with m-learning (hardware and software constraints), issues associated with technology obsolescence, and compatibility and content security issues. A summary of the key m-learning technology challenges is provided in Table 2.2.

Table 2.2: M-learning technology challenges

Quality list was used because of its highly credible stature in the business community and its relevance given the objectives of this thesis where a business focus was one of the most important considerations followed by how m-learning is utilised in a business context.
<table>
<thead>
<tr>
<th>Area of concern</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fitness for purpose (technology adoption and task fit)</td>
<td>Ho &amp; Chou (2009); Gebauer et al. (2010); Liu et al. (2010); Iqbal &amp; Qureshi (2012); Williams et al. (2015); Yadav &amp; Chaudhary (2017);</td>
</tr>
<tr>
<td>Technology specifications (hardware and software constraints)</td>
<td>Maniar et al. (2008); Looi et al. (2010); Hamdani (2013); Mehdipour &amp; Zerehaki (2013); Chandra et al. (2016); Stanciu &amp; Gheorghe (2017);</td>
</tr>
<tr>
<td>Rapid obsolescence and compatibility</td>
<td>Crescente &amp; Lee (2010); Looi et al. (2010); Zolfo et al. (2010)</td>
</tr>
<tr>
<td>Content security issues</td>
<td>Kahle-Piasecki et al. (2012); Fuller &amp; Joynes (2015)</td>
</tr>
</tbody>
</table>

Technology adoption and technology and task fit have been emphasised by Liu et al. (2010) and Yadav and Chaudhary (2017) as critical determinants of users’ perceptions in the adoption of m-learning. Liu et al. (2010) applied the Technology Acceptance Model (TAM) to web-based learning programs and found that learners familiar with mobile technologies were able to interact more effectively with m-learning programs. TAM was also taken up by Iqbal and Qureshi (2012) to explore the perceptions of university students and their m-learning adoption. Authors including Ho and Chou (2009), Gebauer et al. (2010) and Williams et al. (2015) used the Task Technology Fit (TTF) or the Unified Theory of Acceptance and Use of Technology (UTAUT) model in their studies, assuming that a positive relationship between technology functionality and task requirements is connected to improved m-learning adoption.

Whilst some authors have examined the role that technology acceptance, task fit and familiarisation plays in the learners’ positive perceptions of m-learning initiatives, other authors have examined the impact of technology specifications, and hardware and software constraints on learners’ perceptions of m-learning. Limitations in communication connectivity and battery life, especially in rural areas and where internet and mobile phone coverage and access to power can be limited, affect the learners’ experience (Mehdipour & Zerehaki 2013).

Technology advancements are inconsistent globally and even though communication infrastructure is improving globally, some developing countries still have limited communication infrastructure and this could limit learners’ ability to access m-learning content online (Selanikio 2010; Pimmer et al. 2014). Other technology specification challenges highlighted by Maniar et al. (2008) include small screens, small key sizes, a lack of data input capability, a lack of standardisation, limited interoperability and compatibility issues with other technology platforms. Similarly, Stanciu and Gheorghe (2017) highlight limited memory, small screens, need for battery recharge, losing internet connection in areas with limited access and use of files with special formats as disadvantages with mobile technology in m-learning. Even though mobile devices have continued to become more capable; over the last 15 years, both processor and network speeds have increased one thousandfold. Chandra et al. (2016) highlight that the batteries upon which most mobile devices depend have not advanced as quickly. They assert that despite significant research into new battery chemistries and construction
techniques, typical rechargeable battery energy density has only doubled in that same 15-year period. Therefore, limited mobile battery life remains a challenge (Chandra et al. 2016).

Other authors explored issues associated with technology obsolescence and compatibility and content security issues. For example, Crescente and Lee (2010) and Looi et al. (2010) identified mobile technology changes and obsolescence as impacting learners’ perceptions of m-learning programs. Kahle-Piasecki et al. (2012) and Fuller and Jones (2015) emphasised the significance of content security issues and the difficulty in protecting and securing content delivered through mobile devices, especially if it is accessed in public places.

In relation to the technology challenges of m-learning development and adoption, some authors have provided significant insights and knowledge in addressing known technology challenges (Looie et al. 2010; Stanciu & Gheorghe 2017). For example, the study conducted by Stanciu and Gheorghe (2017) provide a greater understanding of how accounting students in 2016 used their mobile device(s). Their study raises awareness of how the use of m-learning devices benefits accounting students and professionals in their work, and through ongoing training and learning. The study conducted by Looi et al. (2010) provided important considerations into the choice of mobile devices for schools including: learning activities it will support, cost, connectivity (data, phone, broadband, etc.), subscription plan, range of available software, weight and robustness of the device, and functionalities such as a built-in camera or Global Positioning System. They also highlight that the affordance of a mobile device determines the type of learning activities that can be designed.

The technology challenges associated with m-learning implementation appear to be discussed quite extensively. However, studies focused on employees in an industry context and the social challenges associated with m-learning implementation seem to be less prominent, compared to technology-focused studies in academic m-learning literature. Even though research examining technology issues and task fit have improved our understanding of the technical challenges associated with m-learning, authors have criticised the technology-focused approach that needs to be balanced by focusing on the learner and social aspects of m-learning (Naismith et al. 2004; Wiredu & Sorensen 2006; Petrova & Li 2009; Ahmed et al. 2013). The technocentric focus of academic literature may be influenced by the continuous change in m-learning technology, prompting academic studies to keep up with the latest technological advancements. Furthermore, as discussed earlier, the novelty and lack of m-learning studies being featured in highly ranked journals may be a contributing factor to employee and social-focused m-learning studies to be under-researched.

2.4 Social challenges associated with m-learning implementation

Organisational leadership, structure and workplace culture were highlighted by Genzic et al. (2014) as important to the implementation of m-learning programs. Wiredu and Sorensen (2006) assert that organisational structure, control, accountability and workplace stress have an impact on m-learning effectiveness. Their study found that the work-integrated m-learning initiative within a British National Health Service was unsuccessful because of contradictory motives between those that wield authority in a workplace setting. They conclude that to understand m-learning, researchers “must look beyond the physical and systemic designs of technology for effective use of mobile technology” (Wiredu & Sorensen 2006, p.317).
Other authors emphasise social challenges using a community of inquiry approach to teaching and learning and tend to locate their research in a higher education context. For example, Vaughan (2010) focused on course design for blended learning, including the use of technology, and concluded that blended learning course design was a challenging process, and required systematic and sustained support of a professional development community. Also set in a higher education context, Gutiérrez-Santiuste & Gallego-Arrufat (2016) emphasised the difficulties and importance of establishing and maintaining a social presence in virtual communications (such as m-learning).

Ethical challenges were emphasised by authors such as Burden et al. (2011), Wishart (2011), Wishart & Green (2011) and Traxler (2012). The ethical challenges highlighted by these authors include the erosion of employees’ personal time, people’s concern over security related to the increasing amount of information and images to be stored, and privacy issues related to the ease with which information can be captured in a range of locations. For example, Traxler (2012) highlights that m-learning is increasingly used in different contexts, outside of traditional institutions. However, despite increased use, m-learning is an “emergent and fragmented research area” and “ethical issues ... in terms of duty of care” of m-learning pedagogies and technologies are “lagging” (p. 199). Burden et al. (2011) reflect a similar sentiment and highlight a dual need that workplaces have a “responsibility to society [and] moral imperative to avoid harm” while also “enabling professional learning and exploit the full potential of technologies [and m-learning] to achieve this end” (p. 300).

Authors that focus on m-learning in an industry context emphasise the potential impact that m-learning has on the work–life balance of employees as a driver of learner resistance. They argue that m-learning exacerbates the tension between work and personal life, as it can potentially intrude on the personal lives of employees, because mobile devices are used for both work and personal use (Vavoula & Sharples 2009; Kahle-Piasecki et al. 2012). Others argue that authors of training content are concerned that their intellectual property is easily accessible and plagiarised with m-learning (Sharples et al. 2007). Key m-learning social challenges are summarised in Table 2.3.
M-learning social challenges are not dissimilar to the social challenges identified by Information System (IS) researchers who found that the failure of technology related initiatives can be rooted in the social context of the initiative (Goguen 1993; Smolander & Rossi 2008). For example, enterprise architecture researchers have known that enterprise architecture fails as a result of the social processes associated with architect and stakeholder interactions. Architects and stakeholders can have difficulties understanding each other and this can lead to negative outcomes (Van der Raadt et al. 2010). More recently in digital transformation literature, authors have attributed the inability of architects to develop commitment and support for digital transformation projects with the gap between the design of digital transformation solutions and the requirements, concerns and viewpoints of stakeholders and users (Poutanen 2012; Assar & Hafsi 2016). In other words, people responsible for developing digital transformation solutions do not understand the stakeholders and users and this has a bearing on the outcome of digital transformation projects. This is also an influencing factor in m-learning implementation in the workplace.

In addition to the social challenges identified by IS researchers, the knowledge base in the academic discipline of work-based learning is also useful for m-learning research (Pachler et al. 2011). For example, Evans (2011) argues that for research in a workplace setting and to best understand “learning at work” (p. 43), the employee or learners’ perspective must be considered.

Even though some understanding can be gained from previous IS and work-based learning research, limited m-learning research focuses on the social challenges associated with m-learning implementation. There is also a lack of research examining the industry application of m-learning, the experiences of those people responsible for developing and implementing m-learning programs and employees as learners in an industry context (Witt et al. 2011). This may
be because industry research could be more difficult than educational institutions. Securing industry participation in research can be more challenging than participation from educational institutions, because some organisations in industry may not appreciate the value of in-depth research, or have the time or resources to participate in academic research (Lee 2000). This is one of the reasons why more industry-based research is highly valuable and needed. The scarcity of academic research with an industry focus that provides industry relevant findings to practitioners (Shani 2008) can be a limitation of academic research, and this is an area this study addresses.

Furthermore, academic literature “can often be inward-looking, backward-looking and self-referential, meaning that they are often fixated on their own concerns, values and processes” (Traxler 2018, p. 1). This is demonstrated by the large number of academically focused m-learning literature reviews analysed in section 2.2. Traxler (2018) asserts that further research is required to gain a more complete understanding of the complex environment in which education exists, including distance learning and m-learning. This study addresses Traxler’s (2018) assertion because it is situated in an industry-context, rather than an educational context, and aims to provide wider insights considering social, relational and organisational factors to contribute to a more holistic understanding of m-learning implementation for both an academic and practitioner audience.

2.5 M-learning literature presented by industry practitioners

After analysing academic m-learning literature this section analyses industry practitioner literature. Understanding such literature is important because this study focuses on the application of m-learning in an industry context, focused on m-learning practitioners and employees. In contrast to academic literature, practitioner literature on m-learning appears to be more prolific. Practitioner literature includes materials such as articles, blogs and websites published in non-peer reviewed online and hardcopy periodicals and databases, as well as surveys, reports and other material from industry research organisations including Gartner, Ambient, Brandon Hall Group and the International Data Corporation (IDC).

Practitioner literature provides some insights into m-learning implementation in an industry context. However, this literature tends not to theorise the processes associated with the development and adoption of m-learning and thus tends not to be empirically based. Practitioner literature also tends to adopt a rationalist one-best-way approach describing how ‘best practice’ frameworks, processes and technologies can be applied in an industry context appear to be popular in practitioner literature (Stober & Putter 2013; Chaffe 2016; Kochattil 2016). For example, Stober and Putter (2013) published an article labelled as ‘best practice’ and named ‘Going Mobile and Micro’, in the Professional Safety magazine. They quote a literature
review conducted by Tucker (2010) and describe effective m-learning approaches as sharing the following characteristics: social interactivity, individuality and context sensitivity, portability and economic viability. Similar to Stober and Putter (2013), Chaffe (2016) and Kochattil (2016) also present ‘best practice’ with no reference to empirical evidence as the basis for such practice. The way both Chaffe (2016) and Kochattil (2016) presented ‘best practice’ was in the form of brief ‘tips’. They both emphasised that m-learning design should focus on the learner, their needs and expectations. Similarly, Krauter (2016) asserts that “mobile learning is currently the most useful tool in [the] ICT world” but does not offer empirical evidence in support of such assertions.

Descriptive, short-form or high-level case studies tend to be preferred in practitioner literature with a large part of the case study providing advice on how to successfully implement m-learning. There is little commonality in the advice provided and the reference to empirical evidence, as mentioned earlier, is often lacking. For example, in the article by Oesch (2017), the brief nature of the article is emphasised explicitly as a ‘4-minute read’. This article described how two organisations used m-learning and experienced positive results and offered advice on how to successfully implement m-learning. The advice includes: 1) helping employees understand why m-learning is implemented; 2) using rewards and recognition to encourage long-term engagement; and 3) providing employees with ways to provide feedback and make suggestions for training, communication and technology. In a manner similar to Oesch (2017), Audronis (2015) presents a two-page case study on an m-learning solution that BMC Software delivered to their sales staff, offering advice on how to successfully implement m-learning. The advice includes: 1) setting realistic goals and gaining support; 2) carefully selecting the right tools and processes for m-learning; 3) developing an m-learning course with learners’ input; 4) testing m-learning using a pilot; and 5) launching m-learning more widely. The case study was brief in its description of how the m-learning solution was developed and adopted. It concludes by saying the m-learning solution received positive feedback from staff and that BMC will further explore expanding m-learning to include more professional development courses.

Similarly, brief and descriptive, Boehle (2009) described how Accenture, a management consulting company, used m-learning to increase compliance training in its worldwide workforce. In a similar manner to Audronis (2015) and Oesch (2017), Boehle (2009) also provide ‘tips’ for m-learning implementation. These tips include: 1) building a strong business case; 2) keeping m-learning content concise; 3) carefully designing m-learning for touch screens; 4) piloting and troubleshooting m-learning before implementing at scale; and 5) designing m-learning for different technology platforms. Boehle (2009) reported that staff were more satisfied with using m-learning for compliance training compared to the computer-based versions of the same compliance courses. However, Boehle (2009, p. 9) acknowledges that the

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3 Source: Mobile Learning approaches for US Army training. This report explored potential approaches of incorporating smartphone technologies in US Army training (Tucker, 2010).
reasons for the difference in staff satisfaction is unknown because “mobile delivery is such a new frontier”.

Whilst short-form high-level descriptive case studies provide some insight into m-learning, they are problematic because it is difficult to either gain in-depth understanding of how m-learning was developed or understand the factors influencing m-learning outcomes. Furthermore, practitioner literature tends to be based on anecdotal rather than empirical evidence, is descriptive rather than analytical and does not theorise. In the article by Oesch (2017) m-learning will make a big impact on frontline workers in 2018 based on very little analysis or empirical evidence. Both the BMC Software and Accenture case studies presented by Boehle (2009) and Audronis (2015) respectively, did not offer much empirical evidence or analysis in support of their advice or ‘tips’. Whilst industry practitioners are generally not overly interested in theory and therefore tend not to theorise; they also tend not to ask the broader question of how brief industry-based case studies can be further understood in-depth to inform broader implications and potential generalisation for future m-learning development and adoption.

Some m-learning literature of a practitioner nature has connections to consultancies that provide m-learning services or technology vendors that sell m-learning related technologies. The authors of the article ‘Going Mobile and Micro’ (Stober & Putter 2013), both work for C-Cubed, a technology vendor that provides technology, training and recruitment services. Straz (2015) published a m-learning article on the Entrepreneur website which aims to persuade organisations to adopt m-learning. Straz is the founder and CEO of Namely, a vendor that provides technology solutions. Roth (2015) published another m-learning article to convince organisations to adopt m-learning. This article was published on their own company website (Topyx) which provides learning management systems and m-learning solutions. Practitioner literature such as this may present doubtful impartiality and can be perceived to be marketing material for commercial organisations with an interest in m-learning.

2.6 Existing studies of m-learning implementation

To gain a deeper understanding of what m-learning initiatives have been developed and adopted, a review of the literature focusing on m-learning initiatives was conducted. This review has found few empirical studies explore the development and adoption of m-learning initiatives in-depth. Of those studies that explored m-learning development and adoption, none were based in Australia, few were situated in industry contexts targeting employees as the m-learning audience, and m-learning initiatives tended to be implemented using project teams (Table 2.4).
Table 2.4: M-learning initiatives

<table>
<thead>
<tr>
<th>Geographic region</th>
<th>Industry context</th>
<th>M-learning audience</th>
<th>How m-learning initiatives were implemented</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>Higher Education</td>
<td>Students studying at diploma level</td>
<td>Project team</td>
<td>Parsazadeh et al. (2018)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Higher Education and Health</td>
<td>Undergraduate medical students</td>
<td>Fuller &amp; Joynes (2015)</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Wood products manufacturing</td>
<td>Supervisors and skilled technical employees</td>
<td>Macdonald &amp; Chiu (2011)</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Health</td>
<td>Health professionals</td>
<td>Wiredu &amp; Sørensen (2006)</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>Museum</td>
<td>Museum visitors</td>
<td>Ting (2005)</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>Citizens in Europe</td>
<td>Homeless youth adults</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>Mobile technology industry</td>
<td>Taiwanese and those working in the mobile technology industry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>Higher Education</td>
<td>Academics</td>
<td>Insufficient detail in the literature to determine how m-learning was developed and implemented</td>
<td>Keskin &amp; Kuzu (2015)</td>
</tr>
<tr>
<td>USA</td>
<td>Mining service provider</td>
<td>Employees</td>
<td>Stober &amp; Putter (2013)</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Higher Education</td>
<td>Employees</td>
<td>Saccol et al. (2011)</td>
<td></td>
</tr>
</tbody>
</table>

M-learning has been implemented in various industries and predominantly in the higher education domain focused on students. Studies by Parsazadeh et al. (2018) and Fuller and Joynes (2015) focus on students studying at diploma and undergraduate level respectively. Parsazadeh et al. (2018) explored the implementation of a novel m-learning system to improve online information evaluation skills of students. They found the m-learning system implemented was significantly more effective in improving online information relating to evaluation skills of students compared to traditional methods of learning. With a similar focus on the student audience, Fuller and Joynes (2015) studied the compulsory participation of medical students from the University of Leeds in the United Kingdom. They found that students using m-learning resulted in benefits to the students’ learning experience and scholarship opportunities. However, the predominant focus on the students and m-learning technology in
both Fuller and Joyne’s (2015) and Parsazadeh et al. (2018) studies provide little insight into how the m-learning initiative was developed and whether implementation had a bearing on the perceived success of the initiative.

The majority of literature in Table 2.4 report that m-learning initiatives were developed and implemented using a project approach (Ting 2005; Wiredu & Sørensen 2006; Macdonald & Chiu; 2011; Fuller & Joynes 2015; Parsazadeh et al. 2018). According to the Project Management Institute, a project is “temporary in that it has a defined beginning and end in time, and therefore defined scope and resources and a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal” (PMBOK 2018, n.p.). Even though these studies refer to m-learning initiatives as projects, these studies did not have a primary focus on how the m-learning initiative was developed and implemented or how the implementation influenced the perceived success of m-learning. These studies focused on end outcomes of m-learning mostly, in terms of learner adoption, but did not provide details of the development or implementation journey, or the social processes and interactions between m-learning practitioners and stakeholders.

Some authors did not provide sufficient detail in their literature to determine how the m-learning initiative was developed and implemented (Saccol et al. 2011; Stober & Putter 2013; Keskin & Kuzu 2015). These authors focused on the outcomes of the m-learning initiative, such as m-learning acceptance and adoption. For example, Keskin and Kuzu (2015) found that m-learning was perceived as providing positive contributions to the professional development of academics. Stober and Putter (2013) found that the m-learning initiative to deliver safety training in a mining service provider was received positively by employees. Saccol et al. (2011) conducted exploratory research implementing m-learning in a Higher Education context and found a high acceptance level of m-learning amongst staff. The study by Yu-Liang Ting (2005) briefly explored several academic and non-academic m-learning projects including two based in Europe (MoBI Learn aimed at museum visitors and Learning Citizen Cluster focused on the unemployed and homeless youth adults) and one based in Taiwan (focused on Taiwanese citizens and those working in the mobile technology industry). Whilst these studies provide some insight into the challenges and positive outcomes of implementing m-learning initiatives, they only provide a partial understanding of the m-learning initiative. This is because the authors of these studies largely ignored how the development and implementation of m-learning initiatives may have influenced the perception of m-learning outcomes such as m-learning acceptance and adoption.

Furthermore, m-learning initiatives tend to be small-scale implementation. For example, in the study by Macdonald and Chiu (2011), they focused on 10 learners and explored their response to a m-learning project in terms of its mobile content design and delivery. They compared m-learning users and non-m-learning users undergoing quality assurance study for a new management training certificate program in the wood products manufacturing industry in Canada. They reported on the technology that influenced mobile content design and delivery, and the usability, general usage patterns and attitudes toward m-learning. They found that learners provided a positive response to m-learning, but the actual degree of use of mobile elements varied depending on each learner’s typical pattern of mobile phone use as well as their daily routines. They also found that the ideal candidate for m-learning is an individual who
is familiar with advanced features of smart-phones such as text messaging, email and, web browsing and who has reasons to access learning materials while “on the move”. Similarly small in scale, the study conducted by Wiredu and Sørensen’s (2006) was based on 12 learners. They found that organisational structure, control, accountability and workplace stress impact m-learning effectiveness. This study used activity theory to study learners in a mobile work-integrated learning context in a hospital. Small-scale implementation provided some insights into m-learning; however, the scalability of the initiative and the applicability of the findings from these studies to larger scale m-learning initiatives may be questionable. Furthermore, these studies also provide little detail on practices and interactions amongst those involved in the journey of m-learning development and implementation, and how this may have influenced m-learning outcomes for the learner or the organisation.

Even though there are a variety of industries represented in the implementation of m-learning initiatives, none were based in Australia. The majority of studies that explored m-learning development and implementation were in fact based in Europe. This suggests there may be an opportunity to add to the m-learning body of knowledge by focusing on m-learning initiatives, and their development and implementation in an industry context.

2.7 Exploring why m-learning implementation is important for industry

Academic and practitioner literature shows that both “for education and business, m-learning potentials and benefits abound” (Liu et al. 2010, p. 211). Furthermore, Ooi et al. (2018) emphasise that m-learning is an emerging and current trend that deserves attention. The surge in interest from seasoned m-learning researchers and practitioners is likely to be a combination of the huge increase in access to mobile technology, mounting evidence around the educational efficacy of mobile learning and, for industry, the potential for commercial gains (Traxler & Vosloo 2014).

Authors who discuss the benefits of m-learning tended to focus on drivers for m-learning growth and adoption by industry including: 1) proliferation of mobile technology adoption; 2) global mobility in the workforce; 3) millennials demanding training and development; 4) growth of mobile on-the-go workforce; and 5) growing interest in performance support and organisational training. Some of these drivers are discussed by academic literature based on empirical evidence while others are discussed in practitioner literature based on anecdotes and industry publications. These key drivers for m-learning growth and adoption are discussed below.

2.7.1 Proliferation in mobile technology adoption

The recent proliferation in mobile technology adoption by consumers and businesses is significant with mobile devices, such as phones and tablets, forecasted to grow by over 31% from 11 billion to more than 16 billion by 2020 worldwide (RadicatiGroup 2016). Furthermore, the importance of mobile devices to corporate businesses is highlighted by the RadicatiGroup (2016) in their forecast that by 2020 there will be 2.34 mobile devices per business user (i.e. an increase of 28% from 2016). Given the increasingly pervasive and ubiquitous (Traxler 2011b) nature of mobile technology, it has now reached a point where it is becoming more affordable to learners to possess and use these tools in both formal and informal settings (Looi et al. 2010).
The continued proliferation of mobile technology adoption was also highlighted by Traxler (2016) as a trend that will continue in the coming decade with mobile technology becoming more popular, personal, robust, cheap and social (p. 6). Some authors assert that the versatility and rapid acceptance of mobile devices only serves to underscore the fact that people are aware of the multitude of benefits of mobile technology and are interested in using it in their daily lives (Alrasheedi & Capretz 2015). Furthermore, Sharples et al. (2009) emphasises the widespread adoption of mobile technologies leading to a greater role of m-learning, supporting a lifetime of learning.

We are in an age of personal and technical mobility, where mobile devices, including phones, MP3 players and PDAs, are carried everywhere. We have the opportunity to design learning differently: linking people in real and virtual worlds, creating learning communities between people on the move, providing expertise on demand and supporting a lifetime of learning. (Sharples et al. 2009, p.234)

2.7.2 Global mobility in the workforce

There is a growing need to deploy talent around the world and as a consequence, international assignment levels and overall mobility is expected to increase significantly by 2020, according to a survey conducted by PricewaterhouseCoopers (2010). M-learning plays an important role in supporting the growing global mobility of workers by providing training to workers to deal with the vast amount of information and changes they may experience as part of their international assignments, as they often will not have time pre-departure and during work hours to focus on their training (Casuto 2016).

2.7.3 Millennials demanding training and development

Corporate businesses are increasingly focusing on the future workforce made up of mostly ‘millennials’, also known as Generation Y, defined as those who entered the workplace after the year 2000 (PricewaterhouseCoopers 2010). M-learning could be important to millennials because they are expected to make up the significant majority of all international assignments by 2020, and those surveyed by PricewaterhouseCoopers (2010) cited training and development as their top choice among employer-provided benefits.

2.7.4 Growth of mobile on-the-go workforce

Fortune 1000 companies around the world are changing because of the growing numbers in the mobile or on-the-go workforce. According to Global Workplace Analytics, employees are not at their desk 50-60% of the time (Lister 2017). M-learning can support the mobile workforce and the newer generation that drives a growing demand in flex-time, remote work, greater flexibility in where they work and finding a work–life balance (Casuto 2016).

2.7.5 Contributing to performance support and organisational training

M-learning has been attributed to being complementary, and a contributor to employee performance support and improved employee performance (Kahle-Piasecki et al. 2012). There is also literature that focuses on m-learning contributing to improved organisational training, knowledge sharing and communication leading to improved organisational performance. For
example, Genzic et al. (2014) assert that well-constructed m-learning employed appropriately can yield improvements in staff learning and performance, and can positively affect and significantly improve a corporation’s competitive advantage. A stark divergence can be found in contrasting the focus on m-learning contributing to performance support and organisational training (Table 2.4) against that of m-learning academic literature (Table 2.1). Also, unlike academic literature that takes a technocentric focus and studies the technology aspects of m-learning in great detail (Table 2.2). Authors that focus on m-learning contributing to performance support and organisational training tend to reference technology in terms of the functionality of mobile devices, and how technology supports the learner with portability and accessibility to training content (Table 2.5).

Table 2.5: Contrasting m-learning contributing to performance support with m-learning academic literature

<table>
<thead>
<tr>
<th>Focus of m-learning academic literature (Table 2.1)</th>
<th>Focus of literature on m-learning contributing to employee and organisational performance support</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student adoption</td>
<td>1. In-built functionality of mobile devices</td>
<td>Macdonald &amp; Chiu (2011); Woodill (2013)</td>
</tr>
<tr>
<td></td>
<td>4. Learner-centric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Improve employee and organisational performance</td>
<td>Stas (2015); Casuto (2016)</td>
</tr>
</tbody>
</table>

Authors that focus on m-learning that contributes to organisational and employee performance support, tend to focus on the in-built functionality of mobile devices. For example, such functionality for enhanced communication and knowledge sharing was emphasised by Woodill (2013) and Macdonald and Chiu (2011). They also highlight that mobile devices are wearable and have useful in-built functionality such as camera, geolocation, microphone and audio recording, notifications, touch screens and voice/phone communications.

On the other hand, Stober and Putter (2013) highlight the portability benefits of m-learning, providing the learner with training content at their ‘fingertips’. Similarly, Brink (2011) also highlights the convenience of access to information and describes m-learning as an easy way to get current, up-to-date information to employees. Furthermore, the benefits of speed and convenience with access to information and training material, improved retention (recall or
refresh the memory) and overcoming learner resistance (using m-learning instead of having long classroom sessions) was emphasised by Genzic et al. (2014). Another perspective of overcoming learner resistance was provided by Traxler (2012b) and Wallace (2011) who assert that m-learning can raise motivation for learning amongst disenfranchised and disengaged learners. Other authors adopt a learner-centric perspective, assessing perceptions of what learners consider to be the key factor necessary for the successful adoption of m-learning (Alrasheedi & Capretz 2015). In conducting a systematic literature review, Alrasheedi and Capretz (2015) found that good content, user-friendly m-learning design and having the flexibility to use m-learning as required are important for m-learning adoption by learners.

Some authors claim that m-learning could be a major contributor to improvements in individual employee performance and organisational performance (Brink 2011; Quinn 2011; Kahle-Piasecki et al. 2012; Traxler 2012b). Casuto (2016) asserts that m-learning and workforce performance support constitute a “perfect marriage”. In other words, m-learning is complementary and contributes to performance by providing employees with the support they need when they need it (Casuto 2016). Furthermore, according to a Mobile Learning Survey conducted by the Brandon Hall Group in 2013, organisations that are high performers, defined as companies that increased revenue and improved a majority of their key performance indicators over the previous year, are doing more with m-learning than organisations in general (Freifeld 2013). M-learning has also been described as a means for corporate businesses to improve workplace productivity (Brink 2011) and communication and morale (Straz 2015). For example, improved organisational performance can be achieved by greater efficiencies through improved connectivity between a mobile workforce and its headquarters, since workers can be deployed and supported at a distance (Traxler 2010b). M-learning can also improve the productivity and efficiency of mobile workers by delivering information and support just-in-time and in context for their immediate priorities (Traxler 2007).

Organisations are increasingly recognising that the skills, knowledge and workforce motivation is increasingly important (Aguinis & Kraiger 2009). Organisations are also investing more time and money in improving the way they train their workforce. According to trainingindustry.com, in 2016, organisations spent more than USD$359 billion on employee training and development. ‘Training’ can be defined as any systematic efforts to impart knowledge, skills, attitudes, or other characteristics with the end goal being improved performance (Coultas et al.

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4 TrainingIndustry.com uses data from the U.S. Bureau of Economic Analysis along with data collected from our segment analyses derived from annual Top Training Company studies. The data related to expenses includes spending by companies for training activities, including insourced and outsourced expenditure. The data does not include expenditure related to consumer spending for training programs; revenue from educational institutions or community colleges from students paying tuition. It does include dollars paid by corporations to educational institutions for corporate training initiatives. Source: [https://www.trainingindustry.com/wiki/size-of-training-industry-cpd/](https://www.trainingindustry.com/wiki/size-of-training-industry-cpd/) accessed 20 February 2018
This encompasses what employees need to know, do and feel in order to successfully perform their jobs (Grossman & Salas 2011). Aguinis and Kraiger (2009) assert that training in work organisations produces clear benefits for individuals and teams, organisations and society. Organisations are also increasingly recognising the benefits of m-learning to enhance organisational training, with more organisations adopting personal mobile devices for learning on the job (Sharples et al. 2009).

Other authors highlight that m-learning can provide organisations with wide ranging benefits such as improved staff learning and performance, decreased training costs, and better multimedia content delivery and creation options. Mehdipour and Zerehkafi (2013) highlight that a key benefit of m-learning is using relatively inexpensive and lightweight devices that can be accessed anywhere anytime and describe m-learning as a training modality that is cheaper to develop and deliver compared to traditional face-to-face training. Organisations can also use m-learning to reduce the need for face-to-face training and therefore reduce employee travel costs, which results in shorter workplace absence (Macdonald & Evans 2008).

In summary, m-learning provides a range of benefits for both individuals and organisations. M-learning is therefore becoming increasingly important in the support and improvement of individual and organisational performance.
Chapter 3 – Literature Review Part B: Theoretical perspectives

This chapter is the second and final part of the literature review. It discusses theoretical perspectives relevant to m-learning in an industry context, with a focus on practice and Wenger’s (1998) Community of Practice (CoP). Firstly, dominant positivist and rationalist perspectives are explored and contrasted with practice and Wenger’s theory. Secondly, criticisms of practice and theory in the literature are discussed, including how this research addresses them. Thirdly, gaps in current m-learning literature are identified, and how this research addresses such gaps and also adds to the m-learning and CoP body of knowledge, are discussed. Finally, as a conclusion to the literature review, the research focus, scope and research questions are presented.

3.1 Positivist and rationalist perspectives

The existing literature and approach to m-learning research reflects a dominant positivist paradigm with a tendency to adopt a scientific and rationalist approach (Table 3.1). Positivist studies are premised on the existence of a priori fixed relationships within phenomena which are typically investigated with structured instrumentation, such as theories and models that primarily test theory, in an attempt to increase predictive understanding of phenomena (Orlikowski & Baroudi 1991). From an ontological perspective, m-learning authors have tended to adopt a scientific and rationalist approach that uses inferential statistics, hypothesis testing, mathematical analysis, and/or experimental and quasi experimental designs (Lee 1991).

Table 3.1: Theoretical frameworks used in conceptualising m-learning
Some m-learning authors tend to adopt technology-centric models such as Task Technology Fit (TTF), Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT). For example, TTF models were used by Gebauer et al. (2010) in a study that models the fit between managerial tasks, mobile IT, and mobile use, assuming that a good fit positively impacts task performance. Adopting a similar model to TTF, Iqbal and Qureshi (2012) used TAM in their survey of students from 10 universities in Pakistan, to identify students’ perceptions about m-learning adoption. This study found that perceived usefulness, ease of use, and facilitating conditions significantly affect the students’ intention to adopt m-learning, whereas perceived playfulness is found to have less influence. Social influence was found to have a negative impact on m-learning adoption. Some authors claim that the Unified Theory of Acceptance and Use of Technology (UTAUT) is a popular model, successfully used in many Information Systems and Technology research, and incorporates aspects of other technology-centric models such as TAM (Williams et al. 2015). The UTAUT model was adopted by Ho and Chou (2009) in their study that explored the acceptance of critical factors for applying podcasting in language learning using random samples.

<table>
<thead>
<tr>
<th>Theoretical Frameworks</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positivist theoretical perspective</strong></td>
<td></td>
</tr>
<tr>
<td>Technocentric models</td>
<td></td>
</tr>
<tr>
<td>• Task Technology Fit (TTF)</td>
<td>Gebauer et al. (2010)</td>
</tr>
<tr>
<td>• Technology Acceptance Model (TAM)</td>
<td>Iqbal &amp; Qureshi (2012)</td>
</tr>
<tr>
<td>• Unified Theory of Acceptance and Use of Technology (UTAUT)</td>
<td>Ho &amp; Chou (2009)</td>
</tr>
<tr>
<td>Activity theory and statistical models</td>
<td></td>
</tr>
<tr>
<td>• Activity theory</td>
<td>Wiredu &amp; Sørensen (2006)</td>
</tr>
<tr>
<td>• Bayesian factor models</td>
<td>Najafabadi et al. (2014)</td>
</tr>
<tr>
<td>Motivational and learning theory and models</td>
<td></td>
</tr>
<tr>
<td>• Self-Determination Theory (SDT) and ARCS model</td>
<td>Su &amp; Cheng (2015)</td>
</tr>
<tr>
<td>• Self-Regulated Learning (SRL)</td>
<td>Huang (2015)</td>
</tr>
<tr>
<td>• Authentic Situated Learning Theory</td>
<td>Suryaningrum et al. (2014)</td>
</tr>
<tr>
<td><strong>Rationalist theoretical perspective</strong></td>
<td></td>
</tr>
<tr>
<td>TPACK or TPCK, Content Knowledge (CK); Pedagogical Knowledge (PK); Technological Content Knowledge (TCK); Technological Pedagogical Knowledge (TPK); SAMR model</td>
<td>Cavanaugh et al. (2013); Handal et al. (2013)</td>
</tr>
<tr>
<td>No specific theory used</td>
<td>Maniar et al. (2008)</td>
</tr>
</tbody>
</table>
Other authors have adopted activity theory or statistical models, such as Bayesian models, to explore the challenges of m-learning. Activity theory has been applied to m-learning by Wiredu and Sorensen (2006). They used Activity theory in their one-year action study of work-integrated learning within a British National Health Service (NHS) project. This study found that contradicting goals of the project management team and everyday activities of the surgical teams hosting the trainees critically shaped the unsuccessful use of mobile technology. Bayesian models were adopted by Najafabadi et al. (2014) in their study and they provided a Bayesian conceptual framework for mobile training systems in rural areas.

Motivational and learning theories and approaches, for example, Self-Determination Theory (SDT), Self-Regulated Learning (SRL) Theory and Authentic Situated Learning Theory were adopted by authors such as Su and Cheng (2015), Huang (2015) and Suryaningrum et al. (2014). SDT and the ARCS (Attention, Relevance, Confidence, Satisfaction)\textsuperscript{5} model were adopted to study a mobile gamification learning system with fourth-grade Taiwanese students (Su & Cheng 2015). This study found that gamification motivated and benefitted students. With a similar focus on students, Authentic Situated Learning Theory was adopted by Suryaningrum et al. (2014) in a study comparing face-to-face teaching and m-learning of Indonesian accounting students in a university context. The study concludes that, based on pre- and post-test scores, m-learning is more effective than face-to-face learning for accounting information systems. Unlike the student focus adopted by Su and Cheng (2015) and Suryaningrum et al. (2014), Huang (2015) focused on employees and adopted SRL Theory in a study based on 261 employees. The study’s findings differed from those that focused on students, as discussed earlier, and found that the perceived playfulness, flexibility advantages and SRL could have a positive impact on m-learning satisfaction.

On the other hand, rationalist approaches were adopted by Maniar et al. (2008); Cavanaugh et al. (2013); Handal et al. (2013); Suryaningrum et al. (2014). Some authors adopt a strong rationalist paradigm without adopting any specific theories. For example, in a study conducted by Maniar et al. (2008), they explore the effect of mobile phone screen size on video-based learning amongst students, but they do not reference any specific theories. This study found that regardless of screen size, students tended to have a positive overall opinion of m-learning and watching videos significantly increased their knowledge of the subject area. Cavanaugh et al. (2013) and Handal et al. (2013) also reference a number of models or theories such as TPACK (or TPCK), Content Knowledge (CK), Pedagogical Knowledge (PK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK) and SAMR. For instance, in the

\textsuperscript{5} One of the most widely mentioned theories is the ARCS motivation model (Su and Cheng, 2015). ARCS is based on a systematic design model to encourage the learning motivation of students on the basis that if the learners’ attention or interests were not aroused, then traditional instructional design, with its materials developed from instructional design, could not enhance learning effects (Keller, J. M. 1983, ‘Motivational design of instruction’, in C. M. R. (Ed.) (ed.) Instructional-design theories and models: An overview of their current status, Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 386–434., 1983).
study conducted by Cavanaugh et al. (2013), they examined the first six months of a national college-level iPad implementation project, involving 14,000 new students in the United Arab Emirates. The study recommends TPACK as a guide in planning mobile education projects and in shaping faculty development projects. Also, based on academic context, the study conducted by Handal et al. (2013) explored the integration of technology, pedagogy, and content in the teaching of secondary mathematics among 280 secondary mathematics teachers in New South Wales, Australia. The study asserts a link between novel learning technologies and teacher effectiveness.

There appears to be a lack of diversity in paradigms adopted in m-learning studies. The dominant positivist and rationalist paradigms used in the m-learning studies above reflect rationalist assumptions, that is, when specific factors (such as the level of task-to-technology fit, or perceived usefulness, ease of technology use, learners’ motivation) analysed in the theoretical models are addressed, m-learning implementation is improved. However, from a theoretical perspective, some authors have found positivist paradigms that reduce m-learning to subjects and objects is problematic (Pachler et al. 2010). Positivist and rationalist approaches tend to be overly simplistic in conceptualising complex phenomenon, such as m-learning implementation, in an industry context requiring consideration of social, relational and organisational factors. The subjective meanings that people ascribe to m-learning, including how m-learning practitioners conceptualise their role, their practices, and how their roles and practices are influenced by stakeholders and the work environment could be overlooked by taking a positivist approach. A practice perspective offers a remedy for several problems left unsolved by traditions such as positivist and rationalist approaches, especially the tendency to describe the world in terms of irreducible dualisms between actor/system, social/material, body/mind, and theory/action according to Nicolini (2012), drawing on the work of Ortner (1984), Reckwitz (2002) and Schatzki (2002).

3.2 A practice perspective

A practice perspective is a valid alternative to dominant positivist and rationalist perspectives to study and gain a deeper understanding of the social aspects of m-learning development and implementation. This section begins with defining ‘practice’ followed by why practice theory is suitable for the study of m-learning, especially Wenger’s (1998) Communities of Practice (CoP) theory. This section will also explore the criticisms of practice theory and Wenger’s CoP theory.

3.2.1 Definition of ‘practice’

The term ‘practice’ has a myriad of interpretations and definitions and there is no one universally accepted definition. In common usage, practice simply refers to what people do or what they say. Even though “practice is a familiar term in everyday language ... it also has a long history of scholarship” (Simpson 2009, p.1329) and researchers have adopted different perspectives on ‘practice’, which are explored below.

A humanist perspective has been adopted by some authors and they view practice as what people do, such as an array of human activities (Schatzki 2001). In contrast, Bourdieu (1977) highlights the social nature of practice and describes practices as self-organising and self-reproducing activities that are the basis of social order and inform our practical understanding.
of the world (habitus). In a similar vein, with a focus on social structures and systems, Giddens (1984, p. 2) describes practices as regularised acts enabled by social structure, which can reproduce social systems and “are not brought into being by social actors but continually recreated by them via the very means whereby they express themselves as actors”. ‘Practice’ is also described in the context of ‘social systems’ by Schulz (2005, p. 494) and he emphasises that practice is “complex, unpredictable and collective”. The description of ‘practice’ provided by Cook and Brown (1999) is simple in structure and emphasises the importance of the social ‘group’ as informing meaning that translates to action.

Practice is action informed by meaning drawn from a particular group (Brown 1999, p. 387)

Similar to Bourdieu (1977), Cook and Brown (1999) and Schulz (2005), emphasis on the social nature of practice and ‘groups’ or ‘communities’ was also adopted by Wenger (1998). An ontological perspective is adopted by Wenger (1999) who argues that focusing on ‘what people do’ does not provide adequate attention to practice as something that is shared between people. Wenger (1998, p. 47) describes practice as “not just doing in and of itself... it is doing in a historical and social context that gives structure and meaning to what we do... in this sense, practice is always social practice”.

Similar to Wenger (1998), Gherardi (2009) perceives practice as a way of knowing and distinguishes between ‘praxis’ (people’s actions) and a generative source of knowledge. Practice stems from shared understandings or “patterns in how conduct is enacted, performed or produced” (Gherardi 2009, p. 115).

Both Wenger (1998) and Gherardi (2009) perceive practice from an epistemological (theory of knowledge regarding its methods, validity, and scope, and the distinction between justified belief and opinion) perspective. Also adopting an epistemological perspective, some authors view practice as a generator of social order (Schatzki 2001; Reckwitz 2002). These authors describe ‘practice’ as a routinised type of behaviour consisting of several interconnected elements and emphasise that collective or shared knowledge is important to social order (Reckwitz 2002). These elements include forms of physical and mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. Similarly, Schatzki (2001) highlights that shared understandings, agreements, negotiations associated with what people do and say are attributed to shared practical understanding and social order.

Even though some authors place a different emphasis on ontological and epistemological perspectives, Orlikowski (2007) argues that both perspectives are required to understand twenty-first century organisational realities. Orlikowski (2007) describes the relationship between people and the objects (non-human) they use as critical to understanding practice. Furthermore, she emphasises that the characteristics and capabilities of technologies are relational and enacted in practice, reflecting socio-materiality theory. A similar perspective is offered by Blomquist et al. (2010). They highlight that practice-based research provides a deeper and insightful understanding of how people use their tools, how they react and respond to various changes in circumstances, and how they jointly create a mutual or divergent understanding of the task at hand.
Furthermore, Nicolini (2012, p. 1) emphasises the benefits of using practice theories as offering a “radically new way of understanding and explaining social and organisational phenomena”. Also, focusing on the study of ‘practice’ in an organisational context, some authors adopt a pragmatic or organisational strategy perspective. For example, Simpson (2009, p. 1330) presents a pragmatic perspective on practice in the field of organisation studies and describes practice as the “conduct of transactional life, which involves the temporally-unfolding, symbolically-mediated interweaving of experience and action”. Authors that adopt an organisational strategy emphasise strategy research and describe practice as “shared routines of behaviour, including traditions, norms and procedures for thinking, acting and using things” (Whittington 2006, p. 619). Here the reference to ‘things’ applies in the broadest sense and includes technology. Similarly, Jarzabkowski et al. (2007, p. 9) also adopts a strategy-as-practice perspective and describes practice as providing “the behavioural, cognitive, procedural, discursive and physical resources through which multiple actors are able to interact in order to socially accomplish collective activity”.

Considering the different perspectives on practice, this study adopts Wenger’s (1998) perspective on practice because consideration has been given from both an ontological and epistemological perspective. Furthermore, Wenger’s (1998) perspective has also been used in research studies in an organisational context with a social focus.

3.2.2 Criticisms of Practice theory addressed in this research

Even though the adoption of a practice perspective has been beneficial to organisations and Information Systems research, some researchers argue that there are areas in practice research that could be improved. There are three main criticisms or recommendations for improvement to practice research in the literature (Table 3.2).

<table>
<thead>
<tr>
<th>Recommended improvements to practice research</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evolving practices</td>
<td>Elkjaer &amp; Simpson (2006); Nicolini (2012)</td>
</tr>
<tr>
<td>Risk of becoming a-theoretical and over simplification of what people do</td>
<td>Schatzki (2001)</td>
</tr>
<tr>
<td>Practice research is context dependent</td>
<td>Reckwitz (2002)</td>
</tr>
</tbody>
</table>

In the design of the research scope and approach to this study, the criticisms and recommendations for the improvement of practice research have been considered and discussed below.

Firstly, a key recommendation for improvements to practice research is a need for greater engagement with those that enact ‘practices’ and more understanding of how ‘practices’ evolve (Nicolini 2012). The importance of understanding changing practices is also supported by Elkjaer and Simpson (2006) who highlight that it is important to understand practice as not only stable
and stabilising but also as changing and emerging. They also highlight the importance that practice needs not to be understood as an either-or dualism, but rather as a both-and duality, as two sides of the same coin. Wenger et al. (2002a) also emphasise that CoPs evolve because they are organic and dynamic in nature.

This research acknowledges the recommendation by Nicolini (2012) and Elkjaer and Simpson (2006) regarding the changing nature of CoPs. Adopting Wenger’s perspective allows this research to recognise that practices and CoPs are organic and dynamic in nature and therefore evolve over time. Furthermore, this research adopts an empirical approach to understand the practices of practitioners to in turn understand the meanings that manifest in social interactions between practitioners and stakeholders. The gathering of empirical evidence and analysis over time allows the understanding of changing practices to be explored in this research, therefore taking into consideration the evolving nature of practices.

Secondly, practice research risks becoming a-theoretical and over simplified in relation to what people do. Schatzki (2001) cautions that while researchers describe what people do and the activities they engage in; researchers could risk becoming a-theoretical and simply catalogue the list of things that people do, and this will not reveal the meaning of the work practitioners engage in and the relationships between them.

Adopting Wenger’s (1998) CoP perspective to inform empirical work and examine complex social processes associated with m-learning initiatives rather than conceptualising m-learning in a technology or task-based manner, allows this research to address this risk. By examining the three factors critical to the social cohesion amongst individuals within a CoP –mutual engagement, joint enterprise and shared repertoire (Wenger 1998, p.73) – this research will gain a deeper understanding of m-learning practitioners beyond a simplified view of what people do. Also, by examining the social processes amongst practitioners and stakeholders, this research will reveal the meaning of the work practitioners engage in and the relationships between them and stakeholders. This approach addresses the risk of this research becoming a-theoretical or over simplified to what people do – a risk raised by Schatzki (2001).

Lastly, because practice research is context dependent Reckwitz (2002) this highlights that context dependent practice research may not be able to be generalised unlike full blown ground theories. To address this criticism, this research aims to provide a theoretical understanding of m-learning development and implementation roles, and practices of practitioners and stakeholders. This may provide useful insights for practitioners. This research will use an instrumental multiple case study approach, as findings drawn from multiple case studies allow for the possibility of direct replication (Yin 2009) and for the research findings to be more generalisable.

3.3 Communities of Practice (CoP) theory

Like the term ‘practice’, different researchers define and conceptualise CoP theory differently (Wenger 1998; Reckwitz 2002; Cox 2005; Nicolini 2012). The diverse definitions and interpretations of these terms are viewed positively by authors such as Cox (2005) and Nicolini (2012). They highlight that the ambiguities of the terms ‘communities’ and ‘practice’ are beneficial and “a source of the concepts’ reusability allowing it to be reappropriated for
difference purposes, academic and practical” (Cox 2005, p.527). The benefits of a diverse conceptualisation of these terms was also highlighted by Nicolini (2012), who emphasises that practice theory must be used with an understanding of both similarities and differences among practice theories.

While the wide application of the terms practice and communities is positive, variability in conceptualisations of community and practice could cause instability (Reckwitz 2002) or confusion (Cox 2005). For example, different authors may conceptualise community and practices differently and this may impact the applicability of their findings, depending on how they conceptualise and define community and practices. To minimise confusion, this research aims to clearly explain how CoP theory is defined and applied in this research.

3.3.1 Wenger’s (1998) CoP theory

Wenger’s (1998) CoP is based on situated learning theory and argues that through shared learning and experiences, social configurations cohere and evolve into CoPs. Wenger et al. (2002a, p.4) define CoPs as “the groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis”. Wenger’s theory includes three factors as critical to the social cohesion amongst individuals within a CoP: mutual engagement, joint enterprise and shared repertoire (Wenger 1998, p.73), as shown in Figure 2.1.

![Figure 3.1: Dimensions of practice based on Wenger (1998, p.73)](image)

Wenger et al. (2002a) highlight that CoPs are dynamic in nature, evolve and change over time and can take many forms depending on the context—CoPs “are as diverse as the situations that bring them into existence and the people who populate them” (p.24). Therefore, Wenger promotes the importance of understanding CoPs and their evolution over time. Furthermore, studying CoPs, its participants and the dimensions of mutual engagement, and joint enterprise and shared repertoire, provides a rich understanding of the complexity of social behaviours, motivations and practices that go way beyond a simple view of ‘what people do’ and requires the consideration of the context in which they are influenced.

Mutual engagement of participants is the first characteristic of practice and is the source of community coherence (Wenger 1998, p.73). Membership in a CoP is a matter of mutual engagement which defines the community. The negotiation of a joint enterprise is the second characteristic of practice as a source of community coherence (Wenger 1998, p.77). A CoP is
held together because it 1) is the result of a collective process of negotiation that reflects the full complexity of mutual engagement; 2) is defined by the participants in the process of pursuing it and is their negotiated response to their situation and these belongs to them; and 3) is not just a stated goal, but creates among participants relations of mutual accountability that become an integral part of the practice (Wenger 1998, pp.77-78). The development of a shared repertoire is the third characteristic of practice as a source of community coherence. The repertoire of a CoP includes routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practices (Wenger 1998, pp.82-83).

In the study of CoPs and associated practices, Wenger (1998, p. 47) emphasises that “the concept of practice connotes doing, but not just doing in and of itself ... [because practice] includes both the explicit and the tacit ... what is said and what is left unsaid; what is represented and what is assumed”. Explicit practices can be easily observed and can include language, tools, documents, images, symbols, well-defined roles, specified criteria, codified procedures, regulations and contracts (Wenger 1998). Tacit practices however include implicit relations, unspoken conventions, subtle clues, untold rules of thumb, recognisable intuitions, specified perceptions, well-tuned sensitivities, embodied understanding, underlying assumptions, and shared worldviews (Wenger 1998). The importance of understanding tacit knowledge, highlighted by Lynch (2001) who describes practice (i.e. what people do) as represented by methods they employ, are always partial since practice also includes tacit knowledge (i.e. personal know-how).

CoPs have been described as a unique organisation or virtual community sponsored by an organisation to facilitate knowledge sharing or learning with the following characteristics: to develop member capabilities and to build and exchange knowledge; members self-elect to join CoPs; passion, commitment and identification with the group’s expertise holds them together; and the group lasts as long as there is an interest in maintaining the group (Wenger & Snyder 2000). The size of CoPs can differ: some are small and intimate, involving only a few specialists, while others consist of hundreds of people (Wenger et al. 2002a). Therefore, it is not size or number of participants that define CoPs.

The distinction between a CoP and other teams or groups (such as project team, formal work group and informal network) is important for this study. As discussed previously, the literature review conducted as part of this research has found that authors tend to describe m-learning initiatives as being developed and implemented as ‘initiatives’ or ‘projects’. Other authors provide limited discussion regarding the social configuration of the people implementing m-learning initiatives. To help distinguish between CoPs, formal work groups, project teams, and informal networks, Wenger and Snyder (2000, p.142) offer a summary of their different characteristics (Table 3.3). They also describe CoPs, formal work groups, project teams and informal networks as useful and complementary to companies. This study will utilise these characteristics to distinguish between CoPs and other teams or groups (Table 3.3).

**Table 3.3: Characteristics of CoPs, formal work groups, project teams and informal networks**

(Wenger and Snyder 2000, p.142)
<table>
<thead>
<tr>
<th></th>
<th>What’s the purpose?</th>
<th>Who belongs?</th>
<th>What holds it together?</th>
<th>How long does it last?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project teams</strong></td>
<td>To accomplish a specific task</td>
<td>Employees assigned by senior management</td>
<td>The project’s milestones and goals</td>
<td>Until the project has been completed</td>
</tr>
<tr>
<td><strong>CoPs</strong></td>
<td>To develop members’ capabilities; to build and exchange knowledge</td>
<td>Members who select themselves</td>
<td>Passion, commitment, and identification with the group’s expertise</td>
<td>As long as there is interest in maintaining the group</td>
</tr>
<tr>
<td><strong>Formal work groups</strong></td>
<td>To deliver a product or service</td>
<td>Everyone who reports to the group’s manager</td>
<td>Job requirements and common goals</td>
<td>Until the next reorganization</td>
</tr>
<tr>
<td><strong>Informal networks</strong></td>
<td>To collect and pass on business information</td>
<td>Friends and business acquaintances</td>
<td>Mutual needs</td>
<td>As long as people have a reason to connect</td>
</tr>
</tbody>
</table>

Furthermore, the study of initiatives or projects, such as the development and implementation of m-learning, using practice theory is well suited according to Ivory and Alderman (2005), Cicmil (2006) and Blomquist et al. (2010). A practice perspective has also been used by Lundin and Soderholm (1995) to distinguish between projects and permanent organisations and they argue that projects need to be conceptualised differently because they have features different from permanent organisations.

After consideration of different perspectives on ‘practice’, Wenger’s (1998) CoP theory is adopted for this research because it considers not just ‘what people do’ but also focuses on practice as shared between people and critical to the cohesion of social configuration. The social configuration referred to in this research comprises m-learning practitioners and stakeholders (including sponsors and learners) and examines their perspectives in terms of their objectives, assumptions and values, as they relate to m-learning. This research examines the extent to which mutual engagement, joint enterprise and shared repertoire are evident in the development and implementation of m-learning projects, with a specific focus on m-learning practitioners and stakeholders. Both explicit and tacit practices are explored and include what is said and what is left unsaid, what is represented and what is assumed.

This research draws on Wenger’s CoP theory (1998) as well as his later publications which make a distinct shift towards a managerialist stance. This shift is evident when Wenger (2000) references large companies such as Shell, World Bank, American Management System (AMS) and Hewlett-Packard and small companies such as Hill’s Pet Nutrition that have cultivated CoPs that have substantially contributed to the company’s revenue and/or cost reduction.

The shift in Wenger’s CoP theory towards a managerialist focus was also highlighted by Cox (2005) who conducted a comparative review of four seminal works by Lave (1991), Brown and Duguid (1991), Wenger (1998) and Wenger et al. (2002a). There is much common ground between these seminal works and Cox (2005) recommends positioning the use of the concepts clearly in relation to these versions.
This study predominantly draws from, while not being limited to, Wenger’s seminal work (1998). This is because, even though Wenger shifts towards a managerialist stance in his later work, the ontological premise of his CoP theory and the three characteristics of practice as sources of community coherence (mutual engagement, joint enterprise and shared repertoire) have remained constant. Therefore, this study also adopts the definition and characteristics of CoPs and project teams from Wenger and Snyder (2000) to explore the implications of social practices, behaviours and configurations and their relevance to m-learning initiatives. Furthermore, Wenger and Snyder’s (2000) managerialist perspective is relevant to this research because the study is situated in an organisational context including practitioners, sponsors and learners. Even though Wenger et al. (2002a) explore predominantly corporate businesses that are American or global in nature and not specific to m-learning, their CoP experience may still be relevant to the Australian corporate business context. This research is focused on m-learning development and implementation in an industry context and the influence of where the industry is located, is not its primary focus.

Unlike rationalist and technocentric foci and dominant positivist and rationalist approaches other authors have adopted, this research adopts an interpretivist theoretical lens and examines the motivations driving what people do. Hence, unlike the previous m-learning research described in the previous chapter, this research focuses on non-technological factors such as people’s practices, behaviours, attitudes and interactions and how people conceptualise m-learning. Adopting a practice perspective allows this research to focus on the behaviours, attitudes, language of practitioners and stakeholders and to what extent they influence/ are being influenced in terms of their perceptions of m-learning.

Wenger’s CoP theory is well suited to exploring the perspectives of practitioners, sponsors and learners and their objectives, assumptions and values, as they relate to m-learning development and implementation. This is because m-learning development and implementation in a business environment is complex and involves interactions with many different people in the organisation (Wiredu & Sørensen 2006; Stober & Putter 2013).

3.3.2 Criticisms of Wenger’s CoP theory and how these are addressed

While CoP theory is an appropriate lens to inform this empirical study, it is important to acknowledge and consider the critiques of CoP theory in order to understand the limitations of this research and generalisability of the research findings. With an understanding of these limitations, this research explores these areas, where practical, and highlights where the CoP theory lens is limiting and warrants future research.

A common criticism of CoP theory is that it does not adequately pay attention to the issues of power and politics (Fox 2000; Willmott 2000; Marshall & Rollinson 2004; Contu & Roberts 2006; Khan et al. 2015). It is important to highlight that Wenger’s (1998) theory is mainly based on a social theory of learning and not a political theory. Wenger’s CoP theory does not focus on power relations between stakeholder or groups specifically. He acknowledges that issues of power are inherent in social life (p. 191), but also highlights CoPs can include disagreements and conflict, as they are not often harmonious (p. 84) or homogeneous (p. 75). However, Wenger views power in terms of an element of social life and argues that a social concept of identity entails a social concept of power and, conversely, that a discussion of power must
include considerations of community, negotiation of meaning and identity (p.190). Wenger views power as a dual structure that reflects the interplay between identification and negotiability of belonging as well as exercising control over what we belong to (p.207). Therefore, the issue of power will be discussed in this research in relation to community and the role practitioners identify with or choose to belong to. Specific power relations between m-learning practitioners and stakeholders not related to the community are outside the scope of this research.

CoP theory has also been criticised by authors that highlight socio-cultural context and the individual learner, both inadequately addressed by CoP theory (Handley et al. 2006). Fox (2000) takes this argument further and suggests that CoP theory is inadequate to understand corporate culture and should be used in conjunction with actor-network theory to enrich each other and together make a stronger contribution to the understanding of organisational learning. However, Wenger’s CoP lens has been widely adopted in research and can be used to understand organisational culture to a degree, because “over time, communities develop their own culture, and they can transform an organisation’s culture through their collective influence on members and on the teams and other units with whom they interact” (Wenger 2002a, p.194).

This study does not adopt other theories such as actor-network theory as Wenger’s (1998) CoP theory is rich in its own right and highly relevant to this research. Unlike the organisational knowledge management and learning focus that Fox (2000) suggests, actor-network theory is not relevant to this research, because it is not focused on organisational knowledge management and learning but rather on the practitioners and m-learning implementation. Also, actor-network theory is predominantly a positivist constructivist approach. As discussed earlier, this research takes a social practice approach focused on practitioners and their perspective of m-learning with an emphasis on m-learning implementation.

On the other hand, Josserand (2004) argues that Wenger’s CoP theory (1998) and other CoP scholars tend to classify CoPs in the knowledge management domain, limiting their view of broader possibilities and application of CoPs. Josserand (2004) asserts that classifying CoPs in the knowledge management domain consequently leads CoP scholars to overlook the interactions between CoPs and the bureaucratic organisations they are embedded in. This research addresses this criticism by adopting a CoP perspective as well as considering relevant contextual and bureaucratic organisational factors that may influence m-learning initiatives and their implementation, with a focus on practitioners and stakeholders.

Other authors criticise CoP theory as not addressing individual predispositions and habitus (Bourdieu 1977; Gherardi et al. 1998; Mutch 2003; Handley et al. 2006). Habitus can be understood as a generative structure that conditions practice and as something that can emerge from practice (Mutch 2003). This research will explore these areas through investigating how practitioners and stakeholders conceptualise m-learning, reflecting their predispositions, habits and practices and how they cohere as a CoP through mutual engagement, joint enterprise and shared repertoire.

CoP theory has also been criticised by authors who highlight that socio-cultural context and the individual learner are inadequately addressed by CoP theory (Handley et al. 2006). Firstly, with regards to socio-cultural context, cases and examples to illustrate CoP theory are mostly based
on Western developed countries and large corporate businesses (Wenger 1998; Wenger & Snyder 2000; Wenger et al. 2002b; Wenger et al. 2002a). However, Wenger references many different cases to illustrate CoP concepts across different industries to demonstrate their generalisability. Given the industry rather than location based focus of this research, the cases here are all similar in terms of socio-cultural context and geographic location. They are also similar in the socio-cultural context, in terms of large corporate businesses based on developed countries, such as those used by Wenger. Secondly, the focus of this study is on practitioners and stakeholders, including learners. The individual learners’ perspective is explored from the perspective of how they conceptualise and engage in m-learning, and how they relate to practitioners and m-learning implementation. Therefore, the study of individual learners beyond these parameters is outside the scope of this study.

The relevance of CoPs in fast paced corporate businesses has been questioned by authors such as Roberts (2006). Wenger’s CoP theory offers a generic lens that may be applied in different corporate business contexts including slow or fast paced contexts. The application may vary (e.g. in fast paced corporate businesses as described by Roberts 2006) but that does not invalidate CoP concepts.

In summary, the strength and relevance of Wenger’s (1998) CoP theory for this research far outweigh the criticisms due to its strong focus on ontology that supports the understanding of social relations in corporate business contexts through exploring the dimensions of joint enterprise, mutual engagement and shared repertoire. Also, this research adopts Wenger’s CoP perspective because it is highly relevant and has been successfully used in other research with a similar corporate business context (Iverson & McPhee 2002; Mutch 2003; Garrety et al. 2004; Vaast 2004). In particular, CoP theory has been used as a theoretical lens in the analysis of projects in a corporate business context. Several examples were highlighted by Blomquist et al. (2010) including: the management of deviations in an engineering project (Hällgren & Maaninen-Olsson 2005; Hällgren & Wilson 2007); the day-to-day work of a project manager in a software development project (Nilsson & Söderholm 2005); the use of tools in project management (Besner & Hobbs 2006); the roles in temporary organisations (Bechky 2006); the work of project managers and how they talk and understand what they do (Blackburn 2002); projects as a tool for re-bureaucratization (Hodgson 2004); and the ‘actual work’ of the project managers for creative projects (Simon 2006).

3.4 Limitations of m-learning literature to date

There is evidence that indicates the m-learning research field is growing and changing (Krull et al. 2017). The literature reveals that despite the benefits and growing importance of m-learning, corporate businesses appear to be slow in capitalising on m-learning (Freifeld 2013). This may be because organisations face challenges in the development and implementation of m-learning initiatives not well addressed by academic or practitioner literature.

Whilst academic literature has provided insights into the application of m-learning in an educational context with a focus on student adoption, pedagogy, research methodologies and technology adoption, few authors have shown an interest in the industry development and application of m-learning. Furthermore, academic literature tends not to address underlying
social processes that give rise to industry challenges of support, commitment and user adoption of m-learning.

As discussed above, practitioner literature provides some insights about industry development and application of m-learning. However, in summary, practitioner literature tends to be problematic because: 1) they rely on anecdotal rather than empirical evidence; 2) provide descriptive rather than analytical case studies; 3) provide high level and brief descriptions rather than in-depth and comprehensive studies; 4) do not theorise or adopt any theoretical frameworks; 5) take a rationalist approach suggesting ‘best practice’ or one-best way processes and technologies; and 6) may offer potentially biased viewpoints because of their association with consultancies or technology vendors rather than having an impartial position.

Existing rationalist focused and technocentric approaches adopted by researchers may have served a technically oriented audience well; however, they have resulted in a lack of research and skills in relation to social processes associated with m-learning. Also, while academic literature has built knowledge about m-learning pedagogy, technology usage and adoption in an educational context, such as in schools or universities, researchers have largely ignored the social relationships between m-learning practitioners and stakeholders during m-learning implementation in an industry context. M-learning research in an industry context has also been highlighted as a fertile area for further research to capitalise on the benefits and growing importance of m-learning to corporate businesses and individual learners (Naismith et al. 2004; Kim & Kizildag 2011; Pachler et al. 2011; Woodill 2011; Ally et al. 2014; Keskin & Kuzu 2015).

Some authors suggest that m-learning research has been too focused on the technical aspects of m-learning with not enough emphasis placed on understanding socio-cultural contexts, conflicting perspectives of the people involved and the organisational environment (Pimmer et al. 2010). This view is supported by Garrison (2015) who highlights enhanced opportunities for engagement in a technologically connected society, and the role the social environment plays in stimulating and shaping thinking and learning.

Limited research into the social processes associated with m-learning development implementation may indicate that m-learning researchers are in the main not addressing the topics of interest and concerns of m-learning practitioners. This could indicate that m-learning researchers fail to appreciate the implementation concerns that challenge practitioners, and therefore do not fully understand the implementation of m-learning or the role of the practitioners in m-learning implementation. Authors, such as Hirsschheim and Newman (1991, p. 29), challenge the commonly held assumption that information systems or technology development can be conceived using a rationalist approach – “it is our view that even the basic assumptions about the rationality of the actors and the social processes they engage in need to be critically appraised”.

Relatively recent research suggests that social context is important to understand m-learning in a workplace context. For example, Pimmer and Pachler (2014, p. 199) assert that the “value of m-learning in work settings can be perfectly explained by socio-cognitive, situated and socio-cultural perspectives” and argue that social context is an important and appropriate perspective from which to understand m-learning in a workplace setting.
While offering support for some of the technical challenges; m-learning research to date offers few insights into how social dimensions of m-learning are managed, especially those associated with building necessary engagement with key stakeholders during the development of m-learning initiatives. The roles and practices of m-learning practitioners, as they engage stakeholders in collaboration to understand their requirements and build commitment and interest, have largely been overlooked by researchers. The meanings practitioners and stakeholders ascribe to m-learning, and how these meanings influence relations between them, plus outcomes of m-learning initiatives, have also largely been ignored by researchers.

In summary, limited empirical research focused on social, relational and organisational aspects of m-learning development and implementation in industry is a gap in m-learning literature to date. This limitation in m-learning literature may hinder employees and organisations in realising the benefits of m-learning. This provides motivation and informs the approach for this study.

### 3.5 Research focus and scope

Building on Wenger’s (1998) CoP theory; this research adopts a CoP theoretical lens to examine three cases based on m-learning initiatives focusing on both the practitioners and their m-learning stakeholders. This research also focuses on how m-learning is developed and implemented and whether Wenger’s (1998, 2000, 2002) recommendations are relevant to m-learning initiatives. And because this study is focused on the development and implementation of m-learning initiatives, m-learning ‘practitioners’ are defined in this study as those people that design, develop or implement m-learning initiatives.

Based on the literature review and the author’s experience, as a management consultant for over 20 years, this research will focus on m-learning practitioners and key stakeholders in the development and implementation of m-learning initiatives in an industry context. Stakeholders are defined as “any individual or group of individuals that are directly or indirectly impacted by an entity or a task” (Sutterfield et al. 2006, p. 27). Although there are various stakeholder theory perspectives (e.g. social science stakeholder theory, instrumental stakeholder theory, and convergent stakeholder theory), one common denominator is that stakeholders perceive they have a stake in the entity or task. As a result of their perceptions, they have certain expectations, and consequently engage in certain types of behaviour – sometimes constructive and sometimes destructive (Bourne & Walker 2006).

During the development and implementation of m-learning initiatives, practitioners will engage with sponsors and learners, as key stakeholders, that have an interest and are directly impacted by m-learning (Sutterfield et al. 2006). Researchers such as Sutterfield et al. (2006) and Bourne and Walker (2006) have found that stakeholder management is an important element influencing project success. Therefore, stakeholders such as sponsors and learners are included in the scope of this study. Furthermore, learners have been included as key stakeholders, considering the findings by Liu et al. (2010), that learners are critical to m-learning and “technology alone does not bring about m-learning … the key success factor is to understand the concerns of learners”. The importance of learners in realising the benefits of m-learning is also emphasised by other authors such as Sharles et al. (2007), Pachler et al. (2011), Mehdipour and Zerehakafi (2013) and Ally and Prieto-Blazquez (2014). In addition to focusing
on m-learning practitioners, this study will also examine sponsors and learners in terms of how they conceptualise m-learning and from the perspective of the practices of m-learning practitioners, and how connections are promoted or inhibited by these stakeholders.

In summary, some of the limitations of m-learning research and literature to date are addressed in this study by examining m-learning initiatives using CoP theory. They will focus on: 1) practitioners that develop and implement m-learning; 2) sponsors who are accountable for m-learning initiative outcomes; and 3) learners who are the users of m-learning.

Literature regarding m-learning implementation shows that initiatives or projects tend to be used as the means to drive m-learning implementation. To access relevant examples of m-learning development and implementation, this research will examine m-learning projects used to implement m-learning initiatives in corporate businesses.

### 3.6 Research questions

Based on the literature review and theoretical perspective adopted in this research, the following three research questions have been derived.

Research questions:

1. **What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation?**
2. **How do m-learning stakeholders, such as learners and sponsors, conceptualise m-learning?**
3. **How does a Community of Practice perspective provide insights into organisational m-learning initiatives?**
Chapter 4 – Research methodology and design

This chapter details the research methodology and design for this study. A clear and well thought through research design is important. The design is the “logical blueprint” which connects the empirical data to the study’s initial research questions and ultimately, to its conclusions (Yin 2010). In this chapter the research design presents various components including philosophical assumptions, research method, data collection techniques and the approach to qualitative data analysis and writing up the results (Myers 2009). This chapter concludes by describing how this study ensures quality and trustworthiness throughout the research process and in its findings.

The design elements highlighted by Yin (2011) and Myers (2009) have been incorporated in the research framework developed for this study. This framework is summarised in Figure 4.1. (Chapter numbers in parentheses refer to the chapters in this thesis.)

Figure 4.1: Research framework developed for this study

Adopting the approach recommended by Ramalho et al. (2015), the researcher’s epistemological framework is explicitly explored and acknowledged in the early stages of the research, and as part of the research methodology and design. Firstly, this chapter details the research paradigms considered, including their philosophical assumptions, and why an interpretivist paradigm has been adopted. Secondly, the case study methodology is detailed. The research design will also be described including the definition of case study, multiple case study design, and how the cases were selected, data collected and analysed. This chapter concludes by detailing the strategy developed for writing up the results, including how this study attempts to ensure that the interpretive research conducted is of high quality.
4.1 Research paradigms and their philosophical assumptions

A paradigm is a shared worldview that represents the beliefs and values in a discipline of thought and also guides problem solving (Schwandt 2001). In other words the term “research paradigm”, according to Guba & Lincoln (1994), is defined: “for its holder, the nature of the ‘world’ and the individual’s place in it” (p.107). More specifically “research paradigm” refers to underlying philosophical assumptions about the nature of reality, what constitutes valid research and which research methods are appropriate (Iivari et al. 1998). Other authors such as Patton (2002) describe a paradigm as a way of describing a worldview informed by philosophical assumptions about the nature of social reality (ontology), ways of knowing (epistemology), and ethics and value systems (axiology).

Ontology refers to what we believe about the nature of reality and attempt to answer, “what is the form and nature of reality and, therefore, what is there that can be known about it?” (Guba & Lincoln 1994, p.108). In other words, ontology also refers to whether we believe there is one verifiable reality or whether multiple, socially constructed realities exist (Patton 2002). Epistemology refers to beliefs about what it means to know (Crotty 1998), the relationship between the researcher and what can be known (Guba & Lincoln 1994) and attempts to inquire into the nature of knowledge and truth and answer the question, “how do we know what we know”? (Patton 2002) Therefore, a paradigm leads us to ask certain questions and use appropriate approaches to systematic inquiry, also known as methodology, attempting to answer the question, “how should we study the world?” (Patton 2002).

There are varied viewpoints amongst scholars in the discussion of research paradigms. The term “paradigm” has been a controversial concept and paradigms and paradigmatic frameworks abound (Iivari et al. 1998). Table 4.1 provides a summary of the different classification schemas that different authors propose. The purpose of this table is not to provide an exhaustive list of different classification schemas associated with research paradigm discussion. Rather, this table details the diversity of classification schemas proposed and supports the rationale for choosing to adopt the classification schema used by Orlikowski and Baroudi (1991) to be discussed in this chapter.
Table 4.1: Research paradigm classification schemas

<table>
<thead>
<tr>
<th>Author</th>
<th>Research paradigm classification schemas proposed</th>
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</thead>
<tbody>
<tr>
<td>Burrell &amp; Morgan (1979)</td>
<td>Functionalism (objective-order), social relativism (subjective-order), radical structuralism (objective-conflict), and neo humanism (subjective-conflict)</td>
</tr>
<tr>
<td>Chua (1986)</td>
<td>Positivist, interpretive, critical</td>
</tr>
<tr>
<td>Orlikowski &amp; Baroudi (1991)</td>
<td>Positivist, interpretive, critical</td>
</tr>
<tr>
<td>Lee (1991)</td>
<td>Positivist, interpretive</td>
</tr>
<tr>
<td>Guba &amp; Lincoln (1994)</td>
<td>Positivist, post-positivist, constructivist, critical</td>
</tr>
<tr>
<td>Iivari et al. (1998)</td>
<td>Instead of research paradigms, five approaches to information system development are proposed: interactionist, speech act-based, soft systems methodology, trade unionist, professional work practice</td>
</tr>
<tr>
<td>Myers &amp; Avison (2002)</td>
<td>Positivist, interpretive, action</td>
</tr>
<tr>
<td>Hassard &amp; Wolfram Cox (2013)</td>
<td>Developed from Burrell and Morgan’s (1979) model considering structural, anti-structural and post-structural paradigms</td>
</tr>
</tbody>
</table>

Early literature on research paradigms by Burrell and Morgan (1979) have been widely used (Hassard & Wolfram Cox 2013). However, the Burrell and Morgan (1979) model has also been criticised. Considering organisational and societal contexts, Chua (1986) argues that interpretive and critical research paradigms are important alternatives to Burrell and Morgan’s (1979). Interpretive and critical research paradigms are not constrained by Burrell and Morgan’s (1979), which cannot be evaluated (Chua 1986). In other words, Burrell and Morgan’s (1979) assumptions were presented as strict dichotomies that were mutually exclusive and failed to locate philosophical attempts to overcome such unsatisfactory dichotomies (Chua 1986).

The three research paradigms used by Orlikowski and Baroudi (1991): positivist, interpretive, and critical are also widely embraced within the Information Systems (IS) literature including from credible scholars in the IS domain (Klein & Myers 1999; Stahl & Brooke 2008; Myers 2009; Myers & Klein 2011). Heeding Orlikowski and Baroudi’s (1991) advice, the examination of positivist, interpretive and critical research paradigms allows the consideration of appropriate paradigms that are compatible with and appropriate for the research interest and predisposition of this study, while remaining aware and open to the possibility of other assumptions and interests.

4.1.1 Positivist research paradigm

Positivist research studies are premised on the existence of *a priori* fixed relationships within phenomena which are typically investigated with structured instrumentation, and the world
can be explained by empirically testable theories that can be verified and falsified (Orlikowski & Baroudi 1991). In other words, from an ontological perspective, positivist researchers treat the phenomenon of their study from an objectivist position, and assume the world exists independently from consciousness and experience, made up of hard objective phenomena (Crotty 1998). According to Burrell and Morgan (1979), positivist researchers study the social world as value-free and see the social world as composed of relatively concrete empirical facts and relationships, which can be identified and measured using approaches adopted from the natural sciences. With a similar perspective, Iivari et al. (1998) describe positive researchers as viewing the social world in a deterministic manner regarding humans and their behaviour, as determined by the environment.

The important contribution of positivist research to Information Systems research has been acknowledged by various authors (Orlikowski & Baroudi 1991; Lee & Hubona 2009; Venkatesh et al. 2013). As highlighted in the Literature Review in Chapters 2 and 3, existing literature and approaches to m-learning research to date reflects a dominant positivist paradigm with a tendency to adopt a scientific and rationalist approach. Positivist researchers tend to rely on experimental or formal scientific or mathematical techniques to test and verify hypotheses. For example, m-learning researchers and authors that have used a positivist or rationalist approach (task or acceptance, and technology models and activity theory) include Wiredu and Sorensen (2006), Ho and Chou (2009), Gebauer et al. (2010), Iqbal and Qureshi (2012), Cavanaugh et al. (2013), Handal et al. (2013), Omidi Najafabadi et al. (2014), and Williams et al. (2015).

Even though positivist researchers have successfully used the positivist paradigm to study and explain the natural world, it may not be adequate for understanding and studying subjective aspects of social phenomena (Blumer 1969). The claim by positivist researchers for objectivity and universal laws, verification and falsification of hypotheses and value neutrality have been challenged by authors such as Morgan and Smircich (1980), Orlikowski and Baroudi (1991), and Klein and Myers (1999). In social research, the “data are not just sitting there waiting” to be gathered but rather “facts are produced as part and parcel of the social interaction of the researchers with the participants” (Klein & Myers 1999, p.74). Therefore, the researcher cannot be separated from what they are studying and therefore claims of objectivity in positivist research studies do not hold. Morgan and Smircich (1980) also argue that human beings are unable to achieve any form of knowledge independent of their own subjective construction, since they are agents through which knowledge is perceived or experienced.

After considering advantages and disadvantages of positivism, the researcher has determined that the positivist paradigm is not appropriate for this study, because the focus of this research is on the challenges of m-learning implementation, by viewing it as a social practice involving m-learning practitioners and stakeholders. A positivist approach to m-learning could ignore or downplay the contextual conditions of m-learning development and implementation including the organisational setting, politics and culture (Orlikowski & Baroudi 1991). The subjective meanings that people ascribe to m-learning, including how m-learning practitioners conceptualise their role and practices and how these are influenced by stakeholders and the work environment, could be overlooked if a positivist approach was adopted.
4.1.2 Critical research paradigm

Critical research aims to critique the status quo, through the exposure of deep-seated, structural contradictions within social systems and thereby transform these alienating and restrictive social conditions (Orlikowski & Baroudi 1991). In other words, critical research has the notions of justice and injustice – “enacted processes, made real through actions performed again and again” (Charmaz 2005, p.508). Critical research in information systems is concerned with social issues such as freedom, power, social control and values with respect to the development, use and impact of information technology (Myers & Klein 2011). Some of the most defining features of critical research are that social reality is historically constituted (Chua 1986) and a belief in the ability of people to change their material and social circumstances; and yet the capacity to change is constrained by economic, political and cultural authority (Orlikowski & Baroudi 1991).

Therefore, critical research philosophy differs from positivist and interpretive research philosophies, “both of which are content to predict [positivist] or explain [interpretive] the status quo” (Orlikowski & Baroudi 1991, p.19). Whilst positivist researchers rarely differentiate between the natural and social sciences, critical research emphasises key differences. Positivist researchers tend to argue that a researcher can stand outside of the subject of the research, ‘looking in’. On the other hand, critical researchers argue that people can only be studied from the ‘inside’ (Myers & Klein 2011).

Authors such as Myers and Klein (2011) highlight critical research is very similar to interpretive research from an ontological perspective, in that the social world is created through interactions between people. However, three key differences between critical and interpretive research are highlighted by different authors. Firstly, as highlighted above, critical researchers challenge the status quo and believe in the ability of people to change their circumstances. However, the capacity to change is limited by resources that are the conditions of domination and oppression in the social world. Critical researchers are interested in the power structures, vested interests and limited resources that are the conditions of domination and oppression in the social world (Orlikowski & Baroudi 1991). Secondly, critical researchers see their moral position to expose and change oppression and domination and to provide a voice to marginalised or disadvantaged groups (Chua 1986; Orlikowski & Baroudi 1991). Furthermore, Flick & Charmaz (2017) emphasise that critical enquiry should be linked to emancipation and transformation before and during the research process. Finally, critical research emphasises that organisations cannot be studied in isolation from the industry, society, and nation within which they operate, and which they in part constitute. Therefore there is a need to focus on the influence of historical, economic, social, and political conditions regarding the nature and development of phenomena (Orlikowski & Baroudi 1991). Critical research has also been highlighted by Chua (1986) as different from positivist and interpretive research, because it sees truth as very much in the process of being hammered out, and is grounded in both social and historical practices. Therefore, long-term historical studies are especially important, given the prior belief that an object/event can only be grasped or identified through an analysis of its history.
These key divergences between critical and interpretive research are the reasons why the critical research paradigm is deemed not appropriate for this research. The focus of this research is primarily to explore and gain understanding and insights into the role and practice of m-learning practitioners and their social relations with stakeholders. This research will not apply a social critique in the analysis looking for evidence of power structures, domination and oppression. Nor will the focus of this research be on transforming m-learning implementation practices through emancipation or the exposure of marginal or disadvantaged groups. Furthermore, unlike the preference of critical studies to take a broad (economic, social and political influences) and long-term historical view, this is not possible or practical for this study because of the contemporary nature of m-learning implementation.

4.1.3 Interpretivist research paradigm

Interpretive research has emerged as a valid and important approach to Information Systems (IS) research (Klein & Myers 1999). Interpretive research studies attempt to understand phenomena through in-depth study of the meanings that people assign to them, and interpretive methods of research are “aimed at producing an understanding of the context of the problem, and the process whereby the problem influences and is influenced by the context” (Walsham 1995). In their description of interpretive research studies, Klein and Myers (1999) provide examples of how interpretive researchers gain knowledge of reality through social constructions such as language, consciousness, shared meanings, documents, tools, and other artefacts. Unlike positivist studies, interpretive research does not predefine variables, but focuses on the complexity of human sense making and thus attempts to understand phenomena through meanings people ascribe to them (Orlikowski & Baroudi 1991).

Researchers with an interpretivist research paradigm seek to understand human thought and action in social and organisational contexts; with the potential to produce deeper insights into IS phenomena including the management and development of information systems (Klein & Myers 1999). Furthermore, interpretive research accepts a relativist ontology which holds that reality is what one makes it and that “we need to recognize that different people may well inhabit different worlds and these worlds represent diverse ways of knowing, distinguishable sets of meaning and separate realities” (Crotty 1998, p.64). However, there are different perspectives on how people develop their own reality. Internal realism is one perspective, for example, where reality is viewed as an inter-subjective construction by means of shared human cognition (Walsham 1995). Idealism is another perspective that views people as constructing their own reality and this reality is confined to one’s mind (Crotty 1998).

The research findings and values of the researcher cannot be separated using an interpretivist research paradigm (Guba & Lincoln 1994; Walsham 1995). This study adopts constructivism and subjectivism as the two distinct epistemological approaches that can be used in the interpretive research paradigm, according to Crotty (1998). Both approaches advocate that meaning is not ‘out there’ to be discovered. Constructivism advocates that research findings are constructed through the researcher’s engagement with the world. However, subjectivism suggests meaning, as created by the researcher, and imposed on the object of their research.

After exploring the advantages and disadvantages of a positivist, critical and interpretivist research paradigm; this research adopts an interpretivist rather than positivist approach.
Orlikowski and Baroudi (1991) suggested that interpretivist studies are appropriate where the intent of the research was to increase understanding of the phenomenon within cultural and contextual situations; where the phenomenon of interest was examined in its natural setting and from the perspective of the participants; and where researchers did not impose their outsiders’ a priori understanding on the situation. Furthermore, according to Klein & Myers (1999), interpretive studies are well suited to the study of social phenomena in an organisational context, because an interpretive approach allows the researcher to view the world as constructed and phenomena are understood by the meanings people ascribe to them. Interpretivist research emphasises understanding from the view of the participants directly involved with the phenomenon under study, and this is appropriate for understanding thoughts and actions of actors in organisations (Klein & Myers 1999).

Furthermore, interpretive research is becoming increasingly useful as IS research shifts from technological to managerial and organisational issues (Myers 1997; Abdel-Fattah 2015; Willcocks et al. 2016). Conducting research on projects using an interpretive approach has been recommended by authors such as Ivory and Alderman (2005) and Cicmil (2006). They argue that interpretive studies are important to understanding projects and that project management theory needs to distance itself from prevalent rationalistic assumptions (Ivory & Alderman 2005). Similarly, Cicmil (2006, p. 36) asserted that projects should be explored using an interpretive approach, that might “generate alternative understandings of what goes on in project practice and how practitioners participate in and manage complex organizational arrangements”.

Therefore, an interpretivist approach is well suited for this study because its scope is to explore m-learning implementation in an industry context. By examining the roles, practices and social processes of m-learning practitioners, from their point of view and that of stakeholders in their company setting, it provides the appropriate natural setting in which to conduct interpretivist research. Applying the interpretivist approach to the study of m-learning implementation in such an industry context and in its natural setting is a novel concept. This approach may uncover areas of interest which have not captured the attention of researchers in the past. The literature review (see Chapters 2 and 3) has confirmed the worldview of m-learning implementation as a social process involving two broad but distinct social configurations – m-learning practitioners and stakeholders. This worldview has influenced the planning, operationalisation of this study and consequently its findings.

Following the advice of Orlikowski and Baroudi (1991), examination of the different research paradigms have added to the researcher’s understanding as to the extent to which the perspective adopted for this study will focus the researcher’s attention on some things and not others, and bias the researchers’ perception of the phenomena under study. Furthermore, it is important to acknowledge and be aware that the research paradigm, theoretical lens and researchers’ priori understanding will shape the research findings. Chughtai and Myers (2017) suggest that researchers need to be aware of their own historicity and prejudices as they engage in a dialogue with research participants. In other words, the plausibility of an ethnographic account is improved if we know how the ‘research instrument’ (i.e. the researcher) was ‘calibrated’ (Chughtai & Myers 2017). Furthermore, in addition to learning the social and cultural practices of the participants, field researchers also need to remain open to
new meanings and understandings. This study acknowledges that the research findings may be influenced by the researchers’ worldview, priori understanding and prejudices. To address this bias and remain open to new meanings and understandings, a grounded theory data analysis approach will be adopted for this research (see sections 4.4.6 to 4.4.9).

4.1.4 Mixed methods research

Authors such as Hirschheim and Klein (1989), Lee (1991) and Venkatesh et al. (2013) argue that research paradigms do not need to be mutually exclusive and mixing paradigmatic influences leads to interesting and creative results. Lee (1991) and Venkatesh et al. (2013) take the argument further and suggest that the two approaches to organisational research, positivist and interpretivist, can be mutually supportive, rather than mutually exclusive. However, Venkatesh et al. (2013) also caution that although a mixed methods approach is a valuable methodological choice, it is “not a panacea and does not always lead to the discovery, development, or extension of a substantive theory” (p.25).

Even though mixed methods may provide some advantages, it has not been adopted for this research because it is typically not a natural methodological choice in social and behavioural science (Venkatesh et al. 2013). And further, researchers have to overcome considerable paradigmatic, cultural, cognitive, and physical challenges to be able to conduct mixed methods research (Mingers 2011). The researcher also agrees with authors such as Orlikowski and Baroudi (1991) that from an ontological position, positivism and interpretivism are very different research paradigms and should not be combined.

4.2 Research method selection

Following the analysis and justification of utilising the interpretivist research paradigm, and the associated philosophical assumptions for this study, this section explores different qualitative research methods used in information systems research by considering their key characteristics, strengths and weaknesses. A research method is a strategy of enquiry which moves from the underlying philosophical assumptions to research design and data collection (Myers & Avison 2002). The selection and justification for adopting a research method will be based on analysing key characteristics, strengths and weaknesses of different research methods and their fit with the intent and focus of the study.

4.2.1 Experiments, surveys, archival analysis and history research methods

According to Yin (2009, p.8), there are several ways of doing social research including, but not limited to, five major research methods: experiments, surveys, archival analysis, history and case study research. Each method has peculiar advantages and disadvantages depending upon three conditions: 1) the type of research question; 2) the control an investigator (researcher) has over actual behavioural events; 3) and the focus on contemporary as opposed to historical phenomena (Yin 2009, p.2).

Table 4.2 summarises each condition, in distinguishing methods. This table has been adapted from Yin (2009, p.8) showing experiment, history and case study research. Survey and archival analysis methods have been excluded from Table 4.2 because they do fit the research questions of this study. Archival analysis does not focus on contemporary events and both survey and
archival analysis are more suitable to research questions that tend to task who, what, where, how many and how much? Furthermore, survey methods have a limited ability to investigate context (which is important to this study) because the survey designer, for instance, will constantly struggle to limit the number of variables analysed (and hence the number of questions that can be asked) to fall safely within the number of respondents who can be surveyed (Yin 2009, p.18).

Table 4.2: Relevant situations for different research methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Form of research question</th>
<th>Requires control of behavioural (events)?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How? Why?</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>History</td>
<td>How? Why?</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case study</td>
<td>How? Why?</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

All three research methods listed in Table 4.2 support research questions that tend to be open ended, are explanatory and ask how or why questions. Therefore, these three methods tend to deal with operational links needing to be traced over time, rather than mere frequencies or incidences (Yin 2009, p.9). However, the experiment research method is not appropriate for this study, because it requires control of certain events or behaviours, and an experiment deliberately divorces a phenomenon from its context, attending to only a few variables – typically the context is “controlled” by the laboratory environment (Yin 2009, p.18). Therefore, the experiment method does not support the objective of this research, which is to study the social processes of m-learning practitioners and stakeholders in their natural context, without the researcher attempting to influence or control the participants or events. In comparison, the history method deals with the intertwined situation between phenomenon and context, but usually with non-contemporary events. For this reason, the history method is not appropriate for this study, focusing on the contemporary topic of m-learning implementation.

According to Benbasat et al. (1987) three categories of qualitative research appear to be considered as case studies: case study research, application descriptions and action research (p.371). Each of these are analysed below.

4.2.2 Case study research method

In case study research, the clear objective is the conduct of research and research questions are specified prior to the study by researchers who are observers/investigators rather than participants (Benbasat et al. 1987). Even though there are several definitions, the definition provided by Yin (1994) has been accepted by credible researchers such as Myers and Avison (2002). The definition has remained constant even in their more recent publications, where Yin (2009, p.18) defines case study research method as: “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”.

Researchers using the case study method are able to study complex phenomenon within their specific context and will be able to derive a more in-depth and holistic understanding of the
phenomenon in a real-life setting than is possible with other methods such as experimental and survey methods.

Unlike case study research, in application descriptions the author does not conduct a study. Application descriptions are written by practitioners and detail the author’s experiences implementing a particular application. Application descriptions are not appropriate for this study because; the aim is not to conduct a study instead, the objective is to successfully implement a specific system, a “list of “dos” and “don’ts” for implementation of similar systems” (p.371) is provided and the outcomes of the published projects are almost always successful (Benbasat et al. 1987).

There are numerous definitions of action research; however, one of the most widely cited is that of Rapoport, who defines action research as “contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by join collaboration within a mutually acceptable ethical framework” (1970, p.499). This definition draws attention to the collaborative aspect of action research and to possible ethical dilemmas that arise from its use (Myers & Avison 2002). Other researchers refer to action research as “participant-observer” (Walsham 2006, p.321), emphasising the active and deliberate role and involvement of the researcher in the context of their investigation. The strength of the action research method is the in-depth and firsthand understanding the researcher obtains.

On the other hand, the action research method has several weaknesses. One of the weaknesses is the potential lack of objectivity stemming from the researcher’s stake in effecting a successful outcome for the client organisation (Benbasat et al. 1987). In other words, action research can be subject to perceptions of bias and the researcher may become socialised to views of people in the field and thereby loses a fresh outlook on the situation (Walsham 2006). Action research can also be very time consuming, with opportunity costs, and limited in that it usually involves a single organisation adding to the difficulty to generalise findings across other organisations. Further to the difficulty in generalisations to other situations, people less knowledgeable than the researcher may find it difficult to apply the intervention techniques resulting from action research (Benbasat et al. 1987). Due to these weaknesses, the action research method has not been adopted for this study.

4.2.3 Ethnographic research method

In addition to the five major research methods Yin (2009, p.8) described, ethnographic research is another method used by social researchers. Ethnographic research attempts to understand the meaning of a phenomenon of interest and the meanings that people at a particular site assign to that phenomenon (Cavaye 1996). Rather than interpreting the field from a theoretical viewpoint or from the researcher’s viewpoint, the data is interpreted through the eyes of the participant (Cavaye 1996). Ethnographic research is one of the most in-depth research methods possible and is well suited to providing researchers with rich insights into human, social, and organisational aspects of business organisations (Myers 2013). However, a disadvantage of adopting this approach is that often a long timeframe is required to produce rich data and findings, and the emphasis is on detailed and observational evidence (Yin 2009, p.15). Given the time constraints of this study, to be completed within a PhD candidature, it was not feasible to conduct this study over a long timeframe using the ethnographic research method.
Regardless of the research methodology adopted, many scholars emphasise the importance of being more explicit about the nature and beliefs the researcher brings to the subject of study. Much of the debate and criticism over paradigms and methodologies involve researchers who fail to communicate with each other because they hold varying basic assumptions about their research subject (Morgan & Smircich 1980). Furthermore, when the varying assumptions become explicit, less effort can be devoted to arguing about the relative superiority of this method over that, and a greater effort devoted to more basic issues and in particular a neglected feature of all social research – that it is based on implicit and largely untested ground assumptions (Morgan & Smircich 1980). Therefore, the next section details the justification for adopting the case study method and sections 4.4 and 4.5 detail how the case study method has been applied to this research.

4.3 Justification for using the case study method

The case study research method is appropriate here because it best meets the three conditions suggested by Yin (2009, p.8), demonstrated in Table 4.3. These conditions are: 1) whilst not looking to produce predictive theoretical propositions, but explanatory insights, the research questions in this study are predominantly “how” questions (in line with Yin’s suggestion that case studies are suitable for “how” and “why” questions); 2) the researcher has little or no control of participant behaviour or events; and 3) the research focuses on a contemporary topic of m-learning implementation.

<table>
<thead>
<tr>
<th>Method</th>
<th>Form of research question</th>
<th>Requires control of behavioural (events)?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case study</td>
<td>Research questions 2 and 3 of this study are “How” questions</td>
<td>Little or no control</td>
<td>Yes. This research study focuses on contemporary m-learning implementation</td>
</tr>
</tbody>
</table>

These three conditions are similar to the guidance provided by Benbasat et al. (1987) in judging the appropriateness of applying the case study research method. This method is clearly useful when a natural setting or focus on contemporary events is needed and the research phenomena is not supported by a strong theoretical base (Benbasat et al. 1987). Furthermore, the case study research method, using practice theory, has been successfully adopted by researchers such Bourne and Walker (2006) and Sutterfield et al. (2006).

As detailed in the literature review (see Chapters 2 and 3), m-learning and their implementation in companies is a relatively new, evolving and complex phenomenon. Due to these three salient characteristics of m-learning and their implementation in an industry context, the case study method is selected because it is well suited and an appropriate method of inquiry for this study. Further justification for adopting the case study method is provided against the three m-learning implementation characteristics below.

M-learning and their implementation are:
1. **A relatively new phenomenon.** The case study method strongly supports theory building as it provides independence from prior literature or past empirical observation and is particularly well suited to new research areas or those for which existing theory seems inadequate (Eisenhardt 1989). This view is in line with Benbasat et al. (1987) and Darke et al. (1998) who suggest that case research is particularly appropriate for certain types of problems such as those in which research and theory are at their early formative stages.

2. **An evolving phenomenon.** Having access to and reporting on real-life technology experiences, allow case researchers in academia and in practice to keep up with rapid changes occurring in the IT world as well as in organisations (Dube & Pare 2003). According to Benbasat et al. (1987), the case study approach is suitable to study a phenomenon in its natural or real-life setting, which allows the researcher to ask how and why questions to understand the nature and complexity of the processes taking place, and focuses on an area in which few previous studies have been undertaken. Case study methodology is also suitable where the boundaries between phenomenon and context are not clearly evident (Yin 2009). Also, in-depth case investigations open the way to new ideas and new lines of reasoning and pinpoint the opportunities, challenges, and issues facing IT specialists and managers (Dube & Pare 2003).

3. **A complex phenomenon.** Consisting of rapidly changing technology, changing social demographics, attitudes and behaviour towards technology, learning and work. A holistic investigation, characteristic of case research, is well suited to understanding complex and ubiquitous interactions among organisations, technologies and people (Benbasat et al. 1987). Furthermore, Benbasat et al. (1987), Eisenhardt (1989) and Yin (2009) argue that case study research is appropriate for investigating complex phenomena within their actual setting.

Adopting a case study approach will allow the creation of an intimate connection with empirical reality based on relevant and valid data (Glaser & Strauss 1967). Case study methods use multiple methods of data collection (archives, interviews, questionnaires, observations) and gather information from one or more actors (people, groups, organisations) to develop a holistic understanding of the phenomenon (Benbasat et al. 1987; Eisenhardt 1989).

Case studies have a strong tradition in IS (Carlson et al. 1977; Franz & Robey 1984) and are accepted as a valid research strategy within the IS research community (Klein & Myers 1999). Case study research is also the most common qualitative method used in IS research (Orlikowski & Baroudi 1991). Furthermore, case study research is particularly appropriate for the study of IS development, implementation and use within organisations (Benbasat et al. 1987; Darke et al. 1998). More specifically, Benbasat et al. (1987) argue that case study research is “well suited to capturing the knowledge of practitioners and developing theories from it” (p.370).

Even though the case study method is commonly used in information systems (IS) research and appropriate for this study, there can be several difficulties associated with undertaking case studies as a rigorous and effective method of research (Walsham 1995; Darke et al. 1998). Five key difficulties are discussed and addressed below.

Firstly, Walsham (1995) suggests that case study researchers must reflect on their own philosophical stance which should be stated explicitly when writing up their work. The
researcher should also provide “thick descriptions” in trying to understand what is happening in connection with a complex computer-based information system, involving managers, users and designers (Walsham 1995, p.75). Furthermore, consideration must be given to how theory is used in the study including: as an initial guide to design and data collection; as part of an iterative process of data collection and analysis; and as a final product of the research (Eisenhardt 1989).

Secondly, Darke et al. (1998) provides guidance in the designing, shaping and scoping case study research in order to adequately answer research questions and suggests that a comprehensive literature analysis needs to be undertaken in order to understand the existing body of research literature within the research area and to position the research question(s) within the context of that literature. Darke et al. (1998) suggests that it is important to ensure that the research questions are appropriate in terms of their interest, significance and value for both the research and practitioner IS communities. The research questions must also be questions that are actually able to be answered in a useful way (Darke et al. 1998). Heeding this advice, a comprehensive literature review was conducted to develop the research questions for this study (see Chapters 2 and 3). Furthermore, the research questions have been developed in a way that addresses the identified limitations in m-learning research to date and is focused on providing interesting and useful insights to both researchers and practitioners.

Thirdly, in the conduct of empirical research Walsham (1995) recommends that the role of the researcher in the data collection is made explicit – either the “outside observer” or the “involved researcher” (through participant observation or action research. Because data collection procedures in case study research are not routinised, greater demands are placed on the researcher during this phase than when research strategies such as laboratory experiments or surveys are employed (Yin 1994, p.55). There are also frequent overlap of data collection and data analysis activities because of the interaction between data being collected and the theoretical issues which are the focus of the study (Eisenhardt 1989; Yin 1994). Therefore, the researcher requires initiative, pragmatism, optimism and persistence in the face of difficulties and unexpected events, especially during data collection activities. Furthermore case study researchers need to apply the necessary rigour in the research design, data collection and analysis processes and in writing up their case study research findings (Darke et al. 1998). This is vital to establish credibility with the reader and Walsham (1995) emphasises that as a minimum, case study reporting should include the following.

Reporting on the collection of field data should include details of the research sites chosen, the reasons for this choice, the number of people, who were interviewed, what hierarchical or professional positions they occupied, what other data sources were used, and over what period the research was conducted. With respect to data analysis, reporting should include how the field interviews and other data were recorded, how they were analysed and how the iterative process between field data and theory took place and evolved over time. (Walsham 1995, pp. 78-79)

Finally, Darke et al. (1998) highlight that a weakness of case study research includes difficulties in generalising research results and the subjectivity of the data collection and analysis processes. Some authors argue that case studies are better suited to theory testing than theory
building because of the difficulty in generalising about findings from a particular case (Dul & Hak 2008). However, authors such as Yin (2009) suggest that the issue of generalisation can be resolved by multiple case studies, which is the approach taken in this research. Other authors argue that case studies can be used to generate theory (Harris & Sutton 1986; Gersick 1988). Eisenhardt (1989) also suggests that case study research is ideally suited to theory building since the emergent theory will be: empirical and closely tied to observable evidence; novel because of the need to constantly reframe the theoretical position in light of contradictory and paradoxical evidence; and can be tested, measured and proven false. Furthermore, Benbasat et al. (1987) quotes the work of Bonoma (1985) who suggests that case research could play a role in both hypothesis generating and hypothesis testing.

As identified in the literature review in Chapters 2 and 3, m-learning implementation theory is largely based on positivist, rationalist and technical approaches and in general, there are too few empirical and interpretivist studies. Therefore, this study focuses on theory-building rather than theory-testing, as it is essentially exploratory and seeks to produce new insights into m-learning implementation practice.

These issues are further considered, discussed and addressed in the research design detailed in the next section on research design. A constructionist position is adopted as part of this study because the findings will be influenced by the researcher’s engagement with the research participants, the comprehensive literature review conducted and the researcher’s priori experience. The data for this study will include interview transcripts, field observations and documentation to view subject matter from different viewpoints. Using a variety of data sources also allow for triangulation – the goal of seeking at least three ways of verifying or corroborating a particular event, description, or fact being reported by the study to strengthen the validity of the study and its findings (Yin 2010, p.81).

4.4 Research design – the case study method and components

According to Yin (2011) a research design is the “logical blueprint” of the research and serves as “logical” plans (p.75). The logic involves t links among the research questions, the data to be collected, and strategies for analysing the data – so that the study’s findings will address the intended research questions and helps to strengthen the validity of the study, including its accuracy (Yin 2011, p.76).

The components of the research design, or logical blueprint/plan, are detailed under the following headings:

1. Understanding ‘the case’ in this study
2. The unit of analysis
3. Multiple case study design
4. Case selection
5. Data collection methods
6. Data analysis strategy.
4.4.1 Understanding the ‘case’ in this study

The case is a “social unit usually located in a physical place, the people making up the unit being differentiated from others who are not part of it. In short, the unit has clear boundaries which make it easy to identify” (Payne 2004, p.31). Defining the ‘case’ is important from the perspective of epistemology, because it defines the boundaries of the phenomenon under study and represents the area in which the researcher can draw conclusions about the phenomenon (Myers 2009). The objective of this study is to explore the conceptualisation, role and practices of m-learning practitioners and to also understand the perspectives of stakeholders, in particular sponsor and learners, and their influence on practitioners in m-learning development and implementation. Using Payne’s (2004) definition, the ‘case’ in this study is the integrated social system associated with the development and implementation of m-learning initiatives, and includes the practitioners and stakeholders (specifically sponsors and learners), as illustrated in Figure 4.2.

![Organisational context](image)

**Figure 4.2: Defining the ‘case’**

4.4.2 Unit of analysis

The unit of analysis defines the case. Yin (2009) states, for example, that a case may be an individual, a decision, a program, implementation or organisational change. In this sense, a unit of analysis is a single holistic entity or phenomenon occurring in a bounded context (Punch 1998). The real-life phenomenon under examination in this research is the implementation of m-learning in the form of m-learning initiatives or projects. In each case study, the unit of analysis is the development and implementation of m-learning within the context of the organisation. By adopting a CoP perspective, a deliberate design decision made by the researcher was to conduct empirical work with groups of m-learning practitioners and stakeholders, specifically sponsors and learners, to understand from their different perspectives how m-learning initiatives or projects were conducted. The organisational and social context of the m-learning initiative development and implementation in a company or organisation is the primary interest of this research and findings will emerge from the particular cases being investigated.
4.4.3 Multiple case study design

There are two different types of case study research: intrinsic and instrumental, according to Stake (1995). Intrinsic case study is defined by the central importance of the case itself, rather than a secondary interest and there is little interest in learning about general phenomena. On the other hand, instrumental case study research has a secondary purpose – to gain an understanding of something else. According to Stake (1995) the researcher has a choice between categorical aggregation and direct interpretation for analysis, based on the nature of the case.

This research follows an instrumental case study approach. This decision is based on the premise that the purpose of this research is to develop new insights into the problematic nature of m-learning development and implementation in general, rather than understand the essence of m-learning implementation in specific individual organisations. The individual cases have a secondary and more significant function to provide new insight into the problems of m-learning development and implementation in a broad sense, which may be applicable across different organisations or companies. A multiple case study is an instrumental case study, in which more than one case is selected to allow for a multifaceted understanding of a phenomenon of interest (Liamputtong 2009).

In the multiple case design of this study; the intention is to go beyond an understanding of the individual case and therefore categorical aggregation becomes an appropriate strategy for between- or cross-case analysis. To operationalise categorical aggregation, the analysis methods used in this study include coding practices associated with grounded theory. To facilitate the instrumental objective of this research, multiple case study design was selected to allow for cross-case analysis (Benbasat et al. 1987; Eisenhardt 1989). Conclusions drawn from multiple case studies are more powerful than if they were drawn from one, as multiple case studies allow for the possibility of direct replication (Yin 2009). As it is important to understand the objectives, assumptions and values of the different types of practitioners, learners and sponsors; in order to build the organisational and social context of an m-learning implementation, it is necessary to conduct multiple interviews and access other forms of data within each case. Furthermore, single-case research can be challenged as unique and non-representative (Yin 2009). A multiple-case design approach has been adopted, as it is preferred over single case design, as the analytic benefits from having two (or more) cases may be substantial (Yin 2009). Within multiple case design, each case serves a specific purpose within the overall scope of inquiry (Yin 2009).

Consequently, three cases have been selected from different organisations to explore m-learning development and implementation from the perspective of practitioners and stakeholders in different roles, practices and organisational contexts. The CoP perspective adopted for this study focuses on social context, and the meaning and interpretations m-learning practitioners apply to their practices in different organisational contexts, including how m-learning stakeholders influence the practitioners during m-learning development and implementation.
4.4.4 Case selection

The selection of case organisations is based upon theoretical and pragmatic considerations. From a theoretical perspective, m-learning research to date focuses on the technical aspects of practice and implementation of m-learning. These have been found in a number of areas including health (Wiredu & Sørensen 2006), rural areas (Najafabadi et al. 2014), IT and secretariat services (Saccol et al. 2011) and universities (Iqbal & Qureshi 2012). Whilst researchers have theorised about m-learning practice and implementation in these industries, other industries where there is growing a mobile workforce such as design and construction, real estate management and financial services are under-represented.

The selection of the case organisations in the design and construction, real estate management, financial services industries were also made on practical grounds. To capture the complex multidimensional nature of m-learning implementation, access to key stakeholders (practitioner, learner and sponsor) is needed. Based on the researcher and her supervisors’ professional experience and professional networks across these domains; there is a greater likelihood that permission to interview practitioners, learners and sponsors and access to documentary evidence will be granted in these industries.

Yin (2009) states that in order to compare findings from multiple cases, the selection of case studies should follow replication logic, which allows for cross-case comparisons using the logic of literal and theoretical replication (Yin 2009). Literal replication of a case expects a second case, which is similar to the first in terms of context, to yield similar findings. Theoretical replication compares cases which are different in context, and produce contrasting results but for anticipatable reasons (Yin 2009). Furthermore, Yin (2009) suggests that conducting multiple interviews within each case can enhance the generalisability of the case study. Accepting this advice, this study conducted 6 to 12 interviews per case, including practitioners, learners and sponsors as appropriate. This aligns with the recommendation established by Eisenhardt (1989) of 4-10 interviews and Yin (2009) 6-10.

The following three organisations were selected as case studies for this research:

- Case 1 – Company A: Commercial real estate company
- Case 2 – Company B: Property fit out and refurbishment specialist company
- Case 3 – Company C: Financial services company.

To mitigate inter-industry variation, the cases are limited to two industry groups (design, construction and real estate management and the financial services industry) with preference for Australian-based organisations to allow the study findings to be more relevant to Australian organisations.

4.4.5 Data collection methods

Case study research involves gathering evidence from a variety of sources including documentation, archival records, questionnaires, interviews, observations and physical artefacts (Eisenhardt 1989; Yin 2009). The triangulation of data collected from multiple sources allows for an in-depth study of a phenomenon from different angles and may increase the validity of the research findings (Yin 2009). Even though the primary data collection method
has been interviews, a detailed understanding of organisational and social phenomena associated with m-learning implementation will be sought by triangulating data collected from multiple sources including direct observation, documentation and physical artefacts.

Furthermore, field notes are being kept where impressions that occur throughout data collection are documented, that is, to react rather than sift out what may seem important because it is often difficult to know what will and will not be useful in the future (Eisenhardt 1989). According to Eisenhardt (1989, p.539) the thinking in these notes will be reviewed and analysed by asking questions such as “What am I learning?” and “How does this case differ from the last?”

4.4.5.1 Semi-structured interviews

Semi-structured interviews were the primary data collection method used in this research because these can lead to insightful information about the complex behaviour of a social group without limiting the field of enquiry (Fontana & Frey 2000). Within each organisation, interview candidates were selected representing the three areas of research focus: practitioners, sponsors and learners. In this way, the interview candidates were selected in a deliberate manner. This is also described by Yin (2010) as “purposive sampling” (p.88) where the goal or purpose for selecting the specific study units is to have those that will yield the most relevant and plentiful data, given the topic of study. Careful consideration has been given to ensure that research participants included a representative sample of practitioners, sponsors and learners including a variety of roles amongst the practitioners and learners. Also, consideration was given to ensure that learners from different geographic offices were interviewed, as appropriate. The careful consideration of research participants in purposive sampling helps to ensure that a variety of views can be obtained from different participants and “most of all, avoid biasing the study” (Yin 2010, p.88).

The interview questions have been formed from the research questions, academic and professional interest in the problems of m-learning and concern with traditional rationalist approaches. Furthermore, the interview questions have also been informed by the literature and previous research conducted in the m-learning domain. The way the interview questions were designed reflects the attempt to draw from interviewees the roles and practices of m-learning practitioners from the practitioners themselves, as well as from the learners and sponsors involved in the m-learning development and/or implementation. The case study interview guide is included in Appendix 1.

The interviews have been recorded to enable subsequent analysis of the data. These recordings were transcribed to assist with grounded theory analysis. To preserve the anonymity of the research participants and organisation, the original names will not be used and a special coding scheme has been developed and used throughout the conduct of the research and publication of the research findings.

4.4.5.2 Interview protocol

The interview protocol could guide the researcher and the interview, and should substantively reflect the broader study and serve as a conversational guide (Yin 2011, p.139). The interview protocol is not a questionnaire, but rather represents a mental framework and usually contains
a small subset of topics considered relevant to a given interview (Yin 2011). For case study research that focuses on a particular institution and/or situation, the interview protocol can also be used to ‘chart’ the main aspects of the phenomenon of interest and merely contain the areas of interest to be covered (Kvale & Brinkmann 2009). Following the advice from both Kvale & Brinkmann (2009) and Yin (2011), this study developed an interview protocol that considered 1) the roles and practices of the practitioners from their perspective, and 2) the conceptualisation of m-learning from the perspective of the sponsor and learners (and other relevant stakeholders as required) and their influence on the practitioners.

4.4.5.3 Direct observation

Because a case study should take place in the natural setting of the ‘case’, there is the opportunity for direct observation and this is often useful in providing additional information about the topic being studied (Yin 2009, pp. 109-110). In addition to semi-structured interviews, direct observation has been used as a data collection method, as it provides the opportunity to see things that may escape the awareness of people in their social setting (Patton 2002). Field notes have been made during meetings and observing behaviours and practices in the corporate business context by being an observer in the workplace. These field notes have also be used as primary sources in the data analysis as recommended by Levina & Vaast (2005). Following the advice from Walsham (2006), impressions and ideas that emerged from the interviews were also documented and used to inform the analysis of the interview data.

4.4.5.4 Document analysis

According to Yin (2009), for case study research “the most important use of documents is to corroborate and augment evidence from other sources” (p.103). Also, documents can provide important information about things that cannot be observed, including those things that took place before the field research began (Patton 2002). For this research, the documents to be analysed include, but are not limited to, PowerPoint presentations, emails, training documents (including plans, content, design, etc.), m-learning implementation plans, reports generated by m-learning applications and m-learning project review reports. In addition to the field notes from direct observation, documentation analysis was also used during memo writing to check the validity of emergent theoretical categories.

4.4.6 Data analysis strategy

The data analysis strategy developed for this study considers the research paradigm and use of theory in interpretive research (Orlikowski & Baroudi 1991; Klein & Myers 1999; Walsham 2006), instrumental research interests (Stake 1995) and minimising the potential constraints of priori assumptions about the phenomenon under study (Charmaz 2010; Chughtai & Myers 2017).

Figure 4.3 illustrates the data analysis strategy and how grounded theory has been operationalised as a data analysis method in this study.
Walsham (2006) argues that theory can be used as an initial guide to design and data collection, as part of an iterative process of data collection and analysis, or as a final product of the research (p.32). Furthermore, Walsham (2006) emphasises the iterative nature of interpretive case study research and the use of theoretical concepts without being constrained by them.

Klein and Myers (1999) also emphasise the importance of theory in interpretive research and described theory as being used in a different way compared to the common positivist research approach – “interpretive researchers are not so interested in ‘falsifying’ theories as in using theory more as a ‘sensitising device’ to view the world in a certain way” (Klein & Myers 1999, p.75).

Because interpretive researchers focus on themes and categories that emerge from the field, with in-depth examination of and exposure to the phenomenon of interest, their research will reflect the experience of both the researcher and research participants (Orlikowski & Baroudi 1991).

Heeding the advice provided by Orlikowski and Baroudi (1991) and Walsham (2006), that is, to be open minded about theories to gain good insights from the field data and to be aware of the researcher’s prior assumptions about the phenomenon under study; the researcher uses CoP theory to frame the research to inform the empirical work during the initial data analysis. However, an open mind to the field data is maintained so that theoretical concepts are not constrained. For example, predefined theoretical codes were not used in the data analysis strategy. The researcher acknowledges that the literature review and familiarity with CoP theory could sensitise their understanding of field data. To help address the potential bias because this sensitivity could colour the understanding of the phenomena under study, once the initial categorisation of the data and initial findings were formed, the theoretical concepts, categories and codes were explicitly revisited for ‘theoretical grounding’ (Goldkuhl & Cronholm 2010).
Orlikowski and Baroudi (1991) and Walsham (1995, 2006) also suggest that researchers should adopt a perspective that is compatible with their own research interests and predispositions. The researcher has adopted an instrumental case study approach, selecting three case studies to gain a multifaceted perspective of the roles and practices of m-learning development and implementation. Heeding the advice provided by Stake (1995) this study will analyse empirical data using abstraction by categorisation, which was suggested as an appropriate strategy for researchers taking an instrumental research approach.

The researcher’s professional industry experience and potential *priori* assumptions and bias in relation to the interpretation of data was considered when the data analysis strategy was developed for this study. Glaser (1992) warns that researchers with a *priori* experiential and theoretical knowledge are at risk of consciously or unconsciously applying existing theoretical schemes to their data or findings. There are several strategies suggested by Glaser & Strauss (1967), Strauss & Corbin (1990), Charmaz (2006, 2010), Bryant (2007), and Birks (2011) to manage prior assumptions of researchers and their influence on the study. These strategies have been adopted and applied to this study.

Glaser & Strauss (1967) suggest that researchers can be guided by an understanding of existing theories and focus on the data – this may help the researcher “see relevant data and abstract significant categories from his/her scrutiny of the data” (p.3). Similarly, Bryant (2007) advises that researchers should be “sensitive not only to the different positions in theories, but also to the cracks between the theories, the spaces in literature, as well as in the field itself where the taken for granted categories of sociology are broken, and where theory indeed does emerge from the ground up”. Even though the researcher’s previous experience as a consultant, manager and director have influenced the selection of research perspectives and cases to investigate; the researcher remains open to and focused on the field data and seeks to understand but not be constrained by existing theoretical knowledge or experience.

Strauss & Corbin (1990) suggest a reflexive approach to the data and improving theoretical sensitivity by using questioning, looking at language and thinking in terms of metaphors and similes, asking “so what” and “what if” (p.69). Furthermore, Birks (2011) recommends developing memos or notes to “explicate assumptions and challenge theoretical leanings” (p.63) and that immersion in the data will help sensitise the researcher to the data that have meaning, relevance and consequence for developing theory. To remain open to the field data and to understand and not be constrained by *priori* assumptions and experience, grounded theory will be used as the data analysis strategy. Specifically, the coding and categorisation techniques suggested by Charmaz (2006) have been adopted here.

Further to the strategies described above, grounded theory as a data analysis method was applied to mitigate the researcher’s personal professional industry experience, potentially prejudicing interpretation of the data. Grounded theory has been used as an approach to data analysis rather than as a theory generating method in its own right, and enables the researcher to position themselves in the research, learn and inductively develop, through systematic and sequential data collection, new ways to understand the role and practices of m-learning practitioners, and how practitioners, learners and sponsors conceptualise m-learning. Charmaz (2010) argues that a fundamental tenet of qualitative theory is to see the world as our “research
learners’ lives from the inside” (p.14). This often gives a researcher otherwise unobtainable views and they may learn that what outsiders assume about the world being studied may be limited, imprecise, mistaken, or egregiously wrong (p.14). However, the researcher also acknowledges that while grounded theory analysis of the roles and practices of m-learning practitioners and m-learning development and implementation offers an interpretive portrayal of the phenomena under study, it is not an exact picture (Charmaz 2006, p.10).

This study will conduct its data analysis in two stages. The first stage involves within-case analysis of each of the three cases. In the second stage, cross-case analysis will be conducted considering the findings across all three cases to examine critical similarities and differences. This helps to understand the roles and practices of practitioners, sponsors and learners to answer the research questions. The data analysis approach is discussed in detail in the following section.

4.4.7 Data analysis method – within-case analysis

M-learning practitioners and stakeholders were interviewed predominantly face-to-face, with only a small number of interviews conducted by phone. All interviews were recorded digitally and transcribed. Consistent with the grounded theory data analysis approach, initial line-by-line, focused and theoretical coding were completed using the approach recommended by Charmaz (2010). Data was also gathered from other sources including documents and other artefacts as well as observations. Field notes were kept throughout the research process to record the researcher’s thoughts and observations. The within-case analysis and findings were derived from the triangulation of the interview data and different data sources. The coding, analysis and interview process was highly iterative. Throughout the process of coding, clustering, memo writing, analysis and development of findings, as insights emerged the research questions and interview questions were revisited and enhanced as required. The within-case analysis process is illustrated in Figure 4.4. This process was repeated for each of the three cases. The next section further details the approach to coding and development of theoretical categories and themes in this study.
Yin (2009) suggests conducting multiple interviews within each case to enhance the generalisability of the case study. Following this advice, this research conducted 26 interviews, predominantly face-to-face, from August to December 2016 across three cases. The interviews were digitally recorded and transcribed. Table 4.4 summarises the number of interviews conducted across cases.

Table 4.4: Interviews conducted

<table>
<thead>
<tr>
<th></th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practitioner</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Learner</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Sponsor</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>8</td>
<td>12</td>
<td>26</td>
</tr>
</tbody>
</table>

4.4.8 Coding approach

Grounded theory coding consists of at least two main phases, according to Charmaz (2006, p.46). These are: 1) an initial phase involving naming each word, line, or segment of data followed by 2) a focused, selective phase that uses the most significant or frequent initial codes to sort, synthesise, integrate, and organise large amounts of data. These two phases are detailed below.
4.4.8.1 Initial coding

The initial line-by-line coding of the interview transcripts involved assigning a code to each line of the data that summarised and accounted for a piece of the data. While engaged in initial coding, early data will be mined for analytic ideas to pursue in further data collection and analysis. Initial coding entails a close reading of the data and during initial coding, the goal is to remain open to all possible theoretical directions indicated by readings from the data. In the second phase, focused coding will be used to pinpoint and develop the most salient categories in large batches of data. Theoretical integration begins with focused coding and proceeds through all subsequent analytic steps.

Coding is described by Charmaz (2006) as “active coding” to reflect the interaction the researcher has with the data again and again, asking many different questions. As a result, coding may take the researcher into unforeseen areas with new research questions. Language plays a crucial role in how and what is coded. Charmaz (2006, p.46) emphasises that the empirical world does not appear to researchers in some natural states, apart from human experience, but rather through language and the actions we take. Therefore, the assignment of codes was mainly based on the researcher’s interpretation of the participant’s words and actions. Gerunds was used as much as possible for the initial codes to help detect processes, sequence, gain a strong sense of action and stick to the data (Charmaz 2006, p.49). During initial coding, the researcher attempts to stick closely to the data and asks the following questions, as recommended by Charmaz (2006) quoting Glaser & Strauss (1967) and Glaser (1978):

- What is this data a study of? (Glaser & Strauss 1967, Glaser 1978)
- What does the data suggest? Pronounce? From whose point of view? What theoretical category does this specific datum indicate? (Glaser 1978)

Line-by-line coding provides leads to pursue and is an iterative process. This is illustrated by Charmaz (2006, p. 53):

If, for example, you identify an important process in [later] interviews, then you can return to earlier respondents to see if that process explains events and experiences in their lives. If not, you can seek new respondents who can illuminate this process.

Coding is also iterative because the researcher works and re-works through the initial coding of interview transcripts and code assignment to particular lines of text, updated as new insights are revealed. Therefore, the data collection and coding become more focused as the study progresses (Charmaz 2006). Initial coding is also a reflexive approach that helps the researcher to avoid subconsciously applying personal theories or prejudices (Charmaz 2006; Birks 2011). An example of the initial coding during within-case data analysis is illustrated in Figure 4.5.
Initial codes

Asserting their role as project manager
Telling practitioners to ‘do the doing’
Practitioner expressing despair
Having too many people involved believing they were the ‘project manager’
Practitioner finding too many people being involved as ‘project managers’ difficult
People operating under existing management reporting lines
Taking on the label of ‘project manager’
Performing low level tasks
Marketing thought they were just managing marketing
Not wanting to perform low level project tasks
Seeing project tasks as unwanted extra responsibility
Struggling to balance project workload with different people in different roles
Practitioners working well together
Managing project was difficult
Practitioners experiencing the same pressures because they perform the same job
Having the same job was helpful

Excerpt: Case 1 Practitioner 2 Interview transcript

She [NSW State Executive’s personal assistant] was like I’m the project manager and you guys need to do the doing.

We were like “oh my god”. We were just trying to make the whole thing work. At one point there were probably too many fingers in the pie because everyone thought they were the project manager.

That was really challenging. At the end of the day everyone was just trying to appease the needs of their manager. [The other practitioner] and I was just trying to do our jobs and make [the sponsor] happy by labelling ourselves project managers but at the end of the day we were doing a lot of the nitty gritty tasks as well.

Marketing I think at first. They were all excited about helping but again thought they were just project managing the marketing and really didn’t want to do the doing and who does? It’s just extra responsibilities. Even having one core project manager know there was not one [the practitioners] really struggled to find a balance between everybody’s roles to make sure that everything was being done.

We got there eventually but he and I work extremely well together, which makes life a lot easier, because we get it.

It was not without its challenges on the project management front.

We get the same pressures. We get everything because we’re performing the same job basically. That was really helpful.

Figure 4.5: Initial coding example
4.4.8.2 Focused coding

Focused coding is the second major phase, following on from the initial coding described above. These codes are more directed, selective, and conceptual than word-by-word, line-by-line, and incident by-incident coding (Glaser 1978). After the establishment of some strong analytic directions through initial coding, focused coding will be used to synthesise and explain larger segments of data. Focused coding means using the most significant and/or frequent earlier codes to sift through large amounts of data. Figure 4.6 provides an example of how the 17 initial codes (Figure 4.5), converged to five as focused codes.

**Focused codes**

**Excerpt: Case 1 Practitioner 2 Interview transcript**

Facing resistance from stakeholders

Balancing dual organisational roles

Practitioner role not clearly defined

Operating under existing reporting lines

Working as a team with the same role was helpful

She [NSW State Executive’s personal assistant] was like I’m the project manager and you guys need to do the doing.

We were like “oh my god”. We were just trying to make the whole thing work. At one point there were probably too many fingers in the pie because everyone thought they were the project manager.

That was really challenging. At the end of the day everyone was just trying to appease the needs of their manager. [The other practitioner] and I was just trying to do our jobs and make [the sponsor] happy by labelling ourselves project managers but at the end of the day we were doing a lot of the nitty gritty tasks as well.

Marketing I think at first. They were all excited about helping but again thought they were just project managing the marketing and really didn’t want to do the doing and who does? It’s just extra responsibilities. Even having one core project manager know there was not one, [the practitioners] really struggled to find a balance between everybody’s roles to make sure that everything was being done.

We got there eventually but he and I work extremely well together, which makes life a lot easier, because we get it.

It was not without its challenges on the project management front.

We get the same pressures. We get everything because we’re performing the same job basically. That was really helpful.
One goal of focused coding is to determine the adequacy of codes and it requires decisions about which initial codes make the most analytic sense to categorise the data incisively and completely (Charmaz 2006, pp. 57-58). The five focused codes (Figure 4.6) were used because each was considered to explain a larger segment of data. The focused codes generated from the first case were available to be used for focused coding in the second case. Consequently, the focused codes generated from both the first and second case were available to be used for focused coding in the third case. Through this process new focused codes were developed on an iterative and as required basis.

4.4.8.3 Clustering and memo writing – raising focused codes to theoretical categories

Following on from initial and focused coding, the next step was to reflect on data analysis progress and question both data and coding. The guidelines for raising focused codes to theoretical categories by Charmaz (2006) were used. Data from various sources were analysed to derive theoretical categories. Each focused code was assessed for its capacity to go beyond a description of the data itself, and represent a broader and more general understanding of the meanings ascribed to m-learning and the relationships between stakeholders. In other words, the question was asked about each focused code – can some of the focused codes be a theoretical code? Theoretical coding is a sophisticated level of coding that follows the codes that have been selected during focused coding. Glaser (1978) introduced theoretical codes as conceptualising “how the substantive codes may relate to each other as hypotheses to be integrated into a theory” (p.72). In short, theoretical codes specify possible relationships between categories developed during focused coding. Glaser (1992) argues that these codes preclude a need for axial coding because they “weave the fractured story back together” (Glaser 1978, p.72). Theoretical codes are integrative; they lend form to the focused codes that have been collected. These codes may help tell an analytic story that has coherence. Therefore, these codes not only conceptualise how your substantive codes are related, but also move the analytic story in a theoretical direction (Charmaz 2006, p.63). In general, focused codes were combined to determine if one focused code could become the category while the others became its data set. The method used to determine which focused codes were raised to theoretical categories was clustering (Charmaz 2006).

Firstly, the focused codes were organised into diagrammatic clusters that appeared to be similar or closely related and which occurred frequently. As Rico (1983) suggests, clustering provides a non-linear, visual, and flexible technique to understand and organise data. Like freewriting, a major objective of clustering is to liberate the researcher’s creativity – by writing a central idea, category, or process; then circling it and drawing spokes from it to smaller circles to show its defining properties, and their relationships and relative significance. The cluster diagrams provide an easy to comprehend visual representation in order to understand the relationship and connections between focused codes. Clustering also allows for easier evaluation and comparison of focused codes to recognise emergent theoretical categories. Furthermore, each cluster provides an initial sketch for memos to be developed. The clustering approach and associated structuring and sorting of focused and theoretical codes was highly beneficial in dealing with the large number of focused codes and data analysed.
Secondly, memos were written for each focused code raised to a theoretical category. By using memos, the researcher goes beyond using a code as a descriptive tool to view and synthesise data (Charmaz 2006, p.91). Typically, according to Charmaz (2006, p.92), the following are included in narrative statements in memos:

- Define the category
- Explicate the properties of the category
- Specify the conditions under which the category arises, is maintained, and changes
- Describe its consequences
- Show how this category relates to other categories.

Table 4.5 provides an example of how each theoretical category was summarised in memos. The category ‘Practitioner role not clearly defined’ was developed from related focused codes and field notes.

**Table 4.5: Memo – “Practitioners balancing dual organisational roles”**

<table>
<thead>
<tr>
<th>Category definition</th>
<th>Practitioners had to balance the activities of their existing roles with the activities associated with the development and implementation of the m-learning project.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused codes</td>
<td>Engaging staff for expertise; Having difficulty balancing workload and roles; Practitioner role not clearly defined; People operating under existing management reporting lines; Working as a team with the same role; Practitioners feeling a strong sense of accountability; Struggling to gain commitment from stakeholders to complete project tasks.</td>
</tr>
<tr>
<td>Characteristics or properties</td>
<td>These views were expressed by the practitioners which regards to their workload and work priorities. When the practitioners reflected on their dual roles they identified themselves as belonging to the HR Department as their primary role and their m-learning practitioner role as secondary.</td>
</tr>
<tr>
<td>Conditions under which the category arises, is maintained, and changes</td>
<td>When practitioners are expected to develop and implement m-learning in addition to their day-to-day operational roles.</td>
</tr>
<tr>
<td>Consequences</td>
<td>The project work was in addition to their day-to-day work and the practitioners were not given direction by their line manager, who was also the sponsor, as to how they should balance their existing and practitioner roles. They were expected to work through these work balance and additional work effort problems for themselves. Comments from the practitioners indicate that they had difficulty managing the deliverables associated with their existing organisational and practitioner roles.</td>
</tr>
</tbody>
</table>
Performing dual roles can be a considerable source of stress for practitioners and can affect how they conceptualise m-learning. The practitioners had to dynamically alternate between their organisational and practitioner roles.

Where practitioners have dual roles, and are expected to self-manage the responsibilities and deliverables associated with their dual roles, this can have an adverse impact on their ability to meet the responsibilities and deliverables of both their existing organisational and practitioner roles.

**Observation**

- The practitioners were physically located on the same floor and have their working desks sitting within a few meters of each other in an open office.
- The interactions between the practitioners were friendly and informal, reflecting a working relationship that appeared respectful and harmonious.

**Field note**

- The practitioners seemed organised and prepared to participate in the research. A meeting room was booked for the entire day for interviews to be conducted with all the research participants. All research participants arrived for the interviews on time and were frank and honest in their interactions with the researcher.

This category also relates to: Practitioner role not clearly defined; Meeting the sponsor’s requirements; Supporting the learning needs of sales staff; Having existing working relationships; Engaging with the sponsor, learns and staff for expertise

### 4.4.8.4 Developing theoretical categories with the support of clustering diagrams

An illustration of the clustering diagrams used to support the development of each of the theoretical categories, in addition to using memos, is provided in Figure 4.7. The bubble in the centre of the cluster represents the theoretical category and the bubbles around the theoretical category bubble represent focused codes related to the theoretical category. The theoretical categories are used as subheadings in the within-case analysis chapters (see Chapters 6 to 8). Further, clustering diagrams are provided in Appendix 2.
4.4.8.5 Saturating theoretical categories

When do you stop gathering data? What criteria do you use? The standard, short, grounded theory answer to the criteria question dictates: stop when your categories are ‘saturated.’ The longer answer is that categories are ‘saturated’ when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories. In other words, by continuously engaging with the data and comparing new data with existing theoretical categories, when there is no further re-contextualisation, saturation of the theoretical categories is considered to have occurred.

As implied above, grounded theory saturation is not the same as witnessing repetition of the same events or stories, although many qualitative researchers confuse saturation with repetition of described events, actions, and/or statements. The common use of the term saturation refers to nothing new happening (Charmaz 2006). In contrast, Glaser (2001) takes a more sophisticated view of saturation than implied by common research parlance.

When assessing whether categories have been saturated, the following questions are asked (Charmaz 2006, p.113):
• Which comparisons do you make between data within and categories?
• What sense do you make of these comparisons?
• Where do they lead you?
• How do your comparisons illuminate your theoretical categories?
• In what other directions, if any, do they take you?
• What new conceptual relationships, if any, might you see?

As the study continues to engage with the empirical data and theoretical categories, throughout the analysis of Cases 1, 2 and 3, it is found that the derived theoretical categories adequately described the observed phenomena and no new insights emerged. Therefore, the study was completed without requiring a fourth case study.

4.4.8.6 Developing themes

To make sense of the large number of theoretical categories, further abstraction was required. The approach suggested by Goulding (2002) was adopted – linking theoretical categories to emerging themes to provide a clearer explanation of the social processes associated with the development and implementation of m-learning initiatives. The process used in developing the themes in this study, using abstraction, generalisation and ‘scaling up’, is consistent with the approach suggested by Glaser (1978), Klein and Myers (1999) and Urquhart et al. (2010). Scaling up is the process of grouping higher-level categories into broader themes and contributes to the generalisability of the theory Urquhart et al. (2010, p.369).

The research objectives and research questions were considered in the development of themes. The focus of this study was to focus on the conceptualisation and practices of m-learning practitioners and stakeholders. Therefore, five themes have been developed as a way of organising the theoretical categories and results and findings from the within-case and cross-case analysis. The themes, including a description of each theme, are included in Table 4.6.

Table 4.6: Description of themes
The themes and theoretical categories across the three cases are shown in Table 4.7.

**Table 4.7: Themes and theoretical categories across the three cases**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Theoretical category</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme 1: Practitioners’ interpretation of m-learning</td>
<td>Practitioners’ role:</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Balancing dual organisational roles</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Practitioner role not clearly defined</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Meeting the sponsor’s requirements</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Supporting the learning needs of sales staff</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Adopting tools to motivate learners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Theme 2: Practice work of practitioners</td>
<td>Working as a team:</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Having existing working relationships</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Working as a team in an informal manner</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Practitioners engaging stakeholders:</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Engaging with the sponsor, learners and staff</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Engaging with the sponsor and learners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Engaging stakeholders</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Communicating with learners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Liaising with the sponsor</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Engaging with the vendor</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Focusing on rapid implementation in a bureaucratic business context:</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Negotiating timelines</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Rushing implementation</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Working in a bureaucratic context</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Addressing technical issues</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Theme 3: Sponsors’, learners’ and executive managers’ perspective</td>
<td>Taking management control</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Being focused on cost and revenue</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Seeing return on investment as important</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Delegating project delivery to the practitioners</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Sponsor directly engaging senior executives and securing resources ✓
Focusing on rapid implementation ✓ ✓
Supporting sales staff:
• Supporting the learning needs of sales staff ✓
• Focusing on the capability improvement of sales staff ✓
Building a more collaborative knowledge sharing culture ✓
Perceiving m-learning as supplementing face-to-face training ✓

Theme 3: Learners’ and executive managers’ perspective
Learners conceptualising m-learning as social and supporting learning:
• Learners’ training needs being supported ✓
• Learners conceptualising m-learning as knowledge sharing and social tool ✓
• Learners being social, helping and supporting each other ✓
• Experiencing m-learning as fun and a positive experience ✓
Having different learner motivations for adopting m-learning ✓
Learners perceiving m-learning positively:
• Learners perceiving m-learning positively ✓
• Learners having a positive view of the practitioners’ work ✓
M-learning competition motivating many learners ✓
Valuing m-learning as convenient and efficient ✓
Executive managers as stakeholders motivating learners ✓ ✓ ✓

4.4.9 Data analysis – cross-case analysis

The three themes detailed in Table 4.7 helped to provide a frame for reflection across the three cases. Within the themes the three cases were analysed and compared for similarities and differences. During analysis of the second and third cases, notes were taken to record new insights and areas that may reveal new patterns and insights between them. This process allowed the researcher to refine the list of theoretical categories and to re-evaluate if the themes identified were relevant to each case. This iterative approach of developing themes and theoretical categories allows the researcher to look for important patterns and insights that are relevant to the social processes associated with m-learning initiatives. This may explain the factors that influence the ability of the practitioners to establish and maintain connections amongst them and stakeholders.

4.5 Strategy for writing the results

This section provides the detailed approach on how the results of the within-case and cross-case analyses will be written up.

4.5.1 Writing up the cases

The within-case analysis will be structured and written up following the suggestions by Orlikowski and Baroudi (1991), Stake (1995), Walsham (1995) Eisenhardt & Graebner (2007), Yin (2009) and Myers (2013). Following the suggestion of Stake (1995), Yin (2009) and Myers (2013) – that writing should start as soon as possible including a draft extended table of contents; a detailed structure of the within-case analysis chapter was developed early in the research that was populated and refined as data was collected and analysed progressively. Table 4.8 illustrates the structure that will be followed by the three within-case analysis
chapters, including the rationale for the structure. The first part of the within-case analysis will provide contextual information because of the idiosyncratic nature of this study which “attempts to understand a phenomenon in its context” (Benbasat et al. 1987, p.369).

Table 4.8: Within-case analysis chapter structure

<table>
<thead>
<tr>
<th>Within-case analysis chapter</th>
<th>Rationale and discussion regarding within-case analysis chapter structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case study background</td>
<td>The context of the phenomenon under study is of great importance to interpretive research studies because it helps increase the understanding of the phenomenon, especially where the phenomenon of interest was examined in its natural and real-world setting and from the perspective of the participants (Orlikowski &amp; Baroudi 1991; Eisenhardt &amp; Graebner). And further, “Produce an understanding of the context of the problem and ... whereby the problem influences and is influenced by the context” (Walsham 1995). Therefore, this section is included because the background to the case study is important to provide key contextual information with regards to the organisation, m-learning initiative and key personnel relevant to the m-learning initiative under investigation.</td>
</tr>
<tr>
<td>Research participants</td>
<td>The information about the research participants provide further context in terms of how the participant’s perspective may be influenced by factors such as their role in the company, and their experience and involvement in the m-learning initiative. Therefore, information about the research participants is included to validate that their input can provide important insights to the study. Information such as the participant’s role in the company and their involvement in the m-learning initiative is provided for each research participant in this section. Furthermore, following the suggestion from Yin (2006) the anonymity of the research participants is preserved throughout within-case and cross-case analysis to allow the participants to freely express their views without fear of retribution.</td>
</tr>
<tr>
<td>Discussion of results</td>
<td>Suggestions made by Walsham (1995) have been incorporated as part of the data analysis and discussion of the results. “With respect to data analysis, reporting should include how the field interviews and other data were recorded, how they were analysed and how the iterative process between field data and theory took place and evolved over time” (Walsham 1995, pp. 78-79). The results from the within-case analysis are structured and discussed according to the three themes detailed previously (see Table 4.4). The data analysis and theoretical categories were developed iteratively and are discussed under these three themes (also developed iteratively) to answer the research questions. To allow the reader to follow the logic and build-up of the findings, the within-case analysis chapter presents the analysis of the theoretical categories under each theme. At the conclusion of the chapter, the findings are discussed in relation to the research questions, as illustrated in Figure 4.8.</td>
</tr>
</tbody>
</table>
Figure 4.8: Within-case analysis chapter structure
4.5.2 Writing up the cross-case analysis

The cross-case analysis results discussed in Chapter 8 also follow a structure using the three themes discussed above. According to Eisenhardt (1989), while the within-case analysis allows the researcher to “gain familiarisation with data and preliminary theory generation” cross-case analysis forces the researcher “to look beyond initial impressions and see evidence thru multiple lenses” (p.533). Because this study is predominantly focused on “theory-building”, the structure of the within-case and cross-case analysis chapters follow the suggestions made by Yin (2009) where the cases are used to “explain, explore [and] ... follow some theory-building logic” (pp. 176-177). Yin (2009) argues that theory-building structures “can produce compelling and impressive case studies [when] structured well” (p.177).

4.5.3 Quality of interpretive research

This chapter aims to provide the details of the research methodology and design developed for this study, considering the criticisms of interpretive research and the provisions made to ensure trustworthiness in the research findings. This approach heeds the advice provided by Shenton (2004), that researchers should not only be aware of the criticisms of interpretive research, but they should also be cognisant of the provisions which can be made to address matters to ensure there is trustworthiness in their research. Lincoln & Guba (1985) argue that interpretive research is based on very different ontological and epistemology positions from positivist research and therefore a different set of “trustworthiness” criteria should be considered. Even though the question “how do we separate good research from poor research?” has been debated for some time, Lincoln (1995) argues that the criteria for judging the quality of interpretive research are “fluid” and “emergent” (p.275).

There is no definitive set of generally accepted guidelines to evaluate the quality or “trustworthiness” of interpretive case study research (Eisenhardt 1989). Some authors suggest a set of quality criteria or principles, while others provide a set of objectives. Table 4.9 provides a summary of the different criteria, principles or recommendations different authors propose to improve the quality of interpretive research.

<table>
<thead>
<tr>
<th>Author</th>
<th>Criteria, principles and objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guba (1981)</td>
<td>Criteria for interpretive research:</td>
</tr>
<tr>
<td>Shenton (2004)</td>
<td>Credibility; Transferability; Dependability; Confirmability.</td>
</tr>
<tr>
<td>Eisenhardt (1989)</td>
<td>Results should be parsimonious, testable and logical; Address empirical issues; Provide new insights.</td>
</tr>
<tr>
<td>Walsham (1995)</td>
<td>Choosing the role of the researcher; Collecting and analysing interviews data; Persuading the reader.</td>
</tr>
</tbody>
</table>
The purpose of Table 4.9 is not to provide an exhaustive list of different quality criteria, principles or objectives. Rather, this table indicates the diversity in how trustworthiness or quality is viewed by different authors.

Shenton (2004) offers useful suggestions of the provisions that can be applied to research in the pursuit of a trustworthy study, under the four criteria suggested by Guba (1981): credibility, transferability, dependability and confirmability. These four criteria correspond to those used by positivist researchers (Shenton 2004, p.64). On the other hand, Klein & Myers (1999) suggest seven principles based on anthropology, phenomenology and hermeneutics and caution that the set of principles “cannot be applied mechanistically”. They ask researchers to exercise their judgement and discretion in deciding whether, how, and which principles should be applied and appropriated in any given study. However, they also caution that principles to some extent are interdependent and should not be arbitrarily used – adopting some, while ignoring others. Yin (2010) emphasises three objectives for building trustworthiness and credibility of qualitative research studies.

In order to have a framework for discussing how this study has incorporated the suggestions made by these authors, to improve the quality of this research, Charmaz’s (2006) credibility, originality, resonance and usefulness criteria have been used as sub-headings to group the discussions about the various criteria, principles and objectives (see Table 4.10). The principle of the Hermeneutic circle has not been included in Table 4.10 because it is considered “fundamental” and an underlying principle underpinning all the principles suggested by Klein and Myers (1999), that “all human understanding is achieved by iterating between considering the interdepending meaning of parts and the whole that they form” (p.72).
4.5.3.1 Credibility

According to Charmaz (2006), research studies with credibility have an intimate familiarity with the setting or topic with sufficient data and evidence to merit claims and findings. In a similar vein Shenton (2004) quotes Lincoln & Guba (1985) and argues that ensuring credibility is one of the most important factors in establishing trustworthiness. Furthermore, Shenton (2004) suggests the following provisions to promote confidence that they have accurately recorded the phenomena under study, which have been adopted in this research:

- Adoption of well-established research methods. This has been a focus in the exploration of research paradigms and methods before selecting the most appropriate method for this study.
- Development of early familiarity with the culture of participating organisations. Prior to conducting any interviews with the research participants, the researcher reviews the company’s website and any documents relating to the company or the participant to gain an appreciation of the company and the participants.
- Random sampling of individuals to participate in the research was adopted. Furthermore, triangulation was used, involving the use of different sources of data (such as interview data, documents, observation and field notes). The triangulation approach adopted by this study could strengthen the validity of the study and its findings (Yin 2010). This triangulation approach also reflects the principle of suspicion which requires sensitivity to possible “biases” and systematic “distortions” in the narratives collected from the participants (Klein & Myers 1999). The criteria of confirmability are addressed by ensuring that the
researcher’s bias and subjectivity is not included in the research findings (Guba 1981, Shenton 2004). This study includes a well-thought-through research method, design and detailed interview protocol and guidelines to increase the reliability of the research and guide the researcher throughout the research process, including ensuring consistency in the data gathering and analysis within and across the cases. Also, interviews were taped and transcribed to reduce the likelihood of missing or misinterpreting interview data, and allow independent data analysis and verification by other researchers.

- Ensuring honesty was encouraged by providing a consent form for all research participants to review and sign to explicitly gain their consent to participate before interviews were conducted (Appendix 3 includes the organisation and participant consent forms approved by the Swinburne University Ethics Committee). This allows people to refuse participation and ensures that only those genuinely willing to take part and who are prepared to offer data freely and frankly are interviewed. The researcher attempted to establish rapport with the participants in the opening and throughout the interview process in line with the interview guidelines developed (see Appendix 1). This is also in line with the principle of interaction between the researcher and the subjects (Klein & Myers 1999). The researcher’s role as an “outsider” was carefully considered and explained to the participants, so that the researcher is seen as not having a direct personal stake in the research interpretations and outcomes, and therefore participants are often relatively frank in expressing their views, and because a rapport of trust is established between the researcher and the participant (Walsham 1995).

In line with the data analysis strategy detailed in sections 4.4.6 to 4.4.9, all the recorded interviews were manually transcribed to gain a deep familiarity with the data. Reflections were documented in field notes and memos and the development of grounded theory codes were documented and discussed with experienced researchers and supervisors on a regular basis. These practices concur with the provisions suggested by Shenton (2004) and Walsham (1995) in collecting and analysing interview data. The practice of using Charmaz’s (2006) data analysis method (including the coding approach in sections 4.4.6 to 4.4.9) also reflects the principles of abstraction and generalisation, dialogical reasoning and multiple interpretations (Klein & Myers 1999). Furthermore, the criteria of dependability and confirmability (Guba 1981; Shenton 2004) and “results should be parsimonious, testable and logical” (Eisenhardt 1989, p.548 quoting Pfeffer 1982) are addressed by detailing and using Charmaz’s (2006) data analysis and coding approach and strategy for writing up the results. For example, field notes and memos have been documented and used to iteratively develop various levels of coding throughout the research process, increasing consistency, traceability and auditability – linking the source data to the research findings.

The overall research methodology and design developed for this study also reflects the objectives of transparency, methodic-ness and adherence to evidence (Yin 2010) and address empirical issues (Eisenhardt 1989). Firstly, providing the details of the research design in this chapter, and the data in later chapters, allows others to scrutinise any part of this study. Secondly, the research design is quite methodic, which means following orderly research procedures and minimising bias, as described above. Finally, the research findings are based on
the data collected, and can be traced back to the source of the data, and are therefore analysed fairly (Yin 2010).

A constructivist approach is squarely in the interpretive tradition and places priority on the phenomena of study. This approach views both data and analysis as created from shared experiences and relationships with participants and other sources of data (Charmaz 2006, p.130). Therefore, the constructivist approach adopted by this research fosters the researcher’s reflexivity about their own interpretations and those of their research participants (Charmaz 2006). This reflexivity draws the researcher’s attention to potential bias and presuppositions during the analysis and write up of the results.

4.5.3.2 Originality

Originality refers to how the research may offer new insights, and challenge, extend or refine current ideas, concepts and practices (Charmaz 2006). In other words, how does this study contribute to knowledge? Eisenhardt (1989) suggests that case study research is well suited to developing theories and that strong studies are those which present interesting or frame-breaking theories which meet the tests of good theory or concept development, grounded in convincing evidence. As described in this chapter, using Charmaz’s (2006) constructivist data analysis approach and a strategy for writing the results, this study aims to develop new insights, concepts and theories. The study also includes a comprehensive literature review to cross check whether the findings from this study are new insights or validation of past research. Therefore, this ensures that the focus of the research pursues original and new insights.

4.5.3.3 Resonance

Resonance refers to how the research portrays the fullness of the studied experience and if it makes sense to the participants, offering deeper insights about their lives and worlds (Charmaz 2006). This draws the attention of the researcher to the audience of the research findings. Eisenhardt (1989) and Darke et al. (1998) suggest that because of the volume of data collected and the problems of analysis of evidence, case study research can be difficult to write up. Walsham (1995) emphasises that “interpretive researchers are not saying to the reader that they are reporting facts; instead, they are reporting their interpretations of other people’s interpretations” (p.78). Furthermore, Walsham (1995) agrees with Van Maanen (1989) that achieving resonance and validity in the eyes of the reader is “part of the art of persuasion and is as much a matter of rhetorical style and flair as it is of accuracy and care in matters of theory and method” (p.79). Yin (2010) also emphasises the importance of reporting the research findings in a “compelling and attractive manner” (p.255). In writing up the findings of this study, these suggestions have been adopted to ensure the findings are complete, contain sufficient evidence to support the findings, but are also written with a clear and lucid writing style that engages in a way that establishes a level of resonance with the reader.

4.5.3.4 Usefulness

Usefulness refers to how the study offers interpretations that people can use in their everyday worlds and may be generalised and contribute to knowledge (Charmaz 2006). This description is similar to “transferability” (Guba 1981; Shenton 2004); however, Firestone (1993) argues that the responsibility of the researcher is to ensure that there is sufficient contextual information
about the fieldwork sites to enable the reader to make such a transfer. The multiple case study approach was incorporated in the research design to provide a multifaceted understanding of the practices of m-learning practitioners. Even though the m-learning practices situated in specific contexts will likely differ in other contexts, limiting the transferability of findings from one case to another, the principle of contextualisation as suggested by Klein and Myers (1999) has been adopted. As described in sections 4.5.1 to 4.5.2, this study provides contextual information about all three cases in terms of the company, m-learning initiative and the research participants, to allow the reader to gain a sound understanding of the context in which the cases reside. Furthermore, McKay and Marshall (2000) suggests that triangulation using multiple cases, multiple participants and multiple data collection techniques will likely increase the transferability of research findings. Consequently, as described in the research design (section 4.4), this study examines three cases, involves multiple research participants, and uses a variety of data collection methods and sources.

The findings from the operationalisation of the research design detailed in this chapter will be provided in the following chapters.
Chapter 5 – Within-case analysis – Case 1

This chapter presents the analysis and discussion of the first of three within-case analyses. Firstly, this chapter presents the background to the case and research participants. Secondly, Case 1 is analysed in terms of how it relates to the research questions. The first two research questions are discussed in three themes derived using the grounded theory data analysis and clustering approach detailed in Chapter 4 – Research Methodology and Design. Theme 1 explores how the practitioners conceptualise m-learning and theme 2 analyses how the practitioners’ practices help them cohere as a Community of Practice (CoP). Theme 3 examines how m-learning stakeholders conceptualise m-learning. Finally, following the analysis of the three themes, section 5.5 addresses the final research question and provides an overall discussion of how this case relates to CoP theory.

5.1 Background

Company A is a large commercial real estate company that provides services to commercial real estate owners, investors, developers and occupiers in Australian and international markets. The primary services the company provide include consulting, corporate facilities, investment services, landlord and tenant representation, project management, urban planning, property and asset management, and valuation and advisory services. The company has offices in all Australian states and territories and employs over 16,000 staff that serve the hotel, industrial, mixed-use, office, retail and residential property sectors.

The m-learning case study under investigation is based on a podcast training project (referred to as the m-learning ‘project’ or ‘initiative’ in this study) implemented in the company’s New South Wales (NSW) head office in Sydney. Prior to the m-learning initiative, the company had no formal structured training program in place for their sales staff (also referred to as learners in this thesis). Staff training was delivered on an as-required basis using traditional methods such as face-to-face classroom-based training, on-the-job mentoring and electronic learning (e-learning) mainly accessed by desktop and laptop computers. New staff or junior staff were paired with more experienced staff to provide knowledge exchange on-the-job. The knowledge exchange between new staff or junior staff paired with experienced staff was mostly unstructured and based on the latter’s best endeavours. The experienced staff was often their first point of contact to answer job-related questions or direct them to other staff who could help on an as-required basis.

In December 2015, in response to Company A’s staff engagement survey, where staff requested more training and professional development, the NSW State Executive and Human Resources (HR) Director decided to sponsor the m-learning initiative that used podcasts to deliver training content targeting sales staff in NSW. The initiative was conceived in a meeting with both the NSW State Executive and HR Director agreeing that m-learning podcast training was a cost-effective and time-efficient way to train NSW sales staff. The decision to implement the project reflects the sponsor’s desire to support the company’s revenue and cost-control focus. They stated that the company operates in a competitive market placing a high priority and focus on revenue generation and effective control of costs, including the cost of staff training.
It was important for the HR Director to establish cost-effective and time-efficient ways to train sales staff because he was accountable for staff learning, development and training, but he only had a small budget and one full-time staff member allocated to these portfolios. The HR Director described learning, development and training as a small part of the HR Department’s responsibilities – “20% of what we [HR] do”. Despite the limited budget and resources, the HR Department had to support a growing and ongoing need to train new staff due to the company’s high turnover rate (between 27% and 33% of staff choosing to leave the company annually). M-learning podcasts were seen by the HR Director as a cost-effective and time-efficient way to reach many staff because the cost and time taken to develop m-learning podcasts was low and there was no additional cost for sales staff to access the m-learning podcasts. This was quick and easy because m-learning podcasts could be accessed using staff iPhones at any location. This was important to sales staff because an increasing number of staff work in more locations Australia wide. The sponsors saw the m-learning initiative as improving the productivity of their sales staff by providing them with access to training material while travelling to and from client meetings or work. Sales staff spent a significant amount of time travelling as they were expected to spend minimal time in the company’s offices and to spend most of their time with clients, on their premises or locations where sales deals could be negotiated and completed.

The project was the first m-learning initiative implemented in the company. Because of its novel nature, sponsors decided to treat the m-learning initiative as a pilot and provide m-learning podcasts to the NSW office to test the reception of this new way of delivering training content to sales staff. The m-learning initiative objectives were set by the HR Director and NSW State Executive as follows:

- Support a cost-effective and time-efficient way of developing and delivering training
- Develop a formal structured training program
- Deliver training content consistently using podcasts
- Better support sales staff with training content that is accessible anytime and anywhere (i.e. on demand).

In January 2016, the practitioners developed a 12-month training calendar for the 2016 calendar year. The calendar had a different training theme every month and m-learning podcasts were developed in accordance with these themes. All the themes and podcasts were designed to motivate and improve the skills of sales staff. The development of podcasts began in January and finished in July 2016 with the first podcast released on 2 February and the last on 27 July 2016. Table 5.1 provides a summary of podcasts released to learners, in chronological order, and according to training calendar themes.

| Table 5.1: Podcasts released to learners (sales staff) |
M-learning podcasts were developed by practitioners in-house using existing hardware and software. The m-learning podcasts featured company staff either delivering the podcast or interviewing internal staff or external speakers (e.g. external sales trainer and a LinkedIn representative). M-learning podcasts were recorded using the company’s existing video recorders or iPhones and were edited by the Trainer in the HR Department using video-editing software that the company already had the license to use.

The completed m-learning podcasts were uploaded to YouTube and made available to the learners using a specific web address link. The m-learning podcasts were also accessible via an iPhone application. The company’s Information Technology (IT) Department developed this application and implemented it on all company iPhones. When the learners opened the iPhone application it opened to a specific Youtube.com page that provided access to m-learning podcasts. The m-learning podcast application was incorporated as part of the company’s standard iPhone operating environment, so that if staff deleted the application, the next time the iPhone restarted the application would be automatically reloaded.

Figure 5.1 provides a summary of key events that occurred during the project. The research investigations were conducted in August 2016.

<table>
<thead>
<tr>
<th>Month</th>
<th>Training calendar theme of the month</th>
<th>Podcast released</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2016</td>
<td>Essential Sales Skills</td>
<td>2/2/16: Essential Sales Skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21/2/16: External Sales Expert interview</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25/2/16: Transition from support to sales role interview with support staff A</td>
</tr>
<tr>
<td>March 2016</td>
<td>Motivation and Discipline</td>
<td>20/3/16: Transition from support to sales role with support staff B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21/3/16: Transition from support to business services role interview 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28/3/16: Handling Client Objections</td>
</tr>
<tr>
<td>April 2016</td>
<td>Social Media Selling</td>
<td>6/4/16: Three key tips on winning</td>
</tr>
<tr>
<td>May 2016</td>
<td>Pitching, Negotiating and Presentations</td>
<td>No podcasts released</td>
</tr>
<tr>
<td>June 2016</td>
<td>Reality Check</td>
<td>No podcasts released</td>
</tr>
<tr>
<td>July 2016</td>
<td>Innovating to Win</td>
<td>27/7/16 Social Selling on LinkedIn</td>
</tr>
</tbody>
</table>
5.2 Research participants

The research participants were selected based on the data collection methods detailed in Chapter 4.4.5. In-depth interviews were conducted face-to-face at the company’s Sydney NSW office in August 2016. The interviews ranged from 30 to 80 minutes in duration and included participants that held a range of roles (Table 5.2). Careful consideration has been given to ensure that research participants included a representative sample of practitioners and stakeholders (including the sponsor and learners). To preserve the anonymity of the research participants and for ease of reference, participant codes are used in this thesis (Table 5.2) and any gender references do not necessarily correspond to the actual gender of the participant.

<table>
<thead>
<tr>
<th>Research participant’s role in the initiative</th>
<th>Number of interviews conducted</th>
<th>Participant code</th>
<th>Research participant’s role in Company A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor (1)</td>
<td>1</td>
<td>C1S1 (Sponsor)</td>
<td>Human Resource (HR) director</td>
</tr>
<tr>
<td>Practitioners (2)</td>
<td>1</td>
<td>C1P1 (Practitioner 1)</td>
<td>Learning and Development trainer</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C1P2 (Practitioner 2)</td>
<td>Human Resource (HR) adviser</td>
</tr>
<tr>
<td>Learners (3)</td>
<td>1</td>
<td>C1L1 (Learner 1)</td>
<td>Sales representative</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C1L2 (Learner 2)</td>
<td>Support staff to sales staff</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C1L3 (Learner 3)</td>
<td>Sales representative</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
<td></td>
<td><strong>Legend: C1 = Case 1; S = Sponsor; P = Practitioner; L = Learner</strong></td>
</tr>
</tbody>
</table>

Two HR advisers and one Learning and Development trainer were tasked by the HR Director to form the m-learning project team. They are referred to as ‘practitioners’ in this thesis. All the practitioners worked on the initiative on a part-time basis concurrently with their existing day-to-day organisational roles (see Table 5.2 first and last columns).

The HR Director and NSW State Executive were the two sponsors of the initiative and were peers in Company A’s organisational structure. There was more than one sponsor because it was initiated in a meeting with both the HR Director and NSW State Executive agreeing that m-
learning was a cost-effective and time-efficient way to train sales staff. Of the two sponsors, the HR Director interacted most frequently with the practitioners and provided direction and guidance to the practitioners on a regular basis (e.g. weekly). Therefore, the HR Director was interviewed as the operational day-to-day sponsor of the initiative. The co-sponsor, NSW State Executive, was not available to be interviewed.

Figure 5.2 shows the structure and role of the m-learning initiative, including day-to-day organisational roles of both sponsors and practitioners. Each box indicates one staff member. Those boxes with solid orange border outlines highlight those that were part of the initiative and interviewed as part of this study (HR Director, Learning and Development Trainer and one of the HR Advisers). Boxes with dotted orange border outlines highlight those that were part of the initiative but were not available to be interviewed as part of this study (NSW State Executive and one of the HR Advisers).

**Figure 5.2: Case 1 project team**

The sponsors and learners were key m-learning stakeholders identified by practitioners. Three learners were randomly selected by practitioners to represent the target audience of the m-learning initiative (i.e. mainly sales staff and those who support sales staff). In addition to the sponsor and practitioners, two sales representatives and one support staff member (C1L1, C1L2, C1L3) were interviewed as part of this study. The practitioners also identified other stakeholders that participated in the initiative but perceived them as relatively less important to the initiative compared to the sponsor and learners. Other stakeholders include senior management, IT, Marketing, NSW State Executive’s personal assistant and an external trainer. These stakeholders are not included in Figure 5.2 and were not interviewed. Thus the study did not lose sight of the research questions that focused on practitioners, learners and sponsors.
(being key stakeholders). Their views and perceptions are discussed vis-à-vis analysis of the practitioners’, sponsor’s and learners’ perspectives.

5.3 Theme 1 and 2: Practitioners’ perspective

This section examines the practitioners’ perspective of the m-learning initiative under two themes. These themes were derived using the grounded theory data analysis and clustering approach detailed in Chapter 4; following line-by-line and focus coding, selected focused codes were raised to theoretical categories and then further raised to a higher level of abstraction into themes to address Research Question 1 (Table 5.3). The clustering diagrams used in selecting focus codes that were raised to theoretical categories are located in ‘Appendix 2 Case 1 Cluster diagrams’. Each theoretical category is discussed within each theme under a numbered sub-heading.

<table>
<thead>
<tr>
<th>Research Question 1</th>
<th>Theme</th>
<th>Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation?</td>
<td>1. Practitioners’ conceptualisation of m-learning</td>
<td>• Balancing dual organisational roles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Practitioner role not clearly defined</td>
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<td></td>
<td></td>
<td>• Meeting the sponsor’s requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Supporting the learning needs of sales staff</td>
</tr>
<tr>
<td></td>
<td>2. Practice work of practitioners</td>
<td>• Having existing working relationships</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Engaging with the sponsor, learners and staff for expertise</td>
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<td></td>
<td></td>
<td>• Negotiating timelines</td>
</tr>
</tbody>
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5.3.1 Theme 1: Practitioners’ conceptualisation of m-learning

This theme explores how the practitioners conceptualise the m-learning initiative, in terms of how they perceive their role and how their worldview may have influenced both their practice and their relationships with stakeholders.

5.3.1.1 Balancing dual organisational roles

A key challenge for the practitioners was to balance the activities of their existing roles with those associated with the development and implementation of the initiative. This was in addition to their day-to-day work and the practitioners were not given direction by their line manager, who was also the sponsor, as to how they should balance their existing and additional roles. They were expected to work through these problems themselves. Comments from the practitioners indicate they had difficulty managing the deliverables associated with existing organisational and practitioner roles. They emphasised their concern about the significant workload they had to bear, in performing their dual roles, by describing the initiative as a “stressful journey”, “quite overwhelming” and “huge mammoth task” (C1P2).

Performing dual roles can be a considerable source of stress for practitioners and can affect how they conceptualise m-learning. The practitioners had to dynamically alternate between
their day-to-day organisational and practitioner roles. Where practitioners have dual roles, and are expected to self-manage the responsibilities and deliverables associated with their dual roles; this can have an adverse impact on their ability to meet the responsibilities and deliverables of both roles. When Practitioner 2 reflected on the dual roles he emphasised that the initiative caused him to lose focus on his day-to-day HR work because his practitioner role was “taking too much time” and “taking time away from [general day-to-day HR work]”. In the following passage, Practitioner 2 moved between his own voice and the vicarious voice of the sponsor in describing how the latter perceived practitioners as losing focus on their day-to-day HR work.

At one point I was told to pull back from it [the initiative] because [the practitioners] did start to get a bit carried away – “oh we could do a podcast on this and we will turn that into a podcast”. [The sponsor said] … let’s just think about business priorities and re-adjust our focus … make sure that we’re meeting the tempo of the business and where the pressure points are … supporting the business and I think that's just general day-to-day HR functions. (C1P2)

When the practitioners reflected on their dual roles they identified themselves as belonging to the HR Department as their primary role and their practitioner role as secondary. Two of the three practitioners were HR Advisers providing consulting services to the business on matters such as remuneration, performance management, recruitment, etc. The third practitioner was a Trainer delivering face-to-face training programs around application usage, functionality, process and compliance. Practitioner 1 referred to himself as a Trainer as their primary work and m-learning practitioner responsibilities as secondary. The practitioners conceptualised their practitioner role as temporary and performed on an as-needs basis.

5.3.1.2 Practitioner role not clearly defined

In addition to the challenges of balancing these dual roles, the practitioners were also challenged by their roles not being clearly defined within and outside the project team, who were working on an informal basis and dealing with one another on an as-needs basis. Practitioner 2 described his approach as “winging it”, referring to the informal nature of the practitioner role and a lack of definition around it. In the absence of clearly defined practitioner roles and a formal organisational structure around the initiative, people were operating under existing management reporting lines.

At the end of the day, everyone was just trying to appease the needs of their [individual] manager. (C1P2)

Notwithstanding the absence of formally defined roles, the individual practitioners in the project team still felt a strong sense of accountability for the delivery of the initiative. One way this feeling manifested itself was in the appropriation of formal organisational roles such as ‘project manager’ by the practitioners. Practitioner 2 identified as the project manager. Based on the practitioners’ comments, this reflected not so much self-promotion but more an attempt to make sense of their role in the initiative. The term ‘project manager’ was used by practitioners, not so much as a formal title, but as a metaphor that described their day-to-day
planning and coordination activities associated with the initiative. However, Practitioner 2 still performed low-level operational tasks.

[The practitioners were] just trying to do [their] jobs and make [the sponsor] happy by labelling [ourselves] project managers, but at the end of the day we were doing a lot of the nitty gritty tasks as well. (C1P2)

5.3.1.3 Meeting the sponsor’s requirements

Despite the practitioners’ role not being clearly defined, they perceived their role generally as instruments to implement the sponsor’s requirements. This may be because the sponsor was also the line manager of the practitioners and therefore, the sponsor’s requirements were interpreted by practitioners as a directive.

Structurally and as part of this [initiative] I report to [the sponsor]. I don’t want to say it’s a subservient role but effectively I was taking instructions and delivering [to meet the sponsor’s requirements]. (C1P1)

Comments from practitioners suggest they saw the importance of their role as helping to deliver the sponsor’s objectives because practitioners used similar language to the sponsor when they described their role and objectives. Practitioner 2 described his role as developing m-learning podcasts to provide training and “learning … [help sales staff with] a different way of thinking”. This mirrored the language the sponsor used when he described one of their objectives as providing “something new and different by way of learning”. Practitioner 2 also emphasised that the initiative was part of a “retention strategy”, which was his interpretation of the sponsor’s description of how m-learning podcasts help address the challenge of “[staff] turnover being higher [in Company A] than other industries” (C1S1).

The practitioners justified their key objective of using m-learning programs and technologies to deliver training because sales staff were busy and did not “sit at their desks” to do their work or training – “we are trying to make many of our [training] programs and technologies mobile” (C1P2). This description of sales staff and training design also mirrored the sponsor’s priorities. The sponsor described sales staff as “very busy” and that the m-learning podcasts serve the need of “utilising dead time or travel time [for training sales staff]”.

5.3.1.4 Supporting the learning needs of sales staff

In line with the sponsor’s directive and “number one priority … utilising dead time or travel time [for training sales staff]”, the practitioners saw their role as supporting the sales staff both in terms of their learning needs and improving their productivity. The practitioners believed that sales staff would use m-learning because it was an ‘on-demand’ option, available anytime they needed it.

[The podcasts are] self-paced, do it at your leisure, [available] when you need it … and at a time that suits you (C1P1)

The practitioners saw themselves as supporting the sales staff in terms of their learning needs because they believed they had a good understanding of learners’ needs. This is evidenced when the practitioners described the design of the m-learning podcasts in terms of content,
duration and the technology chosen. For example, the practitioners believed that learners preferred m-learning podcasts that were short in duration (able to be read or viewed within minutes), relevant to their jobs, easy to access and readily available. From a technology perspective, to make it easy for the learners to gain access to m-learning, the practitioners leveraged the existing technologies the learners currently used on a daily basis. The practitioners used the learners’ existing iPhone’s in-built functionality and internet connectivity to allow the learners to access, view and/or listen to m-learning podcasts at different times and places of their choice. The practitioners also used the company’s existing configuration and network connectivity with the learners’ iPhones to automate the implementation of an application that provided easy access to the m-learning podcasts. As previously mentioned, this application opened the YouTube page where all m-learning podcasts were stored. The application was automatically loaded onto the iPhones of all the learners when the initiative was implemented “without [the learners] having to do anything” (C1P1).

We had the ability to push out essentially an app [application] or an icon onto everyone’s iPhone ... Having it pushed to everyone’s phone without them having to do anything certainly sped up our adoption. You pick up your phone and ... you have an app there that says [Company A m-learning podcasts], which should become front of mind. (C1P1)

Even if the application was deleted, the application would be reloaded on to the learners’ iPhones automatically every time the learners’ iPhone was connected to the company’s network. The practitioners developed the application in this way because they believed that learners used their iPhones frequently as part of their work, therefore having the application on the learners’ iPhones would constantly remind them about the m-learning podcasts.

You can delete it but it [m-learning application] gets pushed back on your phone again. So, there is no escaping it. (C1P2)

The practitioners saw their role as improving the productivity of sales staff by providing staff with easy access to training content through their iPhones. The practitioners also perceived m-learning as a suitable method to deliver training to sales staff because they spend a significant amount of time travelling as part of their work.

They’re [sales staff] not sitting at their desk all day, they are out there meeting people, looking at sites. (C1P2)

5.3.2 Theme 2: Practice work of practitioners

This theme examines the practices of the practitioners, their interactions with stakeholders and how their practices allow them to cohere as a Community of Practice. This includes analysing relations among practitioners, their perspectives on expertise and timelines and interactions with stakeholders.

5.3.2.1 Having existing working relationships

The practitioners had to collaborate and work closely to meet the demands of the sponsor to rapidly develop and implement the initiative and frequently communicated amongst
themselves to solve problems. Comments from the practitioners indicate they often shared the workload of their day-to-day organisational and practitioner roles to manage the increased workload while they were developing and implementing the initiative.

Like we seem to do with a lot of things, [practitioners share the workload and] alternate the responsibility of presenting at meetings [about the initiative]. (C1P2)

The practice of frequent communication and task sharing amongst practitioners helped them understand each other’s working style, role and workload. This helped them establish and maintain a sense of team cohesion. They described a sense of camaraderie being developed and maintained as they worked closely and carried the practices they established in their day-to-day organisational roles into their practitioner roles. The sense of camaraderie was established before the initiative started because all the practitioners had worked together previously in the existing HR team in their organisational roles.

“He and I [practitioners] work extremely well together. Which makes life a lot easier. Because we get it.” (C1P2)

The practitioners were communicating with each other frequently through face-to-face informal and formal discussions, meetings, phone conversations and emails as part of their organisational role. Frequent communication face-to-face was relatively easy to maintain because they had their working space physically sitting close and within metres of each other. The physical proximity and practice of frequent communication allowed them to maintain a strong sense of camaraderie.

To understand the timing and tasks required to develop and implement the initiative, the practitioners used tools such as a project plan. The project plan was a list of project tasks in a spreadsheet format and included “deadlines” (target dates for task completion), “deliverables” (outcomes of project tasks) and who was responsible for completing the tasks (C1P2).

Originally, we had a project plan spreadsheet we were working off that just gave each of us [practitioners] deliverables and deadlines. (C1P2)

5.3.2.2 Engaging with the sponsor, learners and staff for expertise

Tools such as the project plan were used by the practitioners, not just to manage project tasks amongst themselves, but also to identify key stakeholders they needed to engage and project tasks Marketing and IT had to complete. The use of the project plan and identification of Marketing and IT staff that needed to be engaged, helped the practitioners gain momentum and progress early in the initiative – “That [project plan] really helped us kick things [the initiative] off.” (C1P2)

[The project plan] wasn’t restricted to the HR team; it also included Marketing and IT. (C1P2)

The interactions between the practitioners, Marketing, IT and the NSW State Executive’s personal assistant was characterised by the practitioners seeking specific expertise: they did not have to complete project tasks from these staff. These stakeholders and their interactions
with the practitioners are analysed in section 5.4.4 ‘Stakeholders sharing knowledge with practitioners’.

The interactions between practitioners and stakeholders are mostly informal. A summary of the interaction between practitioners and stakeholders is provided in Figure 5.3. The yellow shaded arrows indicate a tendency for the communication to come from one group to another. Where the shaded arrows are pointing in both directions, this indicates that the communication and interaction tends to be free-flowing and moving in both directions between practitioners and stakeholders.

Figure 5.3: Practitioner interactions with stakeholders

In their dealings with the sponsor, the practitioners provided reports, project updates and discussed issues. Often these discussions were conducted informally. The sponsor provided the practitioners with their interpretation of work priorities and provided guidance on an as-required basis. Comments from the practitioners indicate that the sponsor also acted as a conduit between senior management and them – “[the sponsor was] more of a conduit with really senior leaders in our business” (C1P2). However, according to Practitioner 2 the reliance on the sponsor to engage with senior managers did not seem to be effective. When Practitioner 2 reflected on how the initiative could be improved, he emphasised that a greater level of senior manager support for the initiative would have helped the initiative in terms of communicating and encouraging learners to use the m-learning podcasts.

Support from our leaders and managers would have been really helpful … general communication and support from the business [leaders] wasn't necessarily there. (C1P2)
As part of their existing, direct reporting relationship to the HR Director, who was also the sponsor, the practitioners regularly engaged with him. This practice of regularly engaging with the sponsor continued in their practitioner roles during development and implementation of the initiative through formal and informal meetings face-to-face, discussions by phone and via emails. The practitioners had relatively easy access to the sponsor to have face-to-face discussions on a regular and as-required basis because they were physically co-located on the same floor and in the same office building.

The practitioners adopted practices that promoted frequent engagement and communication with the sponsor as important to information flow and knowledge exchange between them. They established a positive relationship with the sponsor through their practices of regularly engaging and communicating with the sponsor and providing the sponsor with regular updates about the initiative. This was evidenced when Practitioners 1 and 2 described the sponsor as “supportive”, providing “a lot of insight” and “guidance”.

[The sponsor] is really good because they give us a lot of insight ... They’ve given us a lot of feedback, support, guidance and we’ve needed it. (C1P2)

[C1S1] provided guidance and deadlines with regards to when we need to get this [m-learning podcast] content together. (C1P1)

The practitioners focused their efforts on engaging the sponsor and dedicated a relatively low level of effort on the engagement of learners and senior managers. Practitioner 1, for example, described their relationship with learners as “non-existent”. The practitioners interacted with the learners only on an as-required basis, usually once a month as an additional agenda item to the existing monthly sales meetings held for the whole of NSW.

If we do this again we’d probably look at more structure, [a] more regular approach rather than haphazard ... re-focus on that communication [to learners] and make it a regular reminder that [m-learning’s] there. (C1P1)

The way practitioners interacted with learners is characterised by providing learners with training and HR services as part of their day-to-day organisational and practitioner roles. The practitioners often used one way-communication to communicate with the learner via email or presentations to a group of learners at their monthly meetings. The tendency to communicate to the learners in this one-way manner may be because such communication takes less effort for practitioners, as compared to managing two-way dialogue with learners. This may also be reflective of practitioners’ struggle with the heavy workload associated with balancing their organisational day-to-day and practitioner roles. However, when the practitioners did not engage frequently with learners and senior managers, they did not experience a good level of support or feedback from them.

5.3.2.3 Negotiating timelines

The practitioners engaged the sponsor regularly and were also skilled in negotiating important decisions with the sponsor, such as the initiative implementation times. The initial implementation date was set by the sponsors with little input from the practitioners when the initiative was first established. According to the practitioners, they did not have sufficient time
to dedicate to the initiative while performing their day-to-day organisational role concurrently, which caused delays in the implementation.

It's just really hard to devote time and energy to it [the initiative] and there have been delays in us rolling things out. Purely because of that time factor (C1P2).

The practitioners commented that because of their heavy workload, they could not meet the January 2016 implementation timeline imposed by the sponsors. Therefore, they negotiated a delay in the implementation of the first m-learning podcast. The sponsor’s imposed implementation timelines put the practitioners under pressure and resulted in the latter “rushing” the project work (C1P2). This was also a source of stress amongst practitioners. Practitioner 2, for example, described the initiative as a “high-pressure exercise”.

We were briefed on the whole strategy in December 2015. Timing was a bit of a struggle. Basically, we were told we had to roll it out in January 2016 ... we rushed through things and just tried to make them work. (C1P2)

To help manage expectations with regards to implementation, practitioners established regular face-to-face meetings with the sponsor. Through regular meetings, practitioners established and maintained a shared understanding with sponsors about the issues causing delays in implementation. This common understanding of the issues impeding progress allowed practitioners to negotiate the delay in the implementation of the first m-learning podcast with the sponsor.

5.3.3 Summary: Practitioners’ perspective

Practitioners were tasked by the sponsor to develop and implement the m-learning initiative at a rapid-pace that was time-bound. The rapid implementation timelines imposed by the sponsor was partly a reflection of organisational constraints. The organisational focus on cost and revenue impacted the practitioners. They had to be skilled to overcome key issues such as securing sufficient expertise to complete technical tasks and managing an increased workload associated with performing their dual roles. The way practitioners managed their workload and pressure associated with the initiative was to work collaboratively and cohesively as a team, and to share knowledge with each other and stakeholders. Practitioners problem solved together and with stakeholders to complete project tasks, often on an informal and as-required basis. They managed organisational constraints by liaising and engaging with stakeholders to provide expertise to complete project tasks and negotiated delays in the initiative implementation timelines with the sponsor.

Formation of the project team was achieved quickly. This is because practitioners had previously worked together in the same HR Department, prior to commencement of the initiative, and were thus familiar with each other’s working style. They also sat in close physical proximity, within a few metres of each other, making it easier to collaborate face-to-face on tasks associated with both their day-to-day organisational and practitioner roles.

When the practitioners reflected on m-learning and their role, they focused on the difficulties associated with balancing dual organisational practitioner roles, not clearly defined. Practitioners viewed their role as meeting the sponsors’ requirements, supporting the learning
needs and productivity of sales staff and supporting the company’s priority in generating revenue. Their practices reflected working as a team amongst themselves and stakeholders in an informal manner. Their work on the initiative was time-bound and they built strong interpersonal connections with stakeholders to gain their support to achieving the sponsor’s requirements, reflected in the initiative objectives of supporting a cost-effective and time-efficient way of developing and delivering training and better support for sales staff with learning needs.

5.4  Theme 3: Stakeholders’ perspective

This section explores the stakeholders’ perspective and how they conceptualise m-learning and their role and how they interact with practitioners. The stakeholder theme examined here was derived using the same approach as the previous two practitioner themes and addresses research question 2 – How do m-learning stakeholders, such as sponsors and learners, conceptualise m-learning? Four stakeholder groups are examined in this case because of the key role they play in the initiative. They will be explored in the following order: sponsor; learners; executive managers; and stakeholders sharing knowledge with practitioners.

5.4.1 Sponsors’ perspective

This section examines the sponsor’s perspective and is the first of four, m-learning stakeholders analysed in this case. The sponsor will be analysed in terms of how he perceived his role and how his worldview may have influenced his interactions and relationship with practitioners. Data generated from interviewing the sponsor defined several theoretical categories (Table 5.4).

<table>
<thead>
<tr>
<th>Theme 3</th>
<th>Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor’s perspective</td>
<td>1. Taking management control</td>
</tr>
<tr>
<td></td>
<td>2. Being focused on cost and revenue</td>
</tr>
<tr>
<td></td>
<td>3. Perceiving m-learning as supplementing face-to-face training</td>
</tr>
<tr>
<td></td>
<td>4. Supporting the learning needs of sales staff</td>
</tr>
</tbody>
</table>

5.4.1.1 Taking management control

The sponsor had a management control focus, and while he delegated the development and implementation of the initiative to the practitioners, he continuously monitored and intervened when he felt intervention was required. He saw a key part of both his HR day-to-day operational management and sponsor roles as delegating project tasks to the practitioners. Delegation was based on the sponsor’s view of the expertise, skills and capability of practitioners. He perceived them as having the required capability to deliver the initiative and therefore allowed them to work through the initiative details and self-prioritise their work. He also perceived the practitioners’ role as delivering project tasks, once they were given the direction to implement the m-learning initiative.
[It’s] an autonomous relationship ... Once the strategy is set ... to try podcasting. [The practitioners can] do [their] best or do [their] worst as the case may be. It’s very autonomous after that. (C1S1)

Maintaining management oversight of the practitioners was a key concern for the sponsor as he intervened when he perceived the practitioners as not prioritising their day-to-day HR tasks over project tasks. This is illustrated when the sponsor intervened and reminded the practitioners that the initiative was only one training modality and that the company had other training modalities that the practitioners needed to support, including face-to-face training and e-learning. This reflected the sponsor’s management control focus, which was to not just delegate but also monitor, prioritise and intervene when he felt the practitioners were not focused on the right priorities.

It does take the team a little time to pull it together [m-learning podcasts] and whether that’s three–four hours spent on a podcast or a couple of hours that could be spent on something else, there is an opportunity cost, and for that reason we need to be cognisant of where does it [m-learning] fit alongside our other learning, whether it be face-to-face training or [e-learning] training or anything like that. (C1S1)

5.4.1.2 Being focused on cost and revenue

While a management control focus was important to the sponsor, managing costs and working within budgets was also a key motivator in sponsor’s practice. The sponsor was commercially pragmatic due to the company’s focus on revenue generation, and effective control of budgets and costs. The sponsor described the monetary control of the budget as a key driver for HR, as well as all the executive managers in the company. They provided guidance to practitioners about company strategy at the national level, including cost and revenue focus.

While we are a team, I sit at the national strategic level and so I will give them [practitioners] guidance on what’s coming down from above. (C1S1)

In accordance with the cost control focus, the sponsor was pleased that the m-learning initiative was not expensive. This is because they perceived the practitioners as having the technical skills and expertise to deliver the initiative in-house with no additional investment required in engaging third party consultants.

At the end of the day, I control the budget. We are very much driven by how much money we have in the pot and how we spend it ... [the m-learning initiative] wasn’t very expensive. It’s not cost prohibitive. You don’t have to engage third party consultants. (C1S1)

However, the sponsor’s focus on cost and revenue had a significant influence on practitioners. For example, the Learning and Development function in HR had a limited budget for developing and delivering training. According to the sponsor, m-learning was the preferred method for delivering training from a cost-reduction perspective because once recorded they could be accessed many times by many learners without incurring additional costs. When the sponsor compared delivering training using m-learning to face-to-face training, he described face-to-
face training as high cost compared to m-learning. Furthermore, the latter was perceived by the sponsor as taking less time and effort to produce, compared to face-to-face training.

The other objective was that it [m-learning] saves time. Time taken to create podcasts is less than when producing face-to-face training sessions. (C1S1)

The m-learning initiative was perceived by the sponsor as a pragmatic solution to address the issue of training a growing number of staff in the company with the same number of staff in the Learning and Development team.

With [the company’s] growth comes a challenge of capacity within the Learning and Development team, which has not grown at all and so there’s not as much capacity to run face-to-face [training] sessions. (C1S1)

The sponsor was also concerned that while there was a commercial imperative to manage costs, this constrained resourcing options available to the company. The sponsor recognised that the HR Department had not delivered m-learning training previously, and that its staff constituted HR generalists with a small proportion of their time allocated to learning and development work. Despite the existing HR staff not having delivered m-learning training in the past, the sponsor progressed with resourcing the initiative with existing HR staff because he perceived this as a commercially pragmatic way to develop and implement m-learning.

[We’ve] been playing around with podcasts for a while but didn’t really action anything as it’s a new mechanism for all of the L&D [Learning and Development] team and the team is really our HR generalists adding L&D to their title and like 20% of what we do. (C1S1)

Even though the sponsor recognised that the HR staff in-house was capacity constrained, the sponsor conceptualised the effort involved in the development and implementation of the initiative as “quick”, “easy” and technically simple. The sponsor’s perception of the efforts required to develop and implement the initiative reflected their technology focus. The sponsor thus made a connection between ease of development and implementation with the technical competencies and knowledge of the IT staff in the company. They also made a connection between speed and ease of implementation.

We have very experienced [people] on the IT side. It was easy to implement. It didn’t take us long to get across the mechanisms [technologies] ... Our speed to our own internal market was productive and quick. The implementation was therefore very easy. (C1S1)

The sponsor proceeded to delegate the initiative to the existing staff in Learning and Development in the HR Department, with the expectation that practitioners would develop and implement the initiative in addition to their existing workload. The sponsor delegated project tasks to Practitioner 1, because he believed that Practitioner 1 was personally interested in m-learning podcast development, and had the capability to develop and implement m-learning.
At the end of the day, having someone in the L&D team that has the capability, and quite frankly the interest ... You really need someone like that [C1P1] on the team. (C1S1)

The practitioners’ decision to leverage existing iPhones to access m-learning training material, because most sales staff used iPhones – “90% of staff” (according to Practitioner 1), was supported by the sponsor. This was in line with their cost focus and commercial pragmatism. They perceived using existing iPhones as providing learners with an easy and low-cost way to access m-learning training content.

The company’s high staff turnover was emphasised by the sponsor as an issue. This was because, with high staff turnover, there was a continual demand on the HR Department to train new staff. The ongoing need to engage and train staff was described by the sponsor as difficult and “challenging”.

The turnover in this place is around 27% and 33% in our organisation in any given one year, so that’s par for the course in this industry, but it’s higher than some industries. So therefore, you’re continually introducing things to a new audience. That’s challenging, to keep engaging people. (C1S1)

5.4.1.3 Perceiving m-learning as supplementing face-to-face training

Even though the sponsor perceived m-learning as a pragmatic training solution, he also perceived this type of learning as supplementary to face-to-face and e-learning training and therefore not a replacement for these training delivery modes. He also perceived m-learning as a “support function” and providing a mechanism for getting more out of face-to-face training by reinforcing the training material covered in face-to-face training in an easy to access manner. This is because the sponsor perceived m-learning as an ‘on-demand’ training option for sales staff and m-learning podcasts could be a tool for learners to access training for those that could not attend face-to-face training.

Podcasts became a mechanism for re-embedding the face-to-face training that was delivered. It’s a good way for people who couldn’t attend the training to hear the highlights and for those that attended a reminder, so they didn’t forget what they learnt. (C1S1)

While m-learning was perceived positively by the sponsor, he saw face-to-face training as valuable in building working relationships, allowing staff to role-play practical scenarios and being a preferred mode of training delivery for office-based staff. The sponsor drew a connection between the learners establishing relationships with the interactions they have in face-to-face training. This was viewed as important to the sponsor, as he described face-to-face training as being valuable in helping staff build relationships not possible with m-learning. He emphasised the value of face-to-face relationships in the company as a way to justify delivering training face-to-face in the past – “learning has been delivered traditionally via face-to-face because we are a relationship business” (C1S1).
The sponsor preferred face-to-face training over m-learning because this allowed staff to learn through practical scenarios and role play. He described face-to-face training as a common approach and this is how staff gain some of their “best learning” (C1S1).

Almost all of our face-to-face learning is literally practical where you will learn from theory behind how to counter client objections, and the next thing you know, you’ll be up there road-testing it with a pretend client and actually giving it a go. (C1S1)

The preference for face-to-face training by the sponsor may have been influenced by the way some staff in the company worked within the office environment. The sponsor described office-based staff as being used to working in an environment where engagement was mostly face-to-face and therefore having an expectation that training would be delivered face-to-face.

They’re a group that are accustomed to engaging and operating and working within an office environment. Their expectation around learning was that it’s more face-to-face. (C1S1)

M-learning was described by the sponsor as “quite isolating” and therefore not supporting facilitated learning with quality discussion. The sponsor described this as a broader challenge for all forms of mobile learning and raises the question – how do you create a “mobile learning forum” that allows learners to establish relationships? As the sponsor reflected on the m-learning initiative he focused on how m-learning lacked the ability for staff to interact with each other and enter into quality discussions while accessing training content.

We are a relationship-driven business and a podcast can be quite isolating and not something you can do together, and therefore it’s not learning or facilitating learning where you get quality discussion … We as a business are probably not there yet to learn in isolation. (C1S1)

While face-to-face training provided the benefits described above, the sponsor also emphasised the disadvantages of face-to-face training and that his Learning and Development function “is looking at how to deliver training in a way that is consumable in a faster time sequence and more of a pull strategy, rather than – you must do the learning on this date or within a location” (C1S1). He commented that face-to-face training was a time-consuming way to provide training to sales staff that spent most of their time with clients who demanded a lot of attention – “client business doesn’t stop to allow for learning days” (C1S1).

5.4.1.4 Supporting the learning needs of sales staff

While the sponsor emphasised the benefits of face-to-face training, he also described sales staff as highly focused on achieving sales targets but not self-motivated to learn or engage with training content. The sponsor was concerned by the learners’ lack of self-motivation and lack of appreciation of training benefits because delivering m-learning relied on sales staff being self-motivated and voluntarily accessing m-learning material. He described learners as “hating” the impost training had on their time as they were always busy or “time poor” and did not see the benefits of training.
[sales staff] are not self-motivated learners ... [sales staff] hate – in terms of it’s always one other thing we’re adding to their plate of what time is already precious to them ... it’s a challenge in a time-poor audience, as these guys don’t learn for the sake of loving learning. (C1S1)

The role of practitioners was perceived by the sponsor as supporting the company’s focus on revenue generation by delivering training to sales staff in a way that minimised disruption. The sponsor emphasised that providing adequate time for sales staff to build relationships with their clients was crucial to allowing them to do their jobs and meet individual and company sales targets. Therefore, spending time in face-to-face training sessions was perceived negatively – as time spent by sales staff in training was taking time away from seeing clients face-to-face and closing sales deals, which provided direct remuneration benefits in the form of commissions earned.

Remuneration comes from commissions earned, so when someone is asked to forgo time with the client, which is revenue-earning time, by sitting in a training session, then they usually don’t love you for it. (C1S1)

The sponsor saw m-learning as a way to improve the productivity of sales staff. This is evidenced when the sponsor emphasised the need to for training information to be “online” and “on-demand” to fulfil learners’ needs to access training information as and when required (C1S1).

Trying to look at audience type to pull the [training] information as and when they [learners] need it – online, on-demand content as they see fit. (C1S1)

M-learning was perceived by the sponsor as a way of providing training that did not disrupt the learners from doing their jobs and being productive while they were travelling or otherwise unproductive. He used the term “dead time” to refer to the time sales staff spent travelling between work and home and between client meetings. Thus utilising unproductive “dead time” was set as the top priority for the initiative by the sponsor. Furthermore, the sponsor emphasised travel time as a major constraint in being able to deliver face-to-face training to learners in different locations. M-learning was therefore perceived by the sponsor as an efficient way to deliver training across geographies without the need for learners to travel to access training content.

The ability to capture sales staff in a face-to-face training session or within the office is so limited. So, it [m-learning] was a mechanism to access sales staff during periods where they were more willing to take in the learning without it impacting on their fee structure, because we are a sales-driven business. (C1S1)

5.4.2 Learners’ perspective

This section examines the learners’ perspective and constitutes the second of four m-learning stakeholders analysed in this case. An in-depth analysis is presented in this section in terms of how the learners of m-learning perceived their role, and how their worldview may have influenced their interactions and relationship with practitioners. Data from interviewing several learners (C1L1, C1L2 and C1L3) defined several theoretical categories (Table 5.5).
Table 5.5: Theoretical categories – Learners’ perspective

<table>
<thead>
<tr>
<th>Theme 3</th>
<th>Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners’ perspective</td>
<td>1. Learners’ training needs being supported</td>
</tr>
<tr>
<td></td>
<td>2. Learners perceiving m-learning positively</td>
</tr>
<tr>
<td></td>
<td>3. Learners having a positive view of the practitioners’ work</td>
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</table>

5.4.2.1 Learners’ training needs being supported

The learners believed practitioners understood their training needs in terms of how to improve their careers and gaining a competitive edge in the real estate industry. For example, Learner 2 praised practitioners and provided an example of a m-learning podcast that could help staff in potentially getting a promotion within the company.

People are always trying to find out “how can I better my career?” So, they [practitioners] do understand the needs of the employees in that respect ... I think that was a smart tactic or a smart, effective podcast. A lot of people do come into the business wanting to get a promotion. (C1L2)

Learners 1 and 3 emphasised that training was important to them. This is because they worked in the real estate industry, a highly competitive industry that required them to continuously learn and improve to gain “an edge” on their competitors (C1L3).

Especially in real estate, you’re always trying to learn and always trying to get an edge on your competitors. It’s quite a competitive industry that we’re in. (C1L3)

It would be good to have more professional development training. Especially within our industry. (C1L1)

The ease of access to training material via iPhones was emphasised as important to the learners. They focused on how m-learning was easy to use and provided them with easy access to information. For example, Learner 1 commented that using m-learning on his iPhone was easier than accessing training content using a desktop or laptop computer.

It makes it easier for people to learn from their iPhone, rather than having to sit at your desk and log on and look at something. It’s easy. (C1L1)

The on-demand capability of m-learning was also important to learners. Because of the busy nature of sales staff’s jobs, learners valued the high accessibility of training content delivered using m-learning. They also commented that the m-learning initiative achieved its objective in terms of providing relevant information to them quickly and emphasised that accessing useful information quickly was important.

It has hit the objectives in terms of quick, timely, purposeful information for all staff. Some people want to find out information quickly ... That educational format of these podcasts online, it sort of hit that target for staff and colleagues to be able to access
this information … a form of education that anyone can access anywhere … at any time, you don’t have to wait. (C1L2)

M-learning was perceived by some learners as being targeted at new and junior staff. Other learners were not sure what level of staff seniority m-learning podcasts were targeting and suggested that senior staff would not use m-learning.

In terms of the users of these podcasts, it might only suit a certain number of people within the business. I know in my team a lot of senior people might not even think to use these podcasts. The podcasts are generally only focused towards new starters in the business or those that have been here for one to two years. (C1L2)

They may have targeted it [m-learning] towards younger roles in the business or newer roles in the business. Not sure. (C1L1)

5.4.2.2 Learners perceiving m-learning positively

In addition to seeing their training needs being supported, learners perceived m-learning positively. Learner 3 commented that m-learning was relevant to their jobs because it was “company specific” and a positive “push to continue [his] learning”. Furthermore, Learner 3 described m-learning as “a no-brainer”, referring to the obvious benefits m-learning provided such as easy access to training content, because it was “pushed” on the mobile phones of sales staff (C1L3).

Once it turned up on the phone, it pushed us all to learn and because it was … company specific, it was a bit of a no-brainer. (C1L3)

Some learners were familiar with m-learning, viewing m-learning podcasts such as TED talks in their personal time. These learners believed that all the employees in the company would benefit from m-learning based on their personal experience viewing other podcasts.

Listening to podcasts, whether it be TED talks [or other podcasts], I find them useful personally. If [Company A] continues with this form of learning, I think it would be positive for all employees. (C1L2)

On the other hand, some learners valued face-to-face training and expressed a preference for such training over m-learning because it allowed for personal and social interaction. These learners emphasised that with face-to-face training, the learners could ask more questions and gain a better understanding of training content.

Personally, I probably [prefer] face-to-face [training]. You have the ability to ask more questions. You pick up on more of the responses due to the behavioural. Just talking face to face, I personally like and understand the message a lot better. (C1L2)

Even though there was a preference for face-to-face interaction and training, the busy work environment within the company often made it difficult to interact face to face. Some learners acknowledged that opportunities for such interaction and training were limited, because it was difficult to find the time to interact directly with colleagues, managers and trainers because staff were often too busy.
It’s always hard to actually get time and sit down with the person you want to speak to – whether it be your boss, whether it be colleagues. (C1L2)

The sponsors’ and practitioners’ perceptions of learners, as being time poor and focused on sales commissions, were consistent with how learners described themselves as a difficult group to engage because they were busy in their sales-focused roles. The learners emphasised the nature of their work as busy and requiring a lot of travel to see clients, which limited available time for training.

I know that [sales staff] aren’t the easiest to deal with or the easiest of people to pin down, because we very much are time-focused, and time is money to us … half the time [sales staff are] not in the office, we’re out and about. (C1L3)

Everyone [sales staff] is always busy. (C1L2)

Contrary to the sponsor describing learners as not motivated, Learner 1 commented “there’s probably more people who are proactive [learners]” (C1L1). Not only did learners want more training, they wanted up-to-date training material accessible anywhere and when they required it. Learner 1 compared m-learning to e-learning provided by the company. He preferred m-learning because he could access the material via their phones without having to be at their desk using a (desktop) computer. Also, m-learning podcasts were described as similar to “a daily live feed” in providing “live and current” information, unlike e-learning training that tended to include more static and outdated information.

[With current e-learning training] you have to be at your desktop to log into it … you should be able to get that on your phone. The idea of a podcast is like a daily live feed, so having something live and current. (C1L1)

5.4.2.3 Learners having a positive view of the practitioners’ work

The positive perceptions learners had of m-learning may be related to the positive interactions some learners had with practitioners. These learners recognised the significant effort practitioners put into producing m-learning training content. They valued practitioners’ efforts in engaging experienced staff to feature in m-learning podcasts, talking about topics that were relevant to their jobs.

I think the relationship’s good. They [the practitioners] really tried to relate the podcasts back to what we do … They tried really hard to pin us down and in particular the older more experienced guys they got a good job of getting. (C1L3)

It’s [the learners’ relationship with the practitioners] been positive. (C1L2)

However, not all learners had a relationship with practitioners; nor did they all see the need to interact or have a relationship with them. For example, Learner 1 did not believe a relationship between learners and the practitioners was required, and he did not personally interact with practitioners. This could be because sales staff prioritised sales-focused activities over interacting with practitioners to improve their training. This view could also be influenced by the limited capacity and effort practitioners put into engaging with learners.
5.4.3 Using executive managers to motivate learners

Based on comments from research participants, the participation of executive managers was identified as important in motivating staff to use m-learning. Learners emphasised that senior management involvement in m-learning was a motivator for learners to adopt m-learning. Learner 2 commented that there was a need for practitioners to take “a more targeted approach” (C1L2) with more interaction and engagement by practitioners with senior managers, to encourage more learners to adopt m-learning. Some learners suggested that face-to-face engagement with individual sales teams at their weekly meetings or with product line management, talking about how m-learning related to the learners’ sales role would have encouraged more learners to adopt it. The learners suggested that if the practitioners targeted the managers and their sales teams, more learners would access m-learning podcasts.

HR could have come up to each individual team’s weekly meetings and say “guys, there’s a podcast on this, I know for some of you in this role this would suit you” … There could have been more awareness or more interaction from [practitioners] … with each individual or each product line manager [at senior management level]. (C1L2)

When learners described a need for a “figurehead” they were describing not just associating a senior manager’s title with m-learning but having senior managers feature in the m-learning podcasts and sharing stories about their career. This was emphasised by the learners as important to relate to young junior staff so that, by listening to the m-learning podcasts, they could learn and aspire to reach the ranks of senior management in the company.

To take it to the next level … someone [needs] to be the figurehead of it all … get a couple of the respected guys in the business to really drive that and to be a part of [m-learning] … the top brass … senior heads of department … that’s how you can really relate back to the younger guys. (C1L3)

Asking those key senior people to give a podcast could be a better approach. (C1L2)

Comments from learners indicate that practitioners should put more effort into recruiting executive managers as learners and to vocally support m-learning to motivate more learners to adopt m-learning. Without building greater awareness and more interaction between practitioners and managers amongst learners, Learner 2 commented that many sales staff had not utilised m-learning – “I’m guessing there’s still a lot of employees or colleagues in the business that haven’t utilised [m-learning] (C1L2)”. In a similar vein, Learner 1 suggested that practitioners should have involved senior management and “made individual team leaders be responsible for their team [to use m-learning]” (C2L1).

5.4.4 Stakeholders sharing knowledge with practitioners

This section examines stakeholders providing expertise to practitioners and this constitutes the fourth and final m-learning stakeholder analysed in this case. As this research is mainly focused on practitioners, these stakeholders are examined from the practitioners’ perspective.

IT and Marketing staff and the State Executive’s personal assistant were engaged by practitioners as stakeholders when their expertise was required on an as-needs basis. Their
involvement was a small part of the initiative, but highly important to practitioners, as they provided project management, marketing and technology expertise. IT and Marketing staff and the State Executive’s personal assistant were not available to be interviewed as part of this research; however, their contribution and perspective is explored from the practitioners’ viewpoint.

When the practitioners required expertise, they did not possess they engaged with company resources. Practitioners lacked expertise in m-learning podcast recording, marketing and project management and therefore spent significant time liaising with staff from the IT Department, Marketing Department and with the NSW State Executive’s personal assistant. Practitioner 1 had some technical expertise and technical skills in m-learning podcast editing tools and found their involvement in the m-learning initiative required little effort technically.

My involvement was to take the recordings and get them online and edit them, and I’ve got some easy editing tools between Adobe Premier and an audio tool called Audacity. For me it was only a short amount of time [required to work on the initiative]. (C1P1)

However, other practitioners lacked expertise to complete technical tasks. For example, Practitioner 2 struggled technically, “not … knowing how to record a podcast.” (C1P2)

The IT Department and State Executive’s personal assistant provided technical expertise. Marketing staff provided practitioners with marketing and project management expertise. This was important to practitioners to increase the number of learners accessing m-learning. Branding and marketing of the m-learning initiative was emphasised by practitioners as “the most successful aspects” of implementation.

Probably the most successful aspects of the implementation process would be the branding around the strategy. A lot of that comes down to marketing … If we hadn’t had the logo or the name or anything like that; I think it would have not taken off. (C1P2)

Due to the lack of marketing expertise amongst practitioners, they described the task of promoting m-learning to learners as difficult and emphasised their high reliance on marketing expertise.

I don’t have a creative breath in my body, nor does [the other member of the m-learning project team]. That was a big part of it, particularly with the podcasts – making them look good and making them seem like something that people would get something out of was very challenging … We really needed the assistance of Marketing. (C1P2)

Engaging other staff was a key challenge for practitioners as they relied on IT and Marketing staff and the NSW state Executive’s personal assistant’s best endeavours in completing project tasks. The practitioners had difficulty managing the initiative without clarity on the roles and tasks people were taking on as part of the initiative.

[Practitioners] struggled to find a balance between everybody’s roles to make sure that everything was being done … It was not without its challenges on the project management front. (C1P2)
The abovementioned stakeholders were willing to be involved in the initiative, but only as project managers to help direct the initiative and “tell people what to do”. They were not willing however to put significant time into completing tasks required to implement m-learning. In response to the lack of commitment by the NSW State Executive’s personal assistant to complete project tasks, practitioners expressed their despair.

A lot of people ... decided that they were the project managers ... there to tell people what to do but they were not going to be involved in executing it, and it was a particular challenge ... [The NSW State Executive’s personal assistant said] “I’m the project manager and you guys need to do the doing”. We [practitioners] were like “oh my god”. (C1P2)

Similarly, the Marketing Department perceived its role as project managing the marketing side of the initiative, without extra responsibility.

They [the Marketing Department] were all excited about helping, but again thought they were just project managing the marketing and really didn’t want to do the doing. (C1P2)

5.4.5 Summary: Stakeholders’ perspective

Analysis of m-learning stakeholders confirms the importance of the sponsor, learners and executive managers as important stakeholders in m-learning development and implementation. Interestingly, another group of stakeholders emerged from comments by practitioners – those that provided expertise and shared knowledge with practitioners including personnel from Marketing and IT and the State Executive’s personal assistant.

The sponsor was commercially pragmatic with a focus on strong management and cost control. The sponsor’s management control significantly influenced practitioners because he was the line manager of the practitioners in their day-to-day organisational role. The practitioners’ work priorities were determined by the sponsor. Even though the sponsor put pressure on practitioners to rapidly implement the initiative, they were expected to do so while also maintaining a focus on day-to-day HR work. When practitioners were perceived by the sponsor as prioritising work associated with the m-learning initiative over their HR work, he intervened and reverted their focus back to HR work.

In addition to management control, the sponsor also had a strong focus on cost control which significantly influenced practitioners because there was no additional funding allocated to the m-learning initiative. This meant practitioners had to use the expertise and technology that resided in the company in-house. Furthermore, in their day-to-day HR role, they had to support the company and train more staff, due to the company’s growth and high rates of staff turnover, with no increase in the HR budget or staff.

The sponsor also emphasised the importance of training content that was relevant to the staff’s jobs, and the importance of dialogue and communication with other staff as part of their learning. However, this awareness did not translate into a learning strategy or plan. This was limited to no forward project planning by the sponsor, partly due to their perception that development and implementation were “easy”. This perception was based on the sponsor’s
view that practitioners had in-house expertise to develop and implement the initiative and that the technology aspect of the initiative was simple. Practitioners (especially Practitioner 2) had a contrary view to that of the sponsor and perceived development and implementation as stressful and difficult (section 5.3).

Improving the productivity of learners and supplementing face-to-face training with m-learning was also a focus for the sponsor. M-learning was perceived as improving the productivity of learners while minimising disruption to the learners in their focus on closing sales and contributing to the company’s revenue. Practitioners also saw the importance of their role as helping to deliver the sponsor’s objectives. This could be evidenced when the practitioners used similar language to the sponsor in describing their role and objectives when delivering m-learning.

The learners seemed to have less influence over the practitioners as compared to the sponsor. The learners were focused on selling to achieve their sales targets and earn their commissions. They were compelled to do training as part of their role and saw m-learning as supplementary to generating revenue to achieve their sales targets. Learners were aware they were time poor, focused on sales activities and were motivated by sales commissions. This is in keeping with how the sponsor and practitioners described learners. However, contrary to both the sponsor’s and practitioners’ view of learners (i.e. that they were not motivated), some learners described themselves as proactive. Despite their busy sales role, learners emphasised the importance of training and wanted more training due to the nature of the competitive industry in which they operated. Learners valued face-to-face training and expressed their preference for such training as it allowed for social interaction and a better understanding of training content.

However, learners acknowledged that the busy work environment within the company often made it difficult to interact face to face. They commented that more learners would use m-learning if practitioners engaged more with them and their managers via meetings. Furthermore, learners commented that if more senior managers supported and featured in m-learning podcasts, more learners would use m-learning. Even though they saw the launch of the initial m-learning podcasts as effective, they saw m-learning podcasts as limited in training effectiveness in the long term. This was because learners observed a decline in the quality of the m-learning training material as time progressed. Coupled with a decline in communications and training later in the calendar year, some learners forgot about m-learning as they became busier, focusing on achieving sales targets and earning their commissions. On the other hand, some felt that m-learning supported their learning. Other learners had a good relationship with practitioners and commented that practitioners understood their training needs.

5.5 Discussion

In this section, the findings from this case are discussed in relation to Research Question 3 – How does a Community of Practice perspective provide insights into organisational m-learning initiatives? These findings demonstrate that a CoP lens is useful in analysing m-learning initiatives since they are complex social phenomena influenced by how practitioners and stakeholders conceptualise learning. This case also illustrates that the interactions between them resemble CoPs, as they provide a learning and knowledge sharing context in which
practitioners and stakeholders are able to address complex challenges, share knowledge and develop practices in response to bureaucratic contextual factors.

5.5.1 Bureaucratic context

This case demonstrates that m-learning initiatives can be influenced by a company’s bureaucratic context, as bureaucracy imposes organisational constraints and objectives that practitioners and stakeholders must work within to deliver m-learning. This context influences management control focus, reflected in the sponsor’s focus on cost management and revenue generation. The competitive environment in which a company operates also drives organisational constraints, including the need to train staff (supporting the learning needs of sales staff) in a cost-effective and efficient manner. These constraints impacted not just the sponsor of the m-learning initiative in this case but also the practitioners’ ability to adequately staff work activities for m-learning, and access necessary skills and expertise. For example, even though they lacked m-learning experience and technical expertise, practitioners recognised the cost management focus of the sponsor and used in-house resources so as not to incur additional expenditure.

Due to organisational cost constraints, practitioners balanced dual organisational and practitioner roles by liaising and negotiating with stakeholders while carrying out their other roles and responsibilities. Practitioners also quickly formed effective working relationship and established a shared sense of joint enterprise, because they had a pre-existing working relationship amongst themselves and with the sponsor. Pre-existing working relationships with staff in Marketing and IT also helped practitioners informally engage with other staff for expertise on an as-needs basis. This shows that these relationships can help practitioners meet the sponsor’s requirements of delivering m-learning initiative on time and within budget.

Practitioners were skilled and resourceful in working within the company’s bureaucratic context and made efforts to build strong interpersonal connections with stakeholders. This case shows that whilst sponsors may provide objectives for m-learning initiatives, practitioners must nonetheless establish a shared sense of purpose and accountability in managing dual workloads, as well as the potential impact on the functional and timeline objectives of m-learning. To make sense of their role, not clearly defined by the sponsor, practitioners had the autonomy to appropriate formal roles such as ‘project manager’ amongst themselves to describe their day-to-day planning and coordination work associated with m-learning. Taking on a ‘project manager’ role is an example of the strong sense of accountability practitioners displayed to implement m-learning. This example also shows that sponsors who provide practitioners with a level of autonomy, make themselves available to practitioners and are inclined to take on board the concerns of practitioners are more likely to help them manage the challenges of delivering m-learning within the constraints of dual workloads.

This case also demonstrates that when practitioners acknowledge and incorporate into their planning the preferred methods in which learners choose to learn (i.e. through m-learning podcasts featuring senior management) this can establish a strong connection with learners. Learners who felt that their training needs were supported, had a positive view of both practitioners and the m-learning initiative. A salient matter raised in this case is the important role that practitioners have in engaging with stakeholders (especially sponsor and learners).
Practitioners that incorporate into their planning what is important to stakeholders, play an important part in building support for the m-learning initiative.

Bureaucratic contextual factors influencing practitioners and stakeholders, evidenced and discussed in related theoretical categories in this chapter, are summarised in Table 5.6.

Table 5.6: Bureaucratic contextual factors emerging in Case 1

<table>
<thead>
<tr>
<th>Bureaucratic contextual factors</th>
<th>Implications of a bureaucratic context</th>
<th>Related theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational constraints (cost focus)</td>
<td>• Practitioners meeting sponsor’s requirements</td>
<td>Practitioners:</td>
</tr>
<tr>
<td></td>
<td>• M-learning work being time-bound</td>
<td>• Balancing dual organisational roles</td>
</tr>
<tr>
<td></td>
<td>• Practitioners and stakeholders working together in an informal manner</td>
<td>• Meeting the sponsor’s requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Having existing working relationships</td>
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<td></td>
<td></td>
<td>• Negotiating timelines</td>
</tr>
<tr>
<td>Limited m-learning and technical expertise</td>
<td>• Supporting the learning needs of learners (sales staff)</td>
<td>Sponsor:</td>
</tr>
<tr>
<td>Changes to competitive environment</td>
<td></td>
<td>• Taking management control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Being focused on cost and revenue</td>
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</tbody>
</table>

While research participants referred to m-learning as a ‘project’ their comments and practices reflect characteristics of a CoP. This is illustrated by contrasting the characteristics of a CoP and a project team (Table 5.7) and comparing these with evidence from this case in sections 5.5.2 and 5.5.3.

Table 5.7: Characteristics of projects and CoPs

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<tbody>
<tr>
<td>Community of Practice (CoP)</td>
<td>To develop members’ capabilities; to build and exchange knowledge</td>
<td>Members who select themselves</td>
<td>Passion, commitment, and identification with the group’s expertise</td>
<td>As long as there is interest in maintaining the group</td>
</tr>
<tr>
<td>Project team</td>
<td>To accomplish a specific task</td>
<td>Employees assigned by senior management</td>
<td>The project’s milestones and goals</td>
<td>Until the project has been completed</td>
</tr>
</tbody>
</table>

118
5.5.2 What is its purpose and who belongs to the CoP?

Practitioners focused on the development and implementation of the m-learning initiative as well as building capabilities and knowledge to deliver their day-to-day organisational role. They worked closely together, collaborated and shared knowledge and learning in both project tasks and those associated with their organisational role in HR. The practitioners viewed part of their role as meeting the sponsors’ requirements, and supporting the learning needs and productivity of sales staff. They also had to build their capabilities and knowledge to fulfil their practitioner role as part of their day-to-day organisational role. The development of practitioners’ capabilities and knowledge in project management, marketing skills and m-learning technology know-how developed through this initiative, for example, could be applied more broadly in their day-to-day organisational role ongoing.

Even though the sponsor asked the practitioners to implement the m-learning initiative (characteristic of a project, according to Wenger and Snyder 2000); there was an element of self-selection to join the project team because Practitioner 1 also expressed interest and had the relevant technical expertise to contribute to m-learning implementation. This is more a characteristic of CoPs where members work together voluntarily because of their passion, commitment and identification with a CoP (Wenger & Snyder 2000). Furthermore, the sponsor was an integral part of the CoP because their involvement was not simply as a manager of practitioners. The sponsor was a critical resource because he acted as a conduit between practitioners and senior managers and was available to address issues directed to him. Practitioners and the sponsor also shared knowledge and resolved issues through collaboration and discussion.

5.5.3 What holds CoPs together and how long does it last?

Practitioners saw themselves as a collaborative, tight-knit team and expressed commitment, accountability and identification with both the m-learning initiative as well as m-learning more broadly, supporting the company’s training needs as part of their HR role. They worked together in their day-to-day organisational roles in the HR Department while they took on m-learning practitioner roles concurrently. Furthermore, the practitioners described a sense of camaraderie between them. This was critical to maintaining team cohesion, allowed the practitioners to support each other as they managed their dual roles and cohered as a CoP. The sense of camaraderie was established before the initiative started, because all practitioners and the sponsor had worked together previously in the existing HR team in their organisational roles.

A level of interest, expertise and willingness to work on project tasks associated with m-learning and potential further involvement beyond the completion of the m-learning initiative was expressed by practitioners. This could be related to the practitioners’ day-to-day organisational role in the HR Department which includes the ongoing delivery and improvement to staff training. Even though their practitioner role in m-learning stopped after the initiative was completed, they commented that there was ongoing work to develop training programs using mobile technologies (m-learning). This suggests there may be a longer-term commitment to m-learning by practitioners. Comments from the sponsor also back this up.
Furthermore, practitioners engaged in practices and built interpersonal connections with stakeholders that reflect the three characteristics of a CoP and social coherence: mutual engagement, joint enterprise and shared repertoire (Wenger 1998, pp. 72-85). Even though practitioners and stakeholders referred to m-learning implementation as a ‘project’, they engaged in practices reflecting mutual engagement, joint enterprise and shared repertoire which holds the CoP together. As long as these characteristics are evident, practitioners and stakeholders continue as a CoP even after project work has been completed.

5.5.3.1 Mutual engagement

Mutual engagement is defined by Wenger (1998, p. 73) as the first source of coherence of a CoP by the mutual engagement of participants. Mutual engagement refers to the amount and pattern of interactions in which individuals engage with one another that runs deeper than merely having a title or holding a certain position; this engagement is illustrated by the ties that bind individuals and through which they engage in joint enterprise (Harvey et al. 2013).

The practice of frequent face-to-face communication via email and phone with each other and stakeholders helped the establishment of interpersonal relationships between practitioners and stakeholders. Consequently, this helped practitioners establish and maintain mutual engagement. This sense of mutual engagement continued after the completion of the initiative. This may be because they were part of the same HR department and worked together on the initiative as practitioners as well as other matters relating to their operational roles in the HR department. Also, working in close physical proximity helped both practitioners and the sponsor communicate face to face on a regular and adhoc basis in close proximity.

The sense of mutual engagement was important as both practitioners and the sponsor rarely documented m-learning tasks. While practitioners worked closely together, they found balancing dual organisational roles difficult. They balanced the challenges of an increased workload by self-organising, sharing their workload, interacting amongst themselves and liaising with stakeholders such as the sponsor and learners.

The lack of documentation and definition around practitioner and stakeholder roles provided a level of flexibility and autonomy to establish interpersonal connections and negotiate mutual accountability relating to specific tasks associated with the m-learning initiative. The informality in the way practitioners and stakeholders collaborated, and the development of strong interpersonal connections between them, are important characteristics that support their coherence as a CoP.

5.5.3.2 Joint enterprise

The creation of a joint enterprise is the second characteristic of a CoP according to Wenger (1998, p. 77). This is the result of a collective process of negotiation that reflects the full complexity of mutual engagement, identified by the participants, and creates among them relations and accountability that become an integral part of their practice.

The way practitioners conceptualised their role and their efforts in engaging and building connections with stakeholders, demonstrate that the practitioners were not self-contained entities. A “joint enterprise” was created through interpersonal connections between
practitioners and stakeholders. This was established over time as practitioners had many conversations both informally and formally, often in face-to-face meetings, amongst themselves and with stakeholders (especially the sponsor) to make decisions. They did not always agree, but worked together to reconcile differing viewpoints and establish common ground by making decisions collectively and collaboratively over time. The practices of negotiation and finding common ground using informal and formal meetings included negotiation with stakeholders.

Comments from practitioners support the view that it is only as negotiated by the practitioners and stakeholders in the CoP that conditions, resources and demands shape their practices. For example, Practitioner 1 was asked by the sponsor to implement m-learning by developing an application that would run on Android and iPhones. However, Practitioner 1 disagreed with this approach and negotiated an alternative (using YouTube for m-learning podcasts), which was accepted by the sponsor and other practitioners.

Another example of how practitioners negotiated a “joint enterprise” in the CoP is the manner in which they negotiated their practitioner roles, workload and engaged with other staff to access the skills and expertise they lacked to complete project tasks. For example, Practitioner 2 had similar capabilities to a peer HR adviser and they both agreed to share the workload in their operational and project roles to help balance their workloads. Further to sharing their workload, practitioners were also skilled in negotiating a delay in the implementation of the first m-learning podcast with the sponsor alleviating some of the stress associated with rapid implementation of timelines imposed by the sponsor. The practitioners also used their personal relationship with other staff to access their skills and expertise on project tasks because they had no formal authority over other staff outside of the HR Department. These examples demonstrate that through negotiation, practitioners could establish interpersonal relationships and a sense of mutual accountability among those involved in supporting the initiative objective and their day-to-day organisational role of supporting the company’s staff training needs using m-learning.

5.5.3.3 Shared repertoire

Practitioners developed resources such as a working style, the right tools, took action and used artefacts that demonstrated a “shared repertoire”, the third characteristic of a CoP (Wenger 1998, pp. 82-83). Comments from both practitioners and sponsors alike illustrate that over time the joint pursuit of developing and implementing m-learning created resources for negotiating meaning, and supported practitioners and the sponsor to cohere as a CoP.

Tools such as the project plan, emails and presentation material were used by the practitioners to establish a shared repertoire. A project plan was used by practitioners to understand the timing and project tasks that needed to be completed and who would complete them. The project plan was a tool practitioners used to communicate with the sponsor to establish a common understanding of the stakeholders involved and associated tasks, including timelines for completion.

Emails were frequently used by practitioners to exchange information and discuss issues associated with m-learning with stakeholders. They also held regular informal and formal face-
to-face meetings or via telephone, teleconference or videoconference to discuss related issues. These meetings allowed practitioners to quickly address m-learning issues and reconcile different perspectives amongst themselves and stakeholders.

In addition to informal face-to-face discussion, practitioners communicated with the sponsor and learners via emails and presentations. To engage learners, practitioners added project communication to the agenda of existing meetings that learners attended. For example, practitioners attended the monthly office meeting, developed presentation slides and presented face to face, or by phone, to learners about m-learning podcasts being implemented.

Even though practitioners developed and maintained some documentation to manage the initiative and communicate with stakeholders, they also emphasised that the documentation they used was insufficient and not up to date. For example, the project plan was useful and developed in the early stages of the initiative but was not updated and consequently was not used later in the initiative. There was a lack of documentation that defined the practitioners’ roles and responsibilities and those of key stakeholders, such as those identified as providing technical expertise that practitioners did not possess. This resulted in some stakeholders helping practitioners, based on best endeavours and push back on completing project tasks, as they did not perceive that as part of their role. When practitioners encountered push back from stakeholders; they often used their personal influence to persuade them to lend their expertise to the initiative.
Chapter 6 – Within-case Analysis – Case 2

This chapter presents discussion of the second of three within-case analyses. Following the same structure as Case 1, this chapter begins by presenting background and research participants. Secondly, Case 2 is analysed in terms of how it relates to the research questions. The first two research questions are discussed in three themes. Theme 1 explores how practitioners conceptualise m-learning. Theme 2 analyses how practitioners’ practice helps them cohere as a Community of Practice (CoP). Theme 3 examines how stakeholders conceptualise m-learning. Finally, following the analysis of these themes, section 6.5 explores the last research question and provides an overall discussion of how this case relates to CoP theory.

6.1 Background

Company B is a property fit out and refurbishment specialist company and serves government and private clients Australia wide, employing over 300 staff. The m-learning case study under investigation is based on a Yammer project (referred to as the m-learning ‘project’ or ‘initiative’ in this study), implemented company wide. Yammer is an enterprise social networking and productivity tool that allows staff to connect with other users, find information quickly and supports information sharing and collaboration (Rawal 2015).

This case is based on the second time Company B have tried to implement m-learning. Group Executive Operations set the following objectives for implementation:

- Support knowledge sharing and learning amongst staff (for staff support in their jobs and training)
- Connecting staff from all around the country (allowing easy access to information and learnings)
- Support a healthy company culture through improved communication, collaboration and peer-to-peer reward and recognition.

The first attempt at implementing the m-learning initiative was from 2011 to 2013. This implementation was deemed as a failure because it was used by only a small number of staff. The research participants emphasised two key issues causing the first implementation to be considered a failure. Firstly, there was a lack of senior leadership support behind the use of the tool for staff communication and collaboration that supported staff learning. Secondly, a technical issue meant that staff had to use a different set of login credentials, different to their company login credentials, to access the tool.

In early 2016, Group Executive Operations assumed the role as the project sponsor, supporting the implementation of the tool a second time, and asked Group Executive Strategy, and People Strategies Business Partner and Communications Manager to address the issues that plagued the previous implementation. As part of the development and implementation of the m-learning initiative, the practitioners (Group Executive Strategy, Technical Analyst, and People Strategies Business Partner and Communications Manager) addressed two key issues attributed to causing the previous implementation to fail:
1. The practitioners dedicated their efforts to engage with the Chief Executive Officer and the wider executive management team in the company to support the second implementation. The sponsor was also a user of the tool, posting information and encouragement to staff to adopt the tool. Being an active user was encouraged by the executive team with one executive including the usage of the tool as a Key Performance Indicator in their team’s performance review.

2. Staff could sign in to the tool using their existing company’s login credentials. Staff could also access the tool through the company’s intranet site, laptop, mobile phone or tablet.

This case is based on the development and implementation of the m-learning initiative that occurred between February and July 2016. Following implementation, research investigations were conducted between August and September 2016 (Figure 6.1).

![Figure 6.1: Case 2 timeline – key events](image)

6.2 Research participants

Adopting the same approach as the previous case, research participants were selected based on the Research Data Collection strategy detailed in Chapter 4, section 4.2.4. In-depth face-to-face interviews were conducted at Company B’s Melbourne (six) and Sydney (two) offices between August and September 2016. The interviews ranged from 30 to 80 minutes in duration and included participants that held a range of different roles (Table 6.1). Careful consideration has been given to ensure that research participants included a representative sample of practitioners and stakeholders (including the sponsor and learners). To preserve the anonymity of research participants and for ease of reference, participant codes are used and gender references do not necessarily correspond to the actual gender of the participant.

<p>| Table 6.1: Research participants |</p>
<table>
<thead>
<tr>
<th>Research participant’s role in the initiative</th>
<th>Number of interviews conducted</th>
<th>Participant Code</th>
<th>Research participant’s role in Company B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor (1)</td>
<td>1</td>
<td>C2S1 (Sponsor)</td>
<td>Group Executive Operations</td>
</tr>
<tr>
<td>Practitioners (3)</td>
<td>1</td>
<td>C2P1 (Practitioner 1)</td>
<td>Group Executive Strategy</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C2P2 (Practitioner 2)</td>
<td>People Strategies Business Partner and Communications Manager</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C2P3 (Practitioner 3)</td>
<td>Technology Analyst</td>
</tr>
<tr>
<td>Learners (4)</td>
<td>1</td>
<td>C2L1 (Learner 1)</td>
<td>Group Executive Property</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C2L2 (Learner 2)</td>
<td>Group Executive Sales and Marketing</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C2L3 (Learner 3)</td>
<td>Commercial Manager</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C2L4 (Learner 4)</td>
<td>Sales Effectiveness Manager</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
<td></td>
<td><strong>Legend: C2 = Case 2; S = Sponsor; P = Practitioner; L = Learner</strong></td>
</tr>
</tbody>
</table>

All practitioners worked on the initiative on a part-time basis concurrently with their existing day-to-day organisational roles (see Table 6.1, first and last columns). Figure 6.2 illustrates the structure and roles within the project, including day-to-day organisational roles of the sponsor and practitioners.

Figure 6.2: Case 2 project team
The sponsor, learners and several senior managers were key stakeholders of the initiative. Four learners were randomly selected by practitioners to represent a variety of roles and seniority in the company. Learners provided feedback on the development and useability of the m-learning tool and content. Two out of the four learners interviewed were senior executives and two were managers of small teams. The study investigates practitioners, learners and sponsors in the implementation of m-learning.

6.3 Themes 1 and 2: Practitioner’s perspective

Following the same approach as the first within-case analysis in Chapter 5, this section examines the practitioners’ perspective of the initiative under two themes to address the first research question (Table 6.2). The clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 2 Cluster Diagrams’.

<table>
<thead>
<tr>
<th>Research Question 1</th>
<th>Theme</th>
<th>Theoretical categories</th>
</tr>
</thead>
</table>
| What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation? | 1. Practitioners’ conceptualisation of m-learning | • Balancing dual organisational roles  
• Meeting the sponsors’ requirements in building a collaborative knowledge sharing culture and improving productivity |
| | 2. Practice work of practitioners | • Working as a team in an informal manner  
• Engaging with the sponsor and learners  
• Rushing implementation  
• Addressing technical issues |

6.3.1 Theme 1: Practitioners’ conceptualisation of m-learning

This theme explores how practitioners conceptualise the initiative, in terms of how they perceive their role and how their worldview may have influenced both their practices and relationships with stakeholders.

6.3.1.1 Balancing dual organisational roles

The m-learning work for each practitioner was in addition to their day-to-day work and they had to dynamically alternate between existing organisational and practitioner roles. The workload associated with the initiative was not evenly distributed amongst the three practitioners. The heavy m-learning workload that Practitioner 2 had was recognised by other practitioners. This was evidenced when Practitioner 3 noted that “there was a lot of work done by [Practitioner 2]”. Practitioner 2 found it difficult to balance the workload of their existing role (HR commitments) with associated development and implementation activities. Practitioner 2’s m-learning workload included researching and attending training on how to implement m-learning, overall planning and co-ordination of the m-learning initiative, and designing communication material to help with engagement and communication with different stakeholders about m-learning.
In addition to the increased workload, the sponsor required the initiative to be implemented rapidly (within about six months). The initiative being time-bound added to the stress for practitioners, as illustrated when Practitioner 2 described the difficulty with associated project timelines – “the pace was tough [to deliver the initiative rapidly]”.

Trying to juggle HR commitments with this kind of project is actually quite difficult. So, from that perspective it was a bit of a challenge. (C2P2)

Not all practitioners had the same difficulties in balancing dual roles. Practitioner 3 was a Technical Analyst from the Information Technology (IT) Department and was familiar with completing project tasks as part of their organisational role. When Practitioner 2 reflected on the difficulty he had in balancing his existing role with his practitioner role, he contrasted how Practitioner 3 had less difficulty in managing their workload because the project work was part of their organisational role.

It may be a bit easier for the IT guys because that's what they do. It's just another project and just part of their role. (C2P2)

The view of Practitioner 2 is consistent with Practitioner 3’s view, when he described his involvement in the initiative as limited to technical IT tasks. Furthermore, Practitioner 3 did not comment on any difficulties he had with balancing practitioner and organisational roles.

There were some synergies between the practitioners’ project role with their day-to-day organisational role. For example, Practitioner 2 viewed part of their ongoing day-to-day role (People Strategies Business Partner) as improving the way the company communicates, builds and shares information and knowledge. As part of their day-to-day organisational role, Practitioners 1 and 3 have IT responsibilities and provide ongoing in-house m-learning technology support.

Despite some synergies between dual roles, some practitioners had difficulty in balancing their priorities and this required the sponsor to “remind” Practitioner 1 to prioritise project activities. For example, early on Practitioner 1 did not see the initiative as a high priority for the company. In discussions with practitioners, the sponsor raised the initiative as a priority, and this caused Practitioner 1 to adjust their personal view and focus on project activities.

My perception was [that] it wasn't a priority for the business. He [the sponsor] was very gracious and just kept reminding me. (C2P1)

Practitioners were not given extra resources and were asked to implement the tool within organisational cost and time constraints. Consequently, practitioners had difficulties with the implementation, as they had to balance dual roles and manage the stress associated with an increased workload due to time constraints (approximately six months) and cost constraints (with minimal funding provided to the practitioners for the implementation) imposed by the sponsor. Practitioners who were balancing dual roles, taking on a significant project workload and having to meet rapid implementation timelines were under considerable stress (e.g. Practitioner 2). This stress could have an adverse impact on the ability of these practitioners to meet the responsibilities and deliverables of both their existing organisational and project roles.
To manage this stress and meet the rapid implementation timelines, the practitioners had to be flexible in prioritising their tasks associated with performing dual roles.

6.3.1.2 Meeting the sponsor’s requirements in building a collaborative knowledge sharing culture and improving productivity

Despite some difficulty in balancing their workload and priorities, Practitioners 1 and 2 spent a significant amount of time and effort on the initiative because they believed the company had problems with staff not collaborating and sharing knowledge. This is in line with the sponsor’s concern that the company needed to improve its collaborative knowledge sharing culture. Consequently, Practitioner 1 described the problem as a “siloed mentality” and emphasised that this issue required attention because it has been “a long-time weakness” for the company. The practitioners expressed a sense of purpose in their involvement with the initiative because they believed m-learning was a tool that could help address this important issue by – “establishing better collaboration and knowledge sharing ... really building that sense of “we are one team” (C2P1). Practitioner 1 described their understanding of the issues associated with a “siloed mentality” in relation to the company’s geographically dispersed operations. He emphasised that each state operation could make the same mistakes because they were not sharing their learning from mistakes made in other state operations. This could also be an issue when successful business practices are contained in a small part of the company and not shared for the benefit of the whole company.

We’ve got seven state operations or branches who also do their own thing and often the mistakes that are made or the good things that are done tend to get restricted to just that group. (C2P1)

The importance of the m-learning tool to Practitioner 1 is illustrated when he described it as “important” to addressing the “siloed mentality” issue, impacting on the company’s ability to “working smarter” and being “competitive” (C2P1).

In this day and age, there’s no way you are going to be competitive if you’re not working smarter. [M-learning] is an important part of that. (C2P1)

Practitioner 2 also believed that the implementation of the tool was important to the company, illustrating this view when he described the implementation as “really powerful”, and supporting “instant interaction and instant solutions” by staff collaborating and sharing knowledge across different parts of the company.

People are finding solutions to their own problems. That’s empowerment. For example, a safety solution may not come from the Safety team. That’s really powerful ... You can get more instant interaction and instant solutions. (C2P2)

This example illustrates that implementation was powerful, not just because of the m-learning technology, but that it facilitated a change in behaviour in staff finding solutions to their own problems quickly, by learning and sharing knowledge and information with staff across the company. When the practitioners used the term “silos”, they referred not only to physical or geographical “borders” or boundaries. They also referred to borders that may exist across different operational reporting lines or functional teams.
We’ve got the different branches, but there are borders. Not just geographical borders… in this branch you’ve got all the guys that are out on site and you’ve got the office-based staff and you've got a border there. (C2P1)

The practitioners emphasised that the existence of these “borders” limited the way staff effectively “functioned” and performed to the level they were “capable of” (C2P1) and that the initiative would help change staff behaviours – “break down those walls” and “create collaboration at a high level [amongst staff]” (C2P3). The practitioners also emphasised the need to improve collaboration and knowledge sharing amongst staff, driven by a change in organisational need and the competitive environment, increasing the number of national clients that were geographically dispersed and needed to collaborate with the company’s staff.

Our disconnected employee base [is] very siloed… we know there's a lot of learning from each of the sites and the guys don’t necessarily talk to one another. We are trying to find a way to share that knowledge between teams, particularly because we've had quite a few national clients recently. (C2P2)

Some practitioners saw m-learning not just as a collaboration and knowledge sharing tool but one that supported staff to improve their efficiency and productivity such as freeing up time in the Communications team. Practitioner 2 assumed that when staff use the tool to interact, this would free up their time to deal with other responsibilities.

[Using m-learning] removes some … steps, giving our team time to concentrate on other things because everyone has got other responsibilities to deal with as well. (C2P2)

Another example where practitioners perceived the m-learning initiative as improving staff productivity was describing the possible reduction of “email fatigue”. They emphasised that this was an important issue that negatively impacted all staff and that the initiative implemented would “make life a bit easier … I would hope that [the m-learning tool] does reduce our email burden… as email fatigue is huge” (C2P2).

Furthermore, practitioners perceived m-learning as a tool to praise the work of company staff, which could improve their morale and encourage them to use the tool for collaboration and knowledge sharing. Practitioners emphasised that without the tool there was no efficient way to “informally praise and celebrate the work that we [staff] do” (C2P2).

We can provide news on the company intranet but that takes time… [Using m-learning can be] a way for someone to instantly praise the work of a project team and the whole company sees that we like that. (C2P2)

Practitioners also saw the implementation as helping staff build relationships within the company and placed great importance on this because practitioners perceived the company as a “very people-oriented organisation” (C2P2).

[Implementing the tool is good] for more of the social aspects of getting people to share and work together… [a] general building of relationships. (C2P3)
The way practitioners described the initiative reflected their sense of purpose and commitment to the initiative. For example, Practitioners 1 and 2 provided most examples for potential benefits in implementing the initiative and took on most of the project workload with the belief that their efforts would contribute to staff and company realising these benefits.

6.3.2 Theme 2: Practice work of practitioners

This theme investigates practitioners’ practice, their interactions with stakeholders and how their practice allows them to cohere as a Community of Practice. This includes analysing the relations among practitioners, their perspectives, expertise, work effort and interactions amongst stakeholders.

6.3.2.1 Working as a team in an informal manner

Practitioners worked as a team in an informal manner with minimal project documentation and the practitioners’ role was not well defined. They commented that the lack of project structure contributed to the implementation being difficult. This lack of structure was demonstrated when the sponsor did not define project roles, responsibilities and reporting lines and was not involved in any project tasks. Practitioners described the sponsor as “hands off” and “at a distance” (C2P1). Furthermore, they did not have a project plan that guided their work in terms of who was working on what project tasks. Without a documented project plan, practitioners described the m-learning initiative as “fluid” and “[not] structured” (C2P2) and therefore the effort required to complete the initiative was not clear to them.

Because of the good working relationship established prior to the commencement of the initiative, practitioners voluntarily completed project tasks, worked through their differing views and came to team “resolutions” via discussions in face-to-face meetings or by phone. The way practitioners informally and collaboratively made decisions was described by Practitioner 2 as “decisions through discussion”. This approach was adopted because there were no clearly defined project roles and responsibilities. The highly informal and collaborative working style established between practitioners was possible because all three had existing good working relationships, as they have been employees of the company for many years and work together from time-to-time in their current day-to-day operational roles.

Practitioners made project decisions by having discussions and debates and with occasional input from the sponsor. At different times throughout the life of the initiative, practitioners resolved their different views through numerous discussions and debates that were not influenced by their unequal roles in the organisational hierarchy. For example, even though Practitioner 1 was more senior than Practitioner 2, Practitioner 1 agreed to Practitioner 2’s recommendation to delay the implementation date by a week to allow for more time to communicate to the learners about the initiative before go-live. This example illustrates that although the project team was made up of staff with different positions and seniority in their operations and management, they worked collaboratively, recognising the expertise of others and listening to “other perspectives” (C2P2).

[We have a] positive relationship but sometimes [C2P1 and C2P2] don’t see eye to eye on things... [C2P1] is a group executive so he does have more power definitely. He's always open to listen to other perspectives. In that relationship, I can’t say that he
always wins. In the go-live date he wanted it to be 21st July and I said no, we need another week, an extra week to communicate. He said that's fine. 28th July is fine. (C2P2)

Despite the lack of formality in role definition and documentation, practitioners described the initiative as a positive experience – “for the most part things went rather smoothly... [the initiative was a] good experience” (C2P2). The positive experience came from practitioners working as a team based on pre-existing good working relationships, respect for each other’s views without referring to their role in the organisational hierarchy, and high levels of collaborating through regular face-to-face discussion and via emails, phone and video conference. They also developed strategies to manage the stress and heavy project workload such as resolving differences in practitioner viewpoints via open and regular discussions and negotiating a delay in implementation timelines within the team and with the sponsor.

6.3.2.2 Engaging with sponsor and learners

Practitioners believed that the implementation was an overall success because they were working well as a team and had planned how they would engage with stakeholders early on in the initiative – “it’s the planning up front” (C2P1). The “planning” that Practitioner 1 referred to was not the planning of roles and responsibilities and task allocation, but the significant effort practitioners expended in engaging with the sponsor and learners, because this was lacking in the previous m-learning implementation perceived as a failure.

Learners in executive management and leadership positions were targeted by practitioners. They put significant time and effort into “getting the leadership team more involved” in the initiative and focused on engaging with the Chief Executive Officer and wider executive management team to support implementation (C2P2). They encouraged members of the executive management team to visibly and vocally support the initiative – “really getting the leaders of the organisation to be visible champions” (C2P1). This was a focus for practitioners because the lack of support from company leaders was identified as a key issue that contributed to the failure of the previous implementation.

Managing the way practitioners communicated with senior executives and learners was significant for practitioners, partly because of the influence of Practitioner 2’s operational role and his expertise in communication management. His operational role in the company was as Internal Communications manager. He saw communication as important to the initiative’s success and placed a high priority on how practitioners, executive management and the sponsor communicated within the company based on his expertise in communications and change management. Practitioner 2 worked hard to get the executive management involved with the initiative. Executive management were engaged to lead staff in the adoption of the tool. As part of the strategy to engage executive management, practitioners involved them, as part of the test group, before the official implementation.

[The practitioners] really made a deliberate effort to engage executive management so that they were leading from the front... because if we didn’t have them [executive management] on board it was just not going to fly. (C2P1)
In addition to engaging with executive management, practitioners took care in communicating to learners (all staff) that this implementation was better than the previous one. They communicated the benefits of using the tool to learners and “what’s in it for us” (C2P1). Practitioner 1 used a story-telling approach and his personal experience as an example, turning from a sceptic to supporter, to convince learners of the significant benefits in using the tool. He emphasised that he received “very positive” feedback from learners in the way he described his personal experience. Through the presentation Practitioner 1 believed that learners “saw [m-learning] in a different light”.

I actually made a point of, I literally said to people, I put my hand up the first time around, I was a silent cynic. I wanted to put that out there... I gave an example of All State – an American Insurance Company... You can put a problem out there for the crowd to solve and I think they offer $10,000 or something and the improvement to the algorithm I think was 250% in three days or some ridiculous short time. I just gave that example and said, “none of us are as smart as all of us”. (C2P1)

6.3.2.3 Rushing implementation

Even though practitioners recognised the importance of engaging with stakeholders and communicating effectively with staff about the implementation, because the initiative was running behind time relative to the sponsor’s expectations, the implementation was “rushed” and project communication was not completed as Practitioner 2 expected. The significant workload associated with some project tasks and associated lack of detailed planning could have also contributed to rushed implementation. Practitioner 3 emphasised rushed implementation resulting in practitioners not being able to complete certain project tasks – “pushed too hard [to have the initiative implemented rapidly]”.

The go-live happened very quickly. So, they [C2P2] didn't have a chance to communicate it properly as early as they could have. (C2P3)

An example of incomplete project tasks related to improving communication with learners, by developing information guides designed to explain the benefits and how to use the m-learning tool. Practitioners’ original plans were to implement the initiative with information guides provided to learners. However, because implementation was rushed, the information guides were not available to learners.

Furthermore, practitioners emphasised that if they had had more time before implementation, they would have engaged in more two-way dialogue between learners and practitioners. This would have helped learners understand more about the initiative, rather than the one-sided broadcast of information practitioners provided, which could be perceived by learners as practitioners pushing the tool on to them.

[The implementation] hasn't gone perfectly... communications could be improved... There were hurdles. Could have communicated more. I was tasked with having Info Guides ready, but these aren't ready right now... To some degree [communications have been] very one sided. It’s us [practitioners] trying to give them [learners] something or trying to get them to realise that it's something that they might want. (C2P2)
Practitioners made a concerted effort to engage with executive managers and learners (all staff). However, they also recognised they could have managed communication better. Despite the planned project communication work being incomplete, they proceeded to rush the implementation under pressure from the sponsor. This illustrates the significant influence the sponsor had on the practitioners’ practice and especially implementation timelines.

6.3.2.4 Addressing technical issues

Despite implementation being rushed, practitioners made sure they overcame technical issues experienced in the previous implementation. For example, the tool was easily accessible via the company intranet. Learners could access the tool using their existing login credentials or via an application on the learners’ laptops, smart phones or tablets.

Furthermore, despite the practitioners not having clearly defined project roles, they all understood that Practitioner 3 had the technical expertise to manage technical matters associated with the initiative. Practitioner 3 managed technical issues and liaised with the vendor on an as-required basis, emphasising that some technical issues were significant in terms of key functionality not working – “[there were] significant technical issues... [some] functionality won’t work”. Based on interviews with other practitioners, the sponsor and learners, technical issues were not visible and therefore they reported no technical issues. Having technical expertise within the practitioner team that could liaise with the vendor was important to ensure practitioners and stakeholders were not affected by technical issues. Furthermore, because Practitioner 3 managed the technical issues, other practitioners were able to manage their own workload without having to deal with technical issues.

6.3.3 Summary: Practitioners’ perspective

The way practitioners conceptualised their role and described their team practices illustrates the importance of balancing dual roles, having a sense of purpose, working together in an informal and collaborative manner, liaising and engaging with stakeholders, supporting learners and addressing technical issues. Practitioners were not given extra resources and were asked to implement the tool within organisational cost and time constraints. Consequently, practitioners had difficulties with the implementation as they had to balance dual roles and manage the stress associated with an increased workload due to organisational cost and time constraints imposed by the sponsor.

Even though the implementation was difficult for some practitioners, with a lack of formality in role definition and documentation, all practitioners described the initiative as a positive experience. This positive perception may have come from practitioners working effectively as a team based on pre-existing positive working relationships between them, respect for each other’s views and being able to resolve disagreements without referring to their role in the organisational hierarchy. Furthermore, the lack of formality in project documentation and the practitioners’ role provided them with flexibility and autonomy that allowed them to balance their role with day-to-day responsibilities concurrently.

All the practitioners expressed a sense of purpose and commitment to the implementation of the initiative to support the learning needs of the learners and help build a more collaborative and knowledge sharing culture for the benefit of staff and the company. This is also a reflection
of practitioners meeting the sponsor’s requirements and aligning mutual work priorities. Practitioners emphasised the need to improve collaboration and knowledge sharing amongst staff due to changes in company needs and the competitive environment. To be more competitive and support the increasing number of national clients with geographically dispersed operations, the staff in Company A needed to learn from each other by using the tool.

Practitioners actively addressed two key issues attributed to the failure of the previous implementation. They focused their efforts on building interpersonal connections with senior management and learners. However, despite acknowledging that it was important to engage and communicate with executive managers and learners, practitioners rushed the implementation as discussed earlier. This resulted in some project communication work not being completed during implementation and illustrates the significant influence the sponsor has on practitioners’ practice. The way in which technical issues were addressed by practitioners suggests it is important to have technical expertise, access to external vendors as required, and to address known technical issues such as single sign-on access to m-learning technologies.

6.4 Theme 3: Stakeholders’ perspective

This section explores theme 3, the stakeholders’ perspective, how they conceptualise the initiative and their role and how they interact with practitioners. This stakeholder theme addresses research question 2 – *How do m-learning stakeholders, such as sponsors and learners, conceptualise m-learning?* Based on case analysis three stakeholder groups are examined because of the key role they play in the m-learning initiative and in the following order: sponsor, learners, and executive managers who motivate learners.

6.4.1 Sponsor’s perspective

This section examines the sponsor’s perspective and is analysed in terms of how the sponsor perceived their role and that of practitioners, and how their assumptions and perceived objectives influenced practitioners. Data from the sponsor interview defined two theoretical categories (Table 6.3). The detailed clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 2 Cluster Diagrams’.

<table>
<thead>
<tr>
<th>Theme 3 Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor’s perspective</td>
</tr>
<tr>
<td>1. Building a more collaborative knowledge sharing culture</td>
</tr>
<tr>
<td>2. Taking management control and focusing on rapid implementation</td>
</tr>
</tbody>
</table>

6.4.1.1 Building a more collaborative knowledge sharing culture

Like practitioners, the sponsor emphasised that staff operated in “silos” and this was a significant issue for the company, causing a “real disconnect problem”, because staff work in geographically dispersed locations. The sponsor perceived the initiative as helping learners to communicate, learn from each other and work “together” easily online or electronically when learners could not work together physically.
So remotely, you can’t get people together from all around the country easily but electronically [using the tool you can] ... talk seamlessly and easily to each other [to]
share knowledge and share learnings (C2S1)

The sponsor described feedback from staff reflecting the changing need of the company to improve “knowledge sharing” and that this was “not done well” in the company. Consequently, he supported staff demands for more learning online - “…across states and across sites they [staff] want more online learning”. In response to staff feedback, the sponsor placed a high priority on addressing the significant “silo” issue and the demand for more “online learning”. He emphasised the “huge potential” to support staff in sharing knowledge and learning by gaining responses quickly through posting messages in one place and having these messages visible company wide.

M-learning was perceived by the sponsor as an effective technology platform because staff have access to up-to-date information which was “on the fly”, relevant and practical “from the coalface” (C1S1). This point was further elaborated by the sponsor when he described staff sharing more relevant information using the tool from a staff perspective rather than management perspective – “they’ve [staff] probably got a better idea than we [management] have of what people want to know about.”

We’ve got 100 site managers across the country and they may run into a technical question on the job every day... To me that’s the real power ... for someone to be able to post questions simply ... and it being answered by one of the other 99 people who will have the answer. (C2S1)

In addition to the practitioners’ positive view of the implementation, there was also a positive sentiment from the sponsor. This was evidenced when the sponsor described an example, as an indicator of the beginnings of positive change in the way staff communicate in the company. The sponsor provided an example of staff using m-learning for peer-to-peer reward and recognition and emphasised that this was “more powerful” than recognition by a senior executive in the company.

Reward and recognition is just happening peer-to-peer... So, it’s not the CEO or me or a state manager thanking someone for a job well done. It’s someone in the same job position doing it which is more powerful and I can like it and the CEO can like it or reply. (C2S1)

The implementation of the initiative allowed learners to communicate with each other differently. For example, the sponsor described how a senior leadership team working group was established using the tool and information was deliberately posted to that group instead of via email (which would have previously been standard practice for communicating within the company’s senior leadership team). The sponsor emphasised that the creation of the senior leadership work group, using the tool, was a strategy to encourage senior executives to become familiar with using the tool in their day-to-day work.
We've got a senior leadership team work group. I've been posting things there that I would have normally emailed deliberately so that they talk to each other and say ... go and have a look at it. (C2S1)

The sponsor prioritised the use of the tool actively and frequently checked what staff shared and learned using the tool. He also contributed information from time-to-time, mainly using the m-learning application on his smart phone or laptop. By personally being being active in using the tool, for example clicking on “like” on all staff’s posts and posting his own messages, the sponsor sent a visible and positive message to staff to follow his example and be active in sharing information and learning.

I just go through and check it [m-learning] every few hours... I like to “like” everything. I think that sends a good message... occasionally I'll post a little. (C2S1)

The overwhelmingly positive view the sponsor had of the benefits of using the tool may have caused him to put pressure on practitioners to implement the initiative rapidly, so the benefits could be quickly realised by the company. The sponsor recognised that their seniority in the company meant that their actions could influence the behaviours of their peers and staff. Consequently, the sponsor’s positive view may have also acted as a driver for him to personally invest his time in using the tool to set a good example for peers and all company staff.

Despite this positive view; when he reflected on implementation, he emphasised that the organisation lacked adequate resources. The sponsor referred to cost constraints and limited m-learning and technical expertise within the company as an “impediment” to further developing m-learning courses.

We talk about it a lot but never seem to get there. That's one of the impediments to developing our own online [m-]learning courses ... The effort required to create the course is overwhelming for the resources we've got.

6.4.1.2 Taking management control and focusing on rapid implementation

As described earlier, the sponsor was senior in the company as the Group Executive Operations reporting to the Chief Executive Officer. His level of seniority in a management position may have influenced his management style and seeing management control over the initiative as being important. The sponsor was focused on implementation timelines and was not deterred by staff scepticism about the second implementation attempt. While he delegated the whole implementation of the initiative to practitioners, he continuously monitored and intervened during the life of the initiative when he felt intervention was required.

When I thought it was maybe not moving quick enough I would give [Practitioner 1] a push. (C2S1)

The sponsor was determined that the initiative would progress to implementation and took management control to ensure it was progressing at a rapid pace. This determination was emphasised when the sponsor described himself as “very passionate... determined... insistent... nazi [-like]”. This description reflects the sponsor’s determination and not being discouraged by
staff in the company who were sceptical because the previous implementation attempt had failed.

I was very passionate that it was going to work this time... determined that we do the launch better... I've never worried about the naysayers. (C2S1)

Due to the seniority of the sponsor in the company’s hierarchy, there was significant influence and authority to monitor and delegate work to practitioners. Ultimately all practitioners were either directly or indirectly reporting to the sponsor. In addition to his seniority, the sponsor had also been with the company for over 20 years and had had a pre-existing working relationship with practitioners for several years. This further contributed to his significant influence over the practitioners and in turn how quickly the initiative was implemented.

6.4.2 Learners’ perspective

In this section the learners’ perspective is explored and constitutes the second of three m-learning stakeholders analysed in this case. An in-depth analysis is presented in terms of how learners of the m-learning initiative perceived their role, the role of practitioners and how their worldview and assumptions influenced practitioners. Data from interviewing several learners (C2L1, C2L2, C2L3, C2L4) defined two theoretical categories (Table 6.4). The detailed clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 2 Cluster Diagrams’.

Table 6.4: Theoretical categories – Learners’ Perspective

<table>
<thead>
<tr>
<th>Theme 3</th>
<th>Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners’ perspective</td>
<td>1. Learners conceptualising tool as supporting information sharing and learning</td>
</tr>
<tr>
<td></td>
<td>2. Having different learner motivations for adopting m-learning</td>
</tr>
</tbody>
</table>

6.4.2.1 Learners conceptualising the tool as supporting information sharing and learning

Like the sponsor and practitioners, some learners also emphasised the difficulty of getting staff to work together and learn from each other, especially when a team is made up of staff from geographically dispersed offices and different functional groups. Like practitioners, some learners described “borders” as not necessarily physical and geographic but also borders that could exist from staff in different function groups working as one team (C2L4). Learner 4 perceived m-learning as a “collaboration tool”.

Purely and simply this is a way for us to collaborate. To try and break down the “borders” ... From a sales perspective, which is where I work, it is hard to get people to all work together. (C2L4)

Learner 2 also perceived m-learning as a tool supporting better collaboration and knowledge sharing. This was illustrated when he described the tool as “empowering” staff to “take ownership” by having the ability to create forums online to discuss topics they perceived were important or interesting. This allowed staff to take control of what, when and who they communicated with online, without relying on other staff as intermediaries or broadcasters.
such as the Internal Communications Manager or other teams) – “People [were] being empowered or taking ownership to create communities and then regularly posting [sharing information and learning from each other]” (C2L2).

Consequently, some learners also perceived the m-learning initiative as supporting continuous learning and knowledge sharing – “[The tool supports] continuous learning, knowledge sharing and trying to capture more innovation examples from the business” (C2L1). Other learners commented that the tool was both a platform for social interaction, as well as information and knowledge sharing for work. Learner 2 described the tool as “…a mix of trying to get the balance between fun and sharing information”. Some learners also perceived m-learning as a learning tool.

Sharing best practice; educating [staff or learners]. (C2L2)

I feel it’s an information sharing and learning tool. (C2L3)

Some learners emphasised that the tool was important for social interaction and enhancing communication and information sharing. Learner 2 described the tool as an example of social media and another way to disseminate information. He perceived the tool as a “safe” medium that encouraged staff to be visible and have a “voice” in the company. He also perceived the tool as a platform that encouraged staff who were introverted to communicate with other staff online when they otherwise would not have communicated their views or opinions.

I understand the reason it’s there. It is a tool for sharing information within the business. (C2L3)

[M-learning] enhances communication. As a national business, communication is king. It is another communication vehicle … Social media is here to stay so adapt or die. We need to give influencers a voice … the opinion-ators … that's good because there are some people who are introverted and won't engage. Maybe they feel m-learning is a safe environment. (C2L2)

Other learners drew a connection between the currency of information the tool provided to staff and better staff engagement. They emphasised that the tool provided “live” information and this was a better way to engage with staff. Some learners preferred how the tool was more dynamic and engaging compared to other communication methods used by the company to engage staff.

It's quite a dynamic and live environment which most of our other communications tend to be history if you will … This is a live environment to share what’s happening right here right now. I think that gets much better engagement. (C2L1)

Despite some learners preferring m-learning as a tool to provide staff with up-to-date information for better staff engagement, and information sharing and learning, email was still predominantly the tool used for communication and sharing information. Some learners described changing old habits of using email as being difficult because most staff were “conditioned” to using email because this was the norm and used constantly throughout the day by most staff. Because m-learning is a relatively new tool compared to email, learners could
Easily forget about it. Some learners described themselves as “time poor” (C2L3) and did not have time to use the tool to communicate or learn from information sharing. Learner 3 emphasised that practitioners need to “remind” staff that the tool is there to be used like “social media sites for business to share information and help each other”.

I think you’re conditioned to it because everybody deals with email... I think 90% of the working population would open [their] email as one of the first things they do every day. Most of them would keep it open, especially in a corporate environment, all day. (C2L4)

You could get in a zone, you get busy... you could quite easily forget... [m-learning’s] there and forget that it’s a sharing tool rather than using emails. (C2L3)

Even though some learners described m-learning as a tool for communication, information sharing and learning, several learners were unclear about the type of content that should be shared using the tool – “I don’t think it’s clear what should be shared and what’s not” (C2L4). Some learners described the use of the tool for social content as an inhibitor or discouraging learners to take the tool seriously for sharing work related content. Another inhibitor described by Learner 1 was that staff seemed to be “afraid” of sharing what could be perceived as “dumb” questions by other learners. This view is contrary to that of Learner 2, describing the tool as potentially a “safe” environment for introverted staff. Some learners preferred face-to-face communication and mentioned this preference as the key reason for not using the tool – “I generally go and talk to somebody” (C2L4).

Certain users seem to switch off when they see most of the posts are of a social nature... I think a number of our staff are afraid to ask dumb questions or what are perceived as dumb questions. (C2L1)

6.4.2.2 Having different learner motivations for adopting m-learning

The comments from the interviews with learners showed that different learners had different motivations for adopting m-learning. Some learners were disinterested in the training content because they felt they already understood the training content based on their work experience. The learners that held this view often preferred to take short cuts to fast track training assessment. Training assessments were often in the form of an online questionnaire or quiz. Some learners would skip a substantial amount of training content and progress straight to the training assessment tasks. The tendency to rush the training, skipping training content to go directly to the training assessment task was driven by the learners’ desire to gain certification, which was mandatory for their jobs, as quickly as possible. These learners perceived mandatory training as wasting their time. They only completed training for mandatory certification to prove they understood what was required of them in their job role.

Give you an example... there would be one video for every quiz. I probably skipped half of them [videos] and did the quiz anyway to pass. Is that really the right way of learning? [No] ... Guessing. I did do some guessing. (C2L4)
Some learners expressed a preference for face-to-face training as this was the way the company traditionally trained staff. Learners described the m-learning tool as the first m-learning application that supported staff training, information sharing and collaboration.

My personal preference is face to face. You get a lot more interaction. (C2L4)

Most of our learning is done in a face-to-face environment … [Company B use] video conferencing facilities … people would watch and join national training sessions if they want to. Primarily we fly people out to face-to-face sessions for our most important learning. (C2L1)

Other learners questioned the effectiveness of the tool and did not want to use it. This resistance was because these learners 1) perceived themselves as being forced to use it, 2) did not see the personal benefits of using it, 3) were unclear what should be shared online, and 4) preferred face-to-face training and communication.

I guess the question I have is how effective it has been. (C2L3)

I’m one of the people that really doesn’t use it. I am quite resistant to it. (C2L4)

One of the learners had a Key Performance Indicator (KPI) imposed on them. As part of their performance reviews they were required to complete at least one post per month using m-learning. This KPI was applied to only one department, and not consistently across the company. For this learner, they used the tool only to satisfy the KPI and expressed resistance because he did not experience personal benefits from using the tool.

I will use it but only to pass the KPI. Unless somebody can give me a compelling reason to use it. I haven't seen one yet … I really don’t get any benefit from it. (C2L4)

Even though some learners questioned the benefits of the m-learning tool, they voiced their support for it – “I’m all for it. I do support it” (C2L4). Some learners suggested running a “campaign” to encourage more learners to use the tool – “I think we need to run an internal campaign ... in such a way that the adoption goes up” (C2L1).

6.4.3 Using executive managers to motivate learners

Research participants identified executive managers as important in motivating staff to adopt m-learning. Practitioners identified and recruited executive managers to be part of the m-learning initiative as part of the test group of learners and vocal supporters to motivate other learners.

Learners in management positions emphasised the need to have executive management visibly leading and using the tool – “We need senior management on board” (C2L2). In keeping with this view, the sponsor and practitioners ensured that this implementation had more executive management and leadership involvement, compared to the previous implementation. This effort has been noticed by the learners and their comments suggest that staff usage of the tool has increased as a result.
Everyone is seeing the management team are keen to use it and are using it. The general population has picked it up as a consequence or partly as a consequence of seeing their managers actively involved. (C2L1)

The practitioners focused their efforts on asking “opinion leaders” to trial the tool before its implementation, to encourage more learners to use it. The learners described “opinion leaders” as those staff that had a significant influence on the learners because learners would follow and look up to them (C2L1). Some “opinion leaders” were executive managers.

“Opinion leaders” of the business [used the tool] and therefore with their use of [it] we've ... demonstrated our commitment [to it] (C2L1).

Furthermore, practitioners prominently promoted messages on the company’s Intranet to emphasise the initiative’s importance to the company. Consequently, some learners attributed the wide adoption of the tool by staff to the high visibility of the initiative’s messages on the company’s Intranet page.

It’s a feature of that home [Intranet] page – literally giving it about two-thirds of the page real estate wise. Most people are able to see and react to ongoing messages and ongoing conversations. As a consequence of that I think it's had greater adoption. (C2L1)

6.4.4 Summary: Stakeholders’ perspective

The analysis of m-learning stakeholders confirms that the sponsor, learners and executive managers conceptualise m-learning differently and engage with practitioners differently. The sponsor conceptualised m-learning as a tool in response to changes to the organisation’s needs and staff asking for better communication, collaboration, knowledge sharing and learning amongst staff and with their clients. The sponsor was focused on rapid implementation timelines because he wanted staff in the company to benefit from using the tool.

However, despite the positive view the sponsor had of the tool, when he reflected on implementation he emphasised that the organisation lacked adequate resources. The sponsor referred to cost constraints and limited m-learning and technical expertise within the company as an impediment to the development of m-learning in the company.

Because of the sponsor’s senior position in the company’s hierarchy, his long tenure and that he was their line manager, he exerted significant influence on practitioners. For example, practitioners rushed the implementation despite important project tasks, such as learner information guides, being incomplete and not available during implementation. The practitioners established interpersonal connections with the sponsor and through a high level of interaction, which allowed them to negotiate task priorities and implementation timelines.

The learners’ views varied from being positive supporters and users to those that expressed a level of resistance to the use of the tool. In response to such varied views, practitioners told stories about their own experience, converting from a non-supporter of the initiative to a full supporter, referencing success stories from other companies. Practitioners also built interpersonal connections with executive management because they perceived executive
management participation as motivating and persuading other learners to support the initiative. Consequently, practitioners treated ‘executive managers’ as a group of stakeholders differently to the wider staff audience (learners) and made a concerted effort to regularly engage and liaise with this group prior to implementation. For example, a test group involved a group of executive managers to gain their support prior to implementation.

6.5 Discussion
The findings from this case are discussed in this section in relation to Research Question 3 – *How does a Community of Practice perspective provide insights into organisational m-learning initiatives?* Like the previous case, in analysing this case a CoP perspective was found to be highly useful because the case involves complex social considerations that influence the conceptualisation and practices of practitioners and stakeholders. This case shows that m-learning initiatives are socially, relationally and organisationally complex. This case also reveals that interactions between practitioners and stakeholders resemble CoPs, as they work together in an informal manner, learn from each other, share knowledge, collaborate to address complex challenges and develop practices in response to the company’s bureaucratic context.

6.5.1 Bureaucratic contextual factors influencing practitioners and stakeholders

This case shows that bureaucratic contextual factors influenced practitioners and stakeholders include: 1) organisational constraints, such as a focus on cost; 2) experience from the previous failed m-learning implementation; 3) limited m-learning and technical expertise; and 4) changes in the company’s needs and competitive environment. This case demonstrates that practitioners and stakeholders were resourceful and skilled in managing the influence of these bureaucratic contextual factors on their work.

The influence of cost constraints was reflected in the practitioners’ decision to utilise in-house expertise for the implementation of the m-learning initiative. They also balanced their workload (i.e. both their practitioner and day-to-day organisational roles) concurrently, because they did not gain additional funding for the initiative due to cost constraints. This case demonstrates that practitioners who were aware of their limited m-learning and technical expertise, and thus sought m-learning training and expertise external to the company on an as-needs basis, were more able to deliver m-learning initiatives within the constraints of time and cost.

The practitioners’ skill and resourcefulness in working within the company’s bureaucratic context was reflected in building strong interpersonal connections with their stakeholders that established a shared sense of joint enterprise. Interpersonal connections between practitioners and stakeholders were often built on pre-existing working relationships, where practitioners worked together and with stakeholders in an informal manner. This case shows that pre-existing work relationships can help practitioners build strong interpersonal connections and meet the sponsors’ requirement of delivering the m-learning initiative on time and within budget. This case also shows the importance of practitioners’ inclination to engage with stakeholders (especially the sponsor, senior managers and learners). Practitioners that incorporate what is important to stakeholders in their planning, plays an important part in building support for the m-learning initiative.
The sponsor was focused on rapid implementation and took a management control focus by working with practitioners to address factors leading to the previous failed implementation. This included focusing on supporting the learning needs of the learner and involving senior management as part of the implementation. Technical issues that contributed to the previous failed implementation were also addressed by practitioners.

Practitioners and the sponsor perceived m-learning as helping to address the changing needs of the company and the changing competitive environment. They perceived m-learning as improving staff productivity, collaboration, and knowledge sharing and learning across the company. This case shows that when practitioners acknowledge and incorporate experience from the previous failed m-learning implementation in their planning and the preferred methods in which learners choose to learn (i.e. encouraging social interactions through the establishment of the test group including senior managers and learners), this can establish strong connections with learners. Learners who felt their training needs were supported had a positive view of both practitioners and the m-learning initiative.

The bureaucratic contextual factors influencing practitioners and stakeholders, evidenced and discussed in related theoretical categories in this chapter, are summarised in Table 6.5.

<table>
<thead>
<tr>
<th>Bureaucratic contextual factors</th>
<th>Implications of a bureaucratic context</th>
<th>Related theoretical categories</th>
</tr>
</thead>
</table>
| Organisational constraints (cost and revenue focus) | • Practitioners meeting sponsor’s requirements  
• M-learning work being time-bound  
• Practitioners and stakeholders working together in an informal manner | Practitioners:  
• Balancing dual organisational roles  
• Working as a team in an informal manner  
• Rushing implementation  
Sponsor:  
• Taking management control and focusing on rapid implementation |
| Experience from previous failed m-learning implementation | • Supporting the learning needs of learners  
• Learners valuing social interactions | Practitioners:  
• Addressing technical issues |
| Limited m-learning and technical expertise | | Practitioners:  
• Engaging with the sponsor and learners |
| Changes to organisational need and competitive environment | | Practitioners:  
• Meeting the sponsor’s requirements in building a collaborative knowledge sharing culture and improving productivity  
Sponsor:  
• Building a more collaborative knowledge |
Even though research participants referred to m-learning development and implementation as an ‘initiative’ or ‘project’ their comments and practices reflect characteristics of a CoP. This is illustrated by contrasting the characteristics of a CoP and project team (Table 6.6) and comparing these with evidence from this case (see sections 6.5.3 and 6.5.4).

**Table 6.6: Characteristics of projects and CoPs**

<table>
<thead>
<tr>
<th></th>
<th>What’s the purpose?</th>
<th>Who belongs?</th>
<th>What holds it together?</th>
<th>How long does it last?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community of Practice (CoP)</strong></td>
<td>To develop members’ capabilities; to build and exchange knowledge</td>
<td>Members who select themselves</td>
<td>Passion, commitment, and identification with the group’s expertise</td>
<td>As long as there is interest in maintaining the group</td>
</tr>
<tr>
<td><strong>Project team</strong></td>
<td>To accomplish a specific task</td>
<td>Employees assigned by senior management</td>
<td>The project’s milestones and goals</td>
<td>Until the project has been completed</td>
</tr>
</tbody>
</table>

6.5.2 What is the purpose of a CoP and how long does it last?

Practitioners were tasked by the sponsor to implement the project rapidly to meet the objectives of: 1) supporting knowledge sharing amongst staff (for staff support in their jobs and training); 2) connecting staff from around the country; and 3) supporting a healthy company culture with communication and peer-to-peer recognition. These objectives are broad and could be interpreted as company or CoP objectives because they extended beyond the initiative’s technology implementation. Furthermore, these objectives provided practitioners with a sense of a common purpose. Therefore, unlike a project with a defined completion date and the project’s milestones and goals holding the project team together (Wenger and Snyder 2000); the achievement of these objectives requires a longer period of time that extends beyond the implementation of the project and the involvement of stakeholders. The focus on capability and knowledge building, rather than merely the achievement of project tasks is also a differentiating characteristic (Wenger & Snyder 2000) that indicates practitioners and stakeholders were working as a CoP. The CoP, made up of practitioners and stakeholders, appeared to continue even after the project was completed, because they continued to have an interest in supporting knowledge sharing amongst staff on an ongoing basis.

Furthermore, day-to-day organisational roles overlapped with some of project objectives. For example, Practitioner 2 viewed part of their ongoing organisational day-to-day role (People Strategies Business Partner) as building their own capability and knowledge to improve the way the company communicates, builds and shares information and knowledge amongst staff. Similarly, Practitioner 1 and 3 have responsibilities for supporting technology in the company and would provide ongoing in-house support for m-learning technology. Therefore, practitioners’ involvement with m-learning as a company-wide tool appears to be ongoing, even after project implementation.
6.5.3 Who belongs to the CoP and what holds it together?

The sponsor asked practitioners to implement the project and provided them with a level of autonomy to organise their dual organisational roles. Practitioners also expressed a desire and interest to have ongoing involvement with the company wide m-learning tool. This is more of a characteristic of CoPs where members work together voluntarily because of their passion, commitment and identification with a CoP (Wenger & Snyder 2000). Practitioners provided examples of senior managers and learners voluntarily communicating and interacting, using the tool. This suggests that m-learning tools may also support the emergence of CoPs by providing an easily accessible platform for staff to communicate, interact and share information. This case demonstrates that even though practitioners and stakeholders did not refer to themselves as a CoP, they engaged in practices that holds their CoP together and this reflects the characteristics of social coherence: mutual engagement, joint enterprise and shared repertoire (Wenger 1998, pp. 72-85). (See section 5.5.3 for the definition of these three characteristics.)

6.5.4.1 Mutual engagement

The sense of mutual engagement was important to practitioners because they worked together in an informal manner with minimal documentation and their roles were not well defined. Interestingly, even though practitioners commented that their practice was difficult because of the lack of project structure, documentation and clear roles and responsibilities; this provided them with flexibility and autonomy to negotiate their roles and make project decisions amongst themselves and with stakeholders. Practitioners collaborated effectively because they had a history of working together previously. They also respected each other and could negotiate differing views and make collective decisions about the project without referring to their positions in the company’s hierarchy.

Even though the sponsor had a significant influence on practitioners because they reported to him, he did not directly intervene in their work or provide them with defined project roles and responsibilities. Rather, the sponsor allowed practitioners autonomy and flexibility to make decisions. This case suggests that practitioners working with stakeholders in an informal manner, with little documentation or reference to hierarchy, can support m-learning projects evolving into CoPs that can continue after the completion of the project.

This case also illustrates that high levels of collaboration and frequent face-to-face communication via email and phone helped practitioners build strong interpersonal connections with stakeholders and maintain a strong sense of mutual engagement. This helped provide them with a positive experience, working amongst themselves and with stakeholders. This positive experience may have helped practitioners deal with the larger workload (particularly Practitioner 2), and stressed they had to manage their practitioner work and day-to-day organisational work concurrently.

6.5.4.2 Joint enterprise

The way practitioners conceptualised their role and engaged and liaised with stakeholders suggests they are not self-contained entities. Rather, their CoP was the product of negotiation of a joint enterprise amongst the practitioners and stakeholders. Practitioners had many conversations, both informally and formally, to make decisions. They did not always agree but
worked together to establish common ground over time. The practices of negotiation and finding common ground, using informal and formal meetings, extended beyond the practitioners and included negotiation with stakeholders. For example, negotiating a change in implementation timelines was discussed within the practitioner team and with the sponsor.

Even though practitioners did not use the term CoP, the way they engaged with stakeholders reflected the emergence of a CoP made up of practitioners, sponsors, executive managers and learners. For example, even after implementation practitioners were using the tool to post information about its use and encouraging executive managers to actively use the tool so that other staff would also follow their lead. The sponsor also contributed on an ongoing basis as an active user of the tool, to signal to staff that executive managers were also part of the CoP. Another example of practitioners’ efforts to encourage staff to join the CoP is the establishment of the test group, consisting mostly of executive managers prior to implementation. The test group was established to garner executive management support to ‘lead by example’ and to actively use the tool and through their support, motivate their staff to follow their lead.

6.5.4.3 Shared repertoire

Comments from practitioners and the sponsor suggest that over time the joint pursuit of developing and implementing the project created resources for negotiating meaning and supported the evolution from a project to a CoP. The practitioners had to develop and implement the tool within challenging timeframes imposed by the sponsor, while balancing their day-to-day organisational responsibilities. This put stress on practitioners and dictated a fast pace and pressure. In response, practitioners developed a working style that was highly collaborative and supportive to help them manage the workload and stress. They used tools, such as emails and discussions in meetings, to establish a shared repertoire amongst themselves and stakeholders. They would meet regularly and with the sponsor to discuss project issues in order to progress. They would also exchange emails to share ideas and reconcile different viewpoints, such as who should be involved in the test group and whether the data in the test group should be retained or deleted. Powerpoint slides were developed and used as a tool for the practitioners to communicate with stakeholders about the benefits of using the m-learning tool. They delivered face-to-face presentations, sometimes with the sponsor or with other senior managers, and also used video conferencing. The online forum, created as part of the test group before implementation, was also used as a tool that supported interaction between practitioners, sponsors, executive managers and learners to exchange ideas about how to encourage learners to adopt and use the tool to learn from each other, share information and collaborate across the company.

These various examples of shared repertoire reflect the high level of effort practitioners put into engaging and liaising with stakeholders, which allowed them to build strong interpersonal relationships. Practitioners’ interpersonal relationships with stakeholders helped them through project development and implementation and beyond, even after implementation was complete.
Chapter 7 – Within-case Analysis – Case 3

This chapter presents analysis and discussion of the last of three within-case analyses and follows the same structure as the previous two chapters. Firstly, this chapter presents background and research participants. Secondly, this chapter analyses how Case 3 relates to the research questions, using the same themes as the previous two chapters, with the first two research questions discussed in three themes. This chapter concludes by addressing the final research question and provides an overall discussion of how this case relates to CoP theory.

7.1 Background

Company C is a large financial services company that operates in Australia, New Zealand, Asia, the UK and the US. Company C provides personal and business banking, superannuation, investment, insurance products and services. The customers the company serves include personal and business customers through various channels including face-to-face channels such as agents, financial advisers, brokers and branches and online. Company C employs over 35,000 staff.

The m-learning case study under investigation is based on m-learning (referred to as the m-learning ‘project’ or ‘initiative’ in this study) implemented in the company’s Corporate and Private Client Sales division. It was the first of its kind delivered in the company. This project was run as a Proof of Concept implementation to understand the benefits of mobile knowledge reinforcement as a way of embedding learning from previous training programs, and to record user experience with the selected tool. The project was also part of a sales initiative to complement previous face-to-face training workshops conducted throughout 2016.

The m-learning project was delivered through an m-learning application (app or tool) developed by an external vendor using a gamified approach to m-learning. Approximately 140 learners were invited to use the app, of which approximately 130 learners participated. Learners receive two to three questions every few days based on what they learnt during intense face-to-face training workshops. A brief questionnaire was delivered via email or an app accessible through smart phones (Android or iPhone). Several short videos featuring the trainer talking about the training material was also accessible through the m-learning application, which could also be used on a range of devices including mobile phones, tablets, laptops and desktops.

Learners competed against each other to demonstrate recall of key concepts from the training workshops they had previously attended. Individual learner and team results were tracked using a leader board accessible to the participating learner and their managers. Participation in the m-learning project was optional, but strongly encouraged. The leader board kept track of the learners’ progress in using the m-learning application, reported to the learner’s manager via email.

The current sponsor, Head of Learning Design and Career Development, described the company as operating in a highly competitive environment. The sponsor saw the company as struggling to adapt to market changes, pressure, margins and regulatory changes, and viewed the m-learning project as playing a part in improving the capability and performance of its sales staff through training. The sponsor described the project as having the following objectives:
• Providing staff with just-in-time learning, especially sales staff that are busy and travel frequently to see customers
• Strengthening knowledge retention of training content delivered as part of face-to-face training
• Gaining access to data and analytics to develop a business case to further roll out m-learning.

See Figure 7.1 for a summary of key events that occurred in the project. Practitioners and vendor presented the idea of trialling m-learning in the company to the leadership team in September 2014. However, between September 2014 and 2015, the project stalled because practitioners could not secure sponsorship and funding due to low level interest from the leadership team. There were two organisational restructures that also caused delays to the project’s progress (i.e. June/July 2015 and March/April 2016). Progress accelerated after March/April 2016, when the project secured funding and a contract was signed with the vendor in August 2016. Project implementation began in September 2016 and ended in early December 2016. After the project was completed, research investigations were conducted from early to mid-December 2016.

![Figure 7.1: Case 3 timeline – key events](image)

### 7.2 Research participants

Using the same approach as the previous two cases, research participants were selected based on the data collection methods detailed in Chapter 4 (section 4.5). In-depth interviews were conducted predominantly face to face at Company C’s Melbourne office in December 2016. Eight interviews were conducted face to face with participants in Melbourne. Two interviews were conducted using video conferencing and two more were conducted by phone. The interviews ranged from 30 to 80 minutes in duration and included a range of roles (Table 7.1). As per the previous two cases, careful consideration has been given to ensure that research participants included a representative sample of practitioners and stakeholders. To preserve anonymity of research participants and for ease of reference, participant codes are used in this thesis (Table 7.1) and any gender references do not necessarily correspond to the actual gender of the participant.
### Table 7.1: Research participants

<table>
<thead>
<tr>
<th>Research participant’s role in the initiative</th>
<th>Number of interviews conducted</th>
<th>Participant code</th>
<th>Research participant’s role in Company C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor (1)</td>
<td>1</td>
<td>C3S1 (Sponsor)</td>
<td>Head of Learning Design and Career Development</td>
</tr>
<tr>
<td>Practitioners (5)</td>
<td>1</td>
<td>C3P1 (Practitioner 1)</td>
<td>Business Optimisation Manager, Business Banking</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3P2 (Practitioner 2)</td>
<td>Consultant, Learning Solutions, Core Capability, People and Culture</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3P3 (Practitioner 3)</td>
<td>Program Co-ordinator, Curriculum and Training</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3P4 (Practitioner 4)</td>
<td>Senior Consultant, Sales Enablement</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3P5 (Practitioner 5)</td>
<td>Consultant, Sales Enablement</td>
</tr>
<tr>
<td>Learners (6)</td>
<td>1</td>
<td>C3L1 (Learner 1)</td>
<td>Client Manager, Adelaide based</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3L2 (Learner 2)</td>
<td>Client Manager 1, Melbourne based</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3L3 (Learner 3)</td>
<td>Client Manager 2, Melbourne based</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3L4 (Learner 4)</td>
<td>Client Manager, Brisbane based</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3L5 (Learner 5)</td>
<td>Client Executive, Perth based</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>C3L6 (Learner 6)</td>
<td>Client Executive, Sydney based</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The current sponsor (C3S1) was interviewed as a research participant. Five practitioners were working part time on the m-learning project with day-to-day operational roles in different business functions (Table 7.1). In addition to the five practitioners, there were three consultants practitioners liaised with regularly from an external vendor that provided m-learning technology. Even though practitioners worked together on the project, their primary accountability and reporting line is not to the sponsor of the project, but to their day-to-day line managers (highlighted in white text in the shaded boxes in Figure 7.2).
The sponsor and learners were key stakeholders in the m-learning project as identified by practitioners. Six learners were randomly selected by practitioners to participate in the research. Those interviewed worked across five different states in Australia, providing a diverse geographic spread. Two out of the six learners interviewed were senior executives and four were client managers to provide a representative spread in seniority in the company’s hierarchy.

### 7.3 Themes 1 and 2: Practitioner’s perspective

Using the same approach as the previous two within-case analyses (chapters 5 and 6), this section examines the practitioners’ perspective of the m-learning project under two themes to address the research questions (Table 7.2). The clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 3 Cluster Diagrams’. 

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**Figure 7.2: Case 3 project team**

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---
Table 7.2: Research question, themes and theoretical categories – Practitioners’ perspective

<table>
<thead>
<tr>
<th>Research Question 1</th>
<th>Theme</th>
<th>Theoretical categories</th>
</tr>
</thead>
</table>
| What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation? | 1. Practitioners’ conceptualisation of m-learning | • Supporting the learning needs of sales staff  
• Adapting tools to motivate learners |
| 2. Practice work of practitioners | | • Working as a team in an informal manner  
• Working in a bureaucratic context  
• Engaging stakeholders  
• Liaising with the sponsor  
• Communicating with learners  
• Engaging with the vendor |

7.3.1 Theme 1: Practitioners’ conceptualisation of m-learning

This theme explores how practitioners conceptualise the m-learning project, in terms of how they perceive their role and how their worldview may have influenced both their practices and relationships with stakeholders.

7.3.1.1 Supporting the learning needs of sales staff

Practitioners saw their role as supporting learning needs of sales staff and encouraging sales staff to spend more time with customers and less time in the company’s office. In other words, the practitioners shared a sense of a common purpose and believed that m-learning application was a tool that would support the learning needs of sales staff.

There was a push internally to get our [sales staff] on the road ... so we were looking at tools that they might use while they’re on the road and to develop behaviours that got them familiar with doing more activities away from the office. (C3P4)

Practitioners made the connection that time spent in training would take the learners’ focus away from sales activities. Therefore, practitioners emphasised the importance of convenience, up-to-date, brevity and conciseness of training content delivered by m-learning. They also perceived the m-learning application as being preferred by learners because small amounts of training content delivered regularly, every few days, would save learners time as compared to traditional training methods (such as e-learning or classroom-based face-to-face training) delivering relatively large amounts of training content irregularly.

So, the whole point of [mobile learning] is to make it just-in-time learning, short, sharp, easy to digest. (C3P2)

[The m-learning application] only sends you two questions every couple of days. The less amount of time we can take out of our staff’s day the better. C3P5)

Because practitioners emphasised the need for learners to stay focused on sales, they believed that sales staff already receive “lots of training” (C3P5) and are always busy. Therefore, to
attract the attention of learners, practitioners focused on promoting or “selling” the m-learning application as convenient, non-disruptive and appealing or “snazzy” (C3P5). Practitioners believed that m-learning would be attractive to staff that were early adopters of new technologies. Based on this belief, they promoted the m-learning application, emphasising the novelty of the technology.

We were selling this as a new way of helping learners retain information and a fun, sexy, exciting, new foray from a technology perspective that [Company C’s] never done before. Looking at picking up all those people keen to get on board. Early adopter type of stuff. (C3P2)

[M-learning] was an easy and snazzy way to do [training] and most of us have got a mobile phone that can have apps and it’s really quick and easy ... Our staff has never been exposed to this sort of learning before. It’s always been classroom style and online learning but not on the phone. (C3P5)

Practitioners emphasised that staff did not remember training content after attending traditional face-to-face or e-learning training. The m-learning application was perceived by practitioners as a way to overcome this issue, help learners retain training information and reinforce learning from previous training workshops attended.

We know that after some learning intervention the bulk of the information is no longer retained. We have a problem in the business around embedding knowledge. So, we send our participants to a three-day workshop and a week later it’s gone. (C3P2)

7.3.1.2 Adopting tools to motivate learners

In addition to supporting learning needs of sales staff, practitioners perceived the m-learning application as a motivator for staff to pay attention to training content, because it included a “competition” (C3P1) that resembled a game. Practitioners described this competition approach to training staff as both a motivator and de-motivator.

Most practitioners were positive about m-learning and perceived the application as a motivator because they believed that high usage was largely driven by the way the application included a competition in its design, which tended to attract high performers. Practitioners also made the connection that the enthusiasm and high participation rate (or large number) of learners that used the application, also sparked interest from other parts of the company that were not part of the project.

People seem to be really keen to have a go. They tend to be high performers and they want to keep it that way ... We’ve got other areas of the business putting their hand up to use the rest of our licences. Word has spread, which is good. (C3P2)

A lot of them are saying they’ve enjoyed it. The participation rate was good. (C3P3)

It was a bit of healthy competition. (C3P1)

Practitioners emphasised that the competition encouraged greater team participation amongst some staff in learning and sharing training content referred to in the m-learning application.
However, they also reflected on the negative impact of competition. For example, the competitive nature of the m-learning application could add pressure to those staff struggling in their current jobs. For these staff, the m-learning application could have negative impacts from additional peer pressure, adding to their workload by having to use the m-learning application frequently, in addition to the pressures of their day-to-day work responsibilities.

It's a bit of a catch 22. They put the points up to try and help with that team participation. It's not just personal but your team as well. The idea was that if there's a slacker in your team that the team mates would say “come on Bob you’re letting the team down”. That might not have good repercussions for Bob. He might be battling with his job as it is and doesn't need this extra pressure. I know it is a motivator, but it can also be a de-motivator. It could be a concern. (C3P3)

Furthermore, when one of the practitioners reflected on their personal experience in using the m-learning application, he commented that the competition embedded in the application was not a motivator for all staff. Practitioner 3 used the m-learning application for learning and described the competition as a de-motivator, because he was a late adopter of m-learning and fell behind in accumulating points to improve their position on the leader board. Practitioner 3 was sceptical of the competition being helpful to staff learning – “the driver [for using m-learning] shouldn’t be the points [in the competition], the driver should be to upskill or embed those learnings” (C3P3).

By the time I realised that I was so far behind [in the competition] ... I just lost interest. I think for those that were on the journey early, are potentially enjoying it and running with it because they know that their score could have a positive impact. For those that potentially missed out at the beginning they know that they’re not going to catch up ... Which is sad because it's more about the competition rather than the tool and what you're going to gain out of it other than points. (C3P3)

The competition that was part of the m-learning application encouraged some learners to adopt m-learning, while discouraging others. It is important for practitioners to understand how learners are influenced by m-learning competitions as part of their development and implementation of m-learning initiatives.

7.3.2 Theme 2: Practice work of practitioners

This theme explores practitioners’ practice, their interactions with stakeholders and how their practice allows them to cohere as a Community of Practice. This includes analysing relations among practitioners, their perspectives on expertise and timelines and interactions amongst stakeholders.

7.3.2.1 Working as a team in an informal manner

Practitioners worked as a team in an informal manner, with a strong sense of collaboration and unity and with stakeholders. This was achieved by regularly communication via face-to-face discussions, by phone or email exchange.
Collaboration as a team was really good. We had a good little team and we're all – once we've decided we would go ahead with this – we were all on the same page. (C3P3)

People are quite open to collaboration. (C3P2)

There was no formal project structure and practitioners worked as a team informally and “organically”. They adopted an informal work style and were free to have conversations with each other at any time - “initially [there were] no formal regular meetings” (C3P2). Practitioners did not maintain much project documentation, except for a “loose project plan” that included some project tasks and indicated dates for project task completion.

We didn't have a heck of a lot of structure on this one. There was a loose project plan ... A lot of it works on conversation. Getting up and having a chat with someone. There was a fair bit of it. (C3P2)

The informal way of working resulted in minimal forward planning and a volatile workload for individual practitioners. There were times when nothing happened, and it would be quiet and there would be times when the workload was high and it was “chaotic” (C3P5). In other words, practitioners were flexible and took on different project tasks and responsibilities on an as-required basis and they would be busy at different times.

In Company C things don’t happen then everything happens at the same time. You get funding then you get people. It could be chaotic. We all played different parts at certain points [in the team]. I could be busy scrambling for something at one time but they [other practitioners] may not be so much. (C3P5)

The informal working style also resulted in roles and responsibilities not being well defined or documented. Even though practitioners were very positive about the collaborative way in which they worked, the highly collaborative working style led to practitioners being overly consultative. In other words, several practitioners would be involved in some project tasks which could involve numerous discussion, rather than being clear about which individual practitioner was responsible for which project tasks, resulting in faster completion of tasks with less discussion. Even though frequent consultation helped ensure project tasks were completed thoroughly, comments from practitioners also indicated that this was problematic. According to Practitioner 2, the “super consultative” approach impacted the project’s progress because too many practitioners were involved in some project tasks unnecessarily – “too many people were looking at too many things that was not really necessary”.

Everybody wants to collaborate, and everyone also wants a voice ... We need clear roles and responsibilities here ... Things were slowed down because too many people were looking at things. Waiting for people to provide feedback on things ... We had to be super consultative ... Rather than knowing person A was responsible for this. (C3P2)

The way practitioners worked informally as a team may have been influenced by the distributed nature of practitioners reporting to different managers belonging to different functions in the company, and without clearly defined project roles and responsibilities. All practitioners worked together as a distributed or virtual team and balanced the dual role of their day-to-day organisational role, in different parts of the company, with their practitioner role. As a result,
they would meet on an as-required basis and have visibility of only parts of the project. This way of working also resulted in parts of the project’s complexity not being understood or visible to some but not all practitioners. For example, some practitioners perceived the project as “pretty straight-forward” (C3P1) while others found the project difficult. Practitioners 2, 4 and 5 were more involved in the project and found it difficult to manage project timelines and reach agreement on when the project could be implemented due to the bureaucratic business context of the company.

7.3.2.2 Working in a bureaucratic context

The bureaucratic context of the company, including company restructures in June/July 2015 and March/April 2016, added to project complexity. The restructures impacted the project in terms of changing priorities and making it difficult to secure a project sponsor and funding. Ultimately these factors caused project implementation timelines to be delayed significantly.

Getting some of those reviews across our restructuring process added some complexity and delay. (C3P2)

It was hard to get a Capability related sponsor... They didn’t have the funding ... so we had to go through a different source ... [After the restructure] the business priorities changed ... Our leadership team changed which meant that our focus points and priorities were changing which made it quite difficult for us to continue without the right support. (C3P4)

Some practitioners emphasised that the company’s bureaucratic procedures and decision-making processes also made implementation difficult. Practitioners 3 and 5 expressed frustration in dealing with the company’s bureaucratic procedures and decision-making processes, describing them as “hurdles to cross”, “barriers to break through”, “bureaucracy” and “red tape” that slowed the project down. To demonstrate the difficulty and effort required to deal with the company’s bureaucracy, Practitioners 2 and 4 provided an example of the lengthy procurement process and involvement of the IT Security department. Practitioners had to engage in “a lot of conversation” (C3P2) and secure extra funding to get external lawyers to create a contract with the vendor, tailored to proof of concept projects, because the Procurement department was inexperienced in creating such contracts.

The procurement process was very long because of the nature of the privacy of the data... There was a lot of conversation with procurement and IT security. (C3P2)

Procurement took 3-4 months because they weren’t familiar with creating contracts for proof of concepts ... That was quite difficult. (C3P4)

Practitioners developed strategies to manage the company’s bureaucratic procedures and decision-making processes. For example, Practitioner 5 was given the responsibility to complete all tasks associated with complying with the company’s various checklists, compliance processes and liaising with the company’s IT department. This freed practitioners to focus on other project tasks not associated with compliance. When Practitioner 5 reflected on his practitioner role he described it as “my role was to tick the boxes [to comply]” and expressed frustration in having
to complete many “checklists” and “co-ordinating” to gain approvals and using different systems and applications.

There are a few systems [in the company] that we need to mark off and get our bosses to mark off. It’s a lot of co-ordinating. You have to hit the right buttons in the right systems which can be frustrating. [To comply] there are different applications that you have to click through and some of these are new [and] we don’t understand how all these things work. (C3P5)

The long delays in project implementation caused frustration and stress amongst practitioners. According to Practitioner 3, long project delays may have contributed to one of the practitioners leaving the company out of frustration.

[He] has been on the journey for so many months. I think he was, quite rightly so, getting frustrated ... Wanting to land [finish] it ... So, he’s already left [the project]. (C3P3)

Despite the problems caused by restructure, they also helped free up some of the practitioners’ capacity, because there was a hold on all new initiatives within the company during the restructure. As part of the company’s restructure Practitioner 2 was relieved of work on other projects and could then take on and complete more work on the m-learning project.

With all the restructuring going on, business had put a stop on all new initiatives. So, there’s flexibility in managing time around the things you’re carrying into the new structure. (C3P2)

On reflection, some practitioners saw their involvement in the project as a learning experience. After implementation, practitioners could reflect on and understand the impact of their inexperience in implementing proof of concept and m-learning projects in the company. Comments from some practitioners indicate that through the experience and learnings gained with this project, they were more confident in being able to implement proof of concept and m-learning projects in future.

Thinking back. We were slowed down because we didn’t know what we didn’t know … Now that we know the process … that will probably help if we had to do it all over again. (C3P5)

7.3.2.3 Engaging stakeholders

Some practitioners emphasised they had to actively engage key stakeholders to gain their support for the m-learning initiative, especially after company restructures. Two organisational restructures occurred during the life of the m-learning initiative (in June 2015 and March 2016 respectively). These changed organisational priorities and stakeholders often changed after each restructure. The practitioners found it difficult to align the understanding of numerous stakeholders amidst these restructures in what the m-learning initiative was trying to achieve. They found it difficult to engage with different stakeholders because several stakeholders had a different understanding of the project’s objectives and the benefits m-learning could provide to the company. Practitioners had to be patient and make efforts to engage and explain the
project to different stakeholders, so they would understand project objectives and support practitioners in project development and implementation.

Everyone had a different understanding of what we were trying to do. That was difficult – explaining what we were trying to do. (C3P4)

Practitioners focused on liaising and engaging with key stakeholders to validate the m-learning application: that it was suitable and beneficial to the company. When some stakeholders commented they could see the value of the m-learning application and supported the project by offering to be part of the pilot project to test it, this initiative encouraged practitioners and strengthened their sense of purpose, that is, they were working on a project that was “worthwhile and everyone found that there would be value in what we’re doing” (C3P4).

Everyone who was reviewing it [project documentation] was actually quite excited ... All offered to be part of the pilot to test it out. So, that helped us validate that what we were doing was worthwhile. (C3P4)

7.3.2.4 Liaising with the sponsor

The sponsor played a significant role in engaging with key stakeholders to gain their support for the project. Practitioners relied on the sponsor to build strong ongoing relationships with senior managers in the company. This reliance may be due to the sponsor being perceived by practitioners as being a “really good relationship” manager who had a “lot of contacts into the business” (C3P2). The reliance on the sponsor may also be reflective of the bureaucratic context of the company. Because the sponsor was more senior than all the practitioners in the company hierarchy, their influence at more senior levels may be stronger than practitioners in gaining support for the project at senior management levels.

Practitioners engaged with the sponsor on an as-required basis and described their interactions as generally positive. The way they described the sponsor was reflective of the working relationship, which can be described as autonomous and interactions were on an as-required basis. This meant that practitioners provided the sponsor with information to keep him up-to-date with project progress, including any issues impeding progress. They also engaged with the sponsor at important or “crucial” times, such as when the project had to secure funding to progress to implementation (C3P5). They emphasised that the sponsor was not deeply involved with the project, describing the sponsor as “extremely hands off” and “very strategic”, delegating the whole project “heavily” to practitioners to “make things happen” (C3P2).

[The sponsor was] very light on ... He likes to know what’s going on but mostly about approvals and knowing that it’s going smoothly and there’s no hiccups. He’s there at crucial times when we need him. (C3P5)

7.3.2.5 Communicating with learners

In addition to significant efforts expended on engaging with stakeholders, practitioners also placed great importance on project communications with learners. They believed project communication delivered to learners during implementation was effective. This view was based on positive feedback the vendor provided to practitioners and a perception that the company had a strong internal communications capability that the project leveraged. Practitioners drew
a connection between high usage of the m-learning application with effectiveness in how the project communicated with learners and key stakeholders.

We have quite a robust comms [communications] arm in this business. There’s a raft of comms that were designed in conjunction with when we were launching ... The work ... in terms of getting business engagement, was superb. The buy in was huge. Our engagement rates are extraordinarily high ... [The vendor] have told us that we're one of the most organised and engaged groups they’ve worked with. (C3P2)

If we didn’t have someone like that [C3P1] within the business it wouldn't have been as successful ... I think the comms generally worked well. C3P1’s comms team were very good. Very professional and stuck to the timing that we had so that was easy. (C3P3)

I don’t think we've done too badly on comms this time ... We've done alright with the comms. (C3P1)

Practitioners believed that ongoing project communication maintained learners’ interest and motivated them to continue using the application from September to December 2016. For example, a weekly email was developed by practitioners that was distributed using the Executive General Manager’s email to promote the m-learning application. The email included the leader board and highlighted the names of specific sales staff that were using the application and on top of the leader board.

I think we did a good job of the Executive General Manager communicating this every week as a leader ... promoted it. I think that worked really well ... [The weekly emails] kept the interest [of learners] up all the way ... communication is so important. (C3P1)

7.3.2.6 Engaging with the vendor

Practitioners emphasised a positive working relationship with the vendor, communicating regularly by phone and via email. Because the vendor was based in Europe and the practitioners in Australia; the time difference resulted in difficulties in scheduling meetings and therefore emails were frequently exchanged. Furthermore, there were time was lost waiting for information to go back and forth between Europe and Australia due to time difference in business working hours. These factors caused some delays to project development and implementation. However, on balance, practitioners described their experience with the vendor and the time difference as “not too bad” (C3P3), as they accepted these issues as part of the nature of the company being an international company and not operating solely in Australia.

We had delays in getting information back. So, that kind of stretched some of the processes [in terms of delays]. (C3P2)

[Vendor was] based in Europe so you had the time difference. But that wasn't too bad. We managed with that and you do being international. Not sitting in your own backyard anymore. (C3P3)

The vendor was described by Practitioners 2 and 3 as “great”, “consultative”, “helpful”, “quick to respond”, “obliging” and “easy to work with”.
I found them [vendor] very consultative. Very helpful. Quick to respond. If they don’t know they are also quick to put their hand up and say, “I don’t know I will find out”. From a vendor perspective, they have been really good. (C3P2)

[The vendor] was very obliging. Nothing really was a problem for them. “We can do that. We can change this.” Suggestions we had – they were always pretty open to doing that for us where they could, where technology allowed... They were easy to work with... The hurdles that were brought up [the vendor] was able to fix. (C3P3)

Another characteristic of the positive relationship between the practitioners and vendor was how the former leveraged the latter’s m-learning implementation experience. Because none of the practitioners had any experience with implementing m-learning applications, they had to rely on the vendor’s experience. They emphasised that they valued the m-learning vendor’s deployment and implementation expertise and described their experience with the vendor as “quite good” (C3P4).

We had learnings on how to deploy as well. Deploying this was quite new to us. We used the vendor to help us on how to deploy and make sure we got value out of our deployment. (C3P4)

Practitioners were resourceful and skilled in liaising with the vendors to complete technical tasks and manage associated issues. Consequently, technical complexities were not visible to the sponsor and learners, and they did not raise technical issues as being a problem in their experience with the adoption of m-learning, or during m-learning development and implementation.

7.3.3 Summary: Practitioners’ perspective

Practitioners perceived their role as supporting the learning needs of learners (sales staff) by helping them retain and reinforce their learning from previous face-to-face training. This provided practitioners with a shared sense of purpose as they worked together, liaised and engaged with stakeholders to develop and implement m-learning. Through their own experience and feedback from learners, practitioners had mixed views about whether m-learning was a motivator or de-motivator for staff.

The way practitioners worked together and with stakeholders could be characterised as informal and highly collaborative. Practitioners commented they had a strong sense of collaboration and unity with stakeholders, which was established and maintained by regularly communicating and liaising on an as-required basis. The informality of work practices caused issues regarding practitioners’ workload and delayed the project. For example, minimal forward planning or project documentation resulted in volatile workloads for some practitioners. Also, unclear and undocumented roles and responsibilities resulted in practitioners being overly consultative, which also slowed the project’s progress. Even though they worked informally with stakeholders, their informal approach allowed them to build interpersonal connections. They actively liaised and engaged key stakeholders to confirm their understanding of project objectives and gain their support for the project. Practitioners placed great importance on
communication, in particular with learners, and they drew a connection between high adoption rates of m-learning with effectiveness of their communication with the learners.

On the other hand, practitioners interacted less frequently with the sponsor. This may be because the latter was not involved with specific project tasks. On an as-required basis, the practitioners would escalate important issues that they could not resolve amongst themselves to the sponsor (for example, securing project funding or engaging with certain senior managers). The sponsor was also relied upon by practitioners for establishing and maintaining relationships with senior managers. This reliance was based on the practitioners’ view that the sponsor was well connected in the company with existing relationships with senior managers who could be leveraged, including his own seniority in the company hierarchy.

Practitioners worked closely together in a distributed model where they had to balance dual roles. This distributed model is common company practice and all practitioners have experienced working in this manner in the past.

The company’s restructures, bureaucratic procedures, decision-making processes and limited m-learning expertise all had a significant influence on practitioners and stakeholders. Notwithstanding, bureaucratic contextual factors contributed to development and further delayed the implementation of m-learning. For example, restructures resulted in a change in project sponsorship, difficulty in securing project funding, and difficulty in engaging key stakeholders to arrive at a common understanding of project objectives. Practitioners were skilled and resourceful in dealing with these bureaucratic contextual factors. For example, they organised and allocated the significant workload associated with complying with bureaucratic procedures and decision-making processes to one of the practitioners, and liaised and engaged with the vendor regularly to leverage their m-learning expertise, complete technical tasks and address technical issues.

7.4 Theme 3: Stakeholders’ perspective

This section explores theme 3, the stakeholders’ perspective, and how they conceptualise the project and their role and interact with practitioners. This stakeholder theme addresses research question 2 — *How do m-learning stakeholders, such as sponsors and learners, conceptualise m-learning?* Based on the analysis of this case three stakeholder groups are examined due to the key role they play in the m-learning project, and will be explored in the following order: sponsor, learners, and executive managers motivating learners.

7.4.1 Sponsor’s perspective

This section examines the sponsor’s perspective of the project in terms of how C3S1 perceived their role, the role of practitioners, and how their assumptions and perceived objectives influenced practitioners. Data from interviewing the sponsor defined several theoretical categories (Table 7.3). The detailed clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 3 Cluster Diagrams’.

| Table 7.3: Theoretical categories – Sponsor’s perspective |
Theme 3

<table>
<thead>
<tr>
<th>Theoretical categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsor’s perspective</td>
</tr>
<tr>
<td>1. Focusing on rapid implementation</td>
</tr>
<tr>
<td>2. Seeing return on investment as important</td>
</tr>
<tr>
<td>3. Having a long-term vision and understanding sales staff</td>
</tr>
<tr>
<td>4. Delegating project delivery to practitioners</td>
</tr>
<tr>
<td>5. Sponsor directly engaging senior executives and securing resources</td>
</tr>
</tbody>
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7.4.1.1 Focusing on rapid implementation

Rapid implementation of the project was one of the most important factors driving the sponsor’s interactions and relationships with practitioners. There was acknowledgement by the sponsor that he was not a good leader, because he was “impatient” and tended not to listen to practitioners. He rationalised his “terrible” leadership by emphasising that in project implementation “speed was important” (C3S1).

They pushed back the whole time. I said, “crash it in”. They said, “it’s better to do it this way and that way”. I’m still a bit impatient... I’m going times ticking ... I probably was a terrible leader. I just gave them [practitioners] no choice because I knew speed was important. So, I didn’t care about what can’t be done. (C3S1)

The sponsor wanted a sense of urgency to improve the capability of the company’s sales staff. The urgency that practitioners applied to the m-learning initiative was driven by his perception that the company was struggling to adapt to market and regulatory changes. And further, that m-learning could help improve the company’s competitiveness by improving the capability and performance of its sales staff through training. He was encouraged when the new People Strategy was signed off by the Board in June 2016, which recognised the importance of capability improvement and training as a priority.

According to the sponsor, emphasis on the rapid implement of the project was contrary to the slow pace that the company typically takes in implementing technology. He conveyed a sense of urgency to practitioners and executive stakeholders engaged to gain their support for the project – “I just said to everyone speed is everything here” (C3S1).

Normally what we do is spend a year looking at providers, maybe try build it ourselves, and I just cut through all of that and went no I’m taking this opportunity. (C3S1)

The phrase “crash this thing in” was used several times by the sponsor during the interview. The phrase “crash” refers to the need to implement the project quickly with little or no structure or planning. This was because project structure, planning and process were not important to the sponsor. This approach may have been taken because of the novel nature of the project. The sponsor had no prior experience in m-learning implementation. This was also the company’s first attempt in implementing m-learning for training. Due to the constant emphasis on rapid implementation, the sponsor did not see project structure, governance, planning or following the company’s typical project processes as important. He explained that he “definitely didn’t help plan and do it [implement m-learning] in a proper way”.

161
Even though we had no experience and we crashed it in with very little diligence or planning – people are still using it. (C3S1)

Practitioners tried to resist rapid implementation timelines imposed by the sponsor. Despite resistance from practitioners, the sponsor insisted on rapid implementation timelines for the project with a pragmatic push. The sponsor asked practitioners to compromise on planning and structure by describing his perspective – “I don’t care how dirty it is, just get it in” (C3S1).

When working with practitioners, the sponsor described his approach as “directive” and not providing his team with choice – “they just had to do it”. This was an example of how the sponsor took management control to ensure the project was delivered in a rapid manner.

I worked with a key person, one of the project people, explained it to them, do a demo get them on board, explain what’s needed, like here are the three things you need to do, pretty directive to be honest... I told my team “guess what you’re going to do this too”. They didn’t have a choice. They just had to do it. (C3S1)

7.4.1.2 Seeing return on investment as important

The sponsor focused on the rapid implementation of the project because he wanted to collect data that would demonstrate that m-learning provided benefits to the company that far exceeded the roll out costs of implementation. This reflects the organisational cost constraints the sponsor had work within. Demonstrating that m-learning provided a high return on investment was important to the sponsor. He believed m-learning was a low-cost way to reinforce the investment the company has made training its sales staff in previous face-to-face training, because staff would retain more of what they’ve learnt using m-learning as training reinforcement. Based on his experience, the sponsor believed that without a m-learning application like the one the project was trialling, staff would lose 80% of the learning from past training – “this [m-learning] will reinforce the learning ... [without it] you lose 80%” (C3S1).

To focus on return on investment is also related to the sponsor’s day-to-day organisational role. The evaluation of training programs and assurance of a high return on investment in training spend is part of his day-to-day organisational role as Head of Learning Design and Career Development. The sponsor drew a connection between the low cost of the m-learning project (approximately $20,000) with improving reinforcement of the company’s $1 million training program.

I have a formal role in the Learning Strategy ... we're investing a lot of money in this [training] program – how do we evaluate it but also make sure you spend a little bit of money on mobile reinforcement fees? It's not expensive. $20K but you spend $1M on the [training] program. It's just a no brainer ... return on investment. (C3S1)

The sponsor perceived the m-learning project as providing critical data, through the m-learning application’s in-built reporting, to complete a business case and convince the company’s decision makers that m-learning improves sales staff capability. His optimism about the project is evidenced when he described m-learning as “where we need to go” and that the project was an “off the desk type experiment... to build a business case... to [convince] decision makers”. The
sponsor emphasised that m-learning’s in-built reporting provided enough evidence, in terms of data, to build a business case to justify implementing m-learning further in the company.

When you’ve got the analytics, I could prove ... there's all the research but here's actually the facts. When you take someone and say we’ve already done this inside Company C. Here’s the results ... this is a no brainer. There's improvement. Then they can make a decision ... if I were to talk about it and try and get funding they would say it’s a good idea, but it would go nowhere. (C3S1)

The return on investment evidence the sponsor refers to was based on current reporting showing a large proportion of learners using the m-learning application and answering more test questions correctly in their second attempt, after getting test questions wrong in their first attempt. Even though the sponsor placed great importance on m-learning reports, data and analytics to develop a business case to implement m-learning to other parts of the company, practitioners did not express the same level of importance or excitement about the next phase of the project. This may be due to impending change in the project sponsor providing practitioners with potentially different priorities and perspectives.

**7.4.1.3 Having a long-term vision and understanding sales staff**

In addition to the focus on rapid implementation and return on investment, the sponsor emphasised a long-term vision for the company’s m-learning. According to him, part of the next phase of the project should be focused on applying concepts learnt in training. This means that m-learning would support the application and practising of new skills with customers in the future. The sponsor was enthusiastic and excited when he described the project and its future – moving from the current project phase of “knowledge reinforcement” to “knowledge application” as the next step.

That’s quite exciting. So, I think you’re just constantly looking for opportunities that make sure if you don’t remember it you’ll never do it, but now that you’ve remembered it, how do I make sure you’re actually applying it and practising it with real customers? Which is part of our whole design. We’re obviously massively focused on how you will practise this with a customer. (C3S1)

The sponsor's enthusiasm and vision for m-learning was part of his personal and professional interest and expertise in following the latest technology developments in m-learning. He illustrated his knowledge of the vendor’s plans to release new functionality in the following year that would support knowledge application. This new functionality allows sales staff to practice sales pitches or presentations using voice and video recordings that utilise existing smart phone’s audio and video recording functionality. The recordings would be reviewed by expert trainers and sales staff coached on how to improve their sales pitches and presentations utilising audio and video recordings.

It only matters if people try and apply this to their real customers. So, this is knowledge reinforcement ... The provider is innovating so they have new functionality coming out next year. Just say you have a customer – we do a lot of pitches. So, now they can actually – through the app use – you've got a really important pitch – do it in two minutes. Record it on your phone and send it to me and I'll watch it for coaching. Now
we're talking from knowledge reinforcement to now I want to see your skill in this. (C3S1)

The sponsor also believed he had a good understanding of the needs and motivations of sales staff. This was reflected in how he described the m-learning application as meeting the needs of busy sales staff with just-in-time learning. His understanding of sales staff was also reflected in the way he communicated to sales staff about the benefits of using the m-learning application and how it would help them in their jobs. The sponsor believed sales staff were being “pressurised to be out with customers” and not spending time in the office.

The rationale around giving people access to just-in-time learning. Because they're too busy, they don't want to sit at their desks. They're out seeing customers. (C3S1)

The novelty of the m-learning project was emphasised by the sponsor and he described the project as “... a bit of a pioneer trying to move [Company C forward]”. While he was positive overall about the m-learning project, there was a sense of frustration and he was “a bit upset” (C3S1) when he perceived the company as losing their lead in training and improving the capability of their staff. He criticised other large companies that believed in outdated training and learning approaches such as using outdated Learning Management Systems. He also criticised the company’s Human Resources department as not understanding the latest in training and improving the capability of their staff, such as “peer-to-peer learning” (C3S1).

Six/seven years ago we were really on the cutting edge of virtual learning and we've somehow lost that ... I still speak to other big organisations that still are trying to write LMSs [Learning Management Systems]. We are so past that. We are thinking of peer-to-peer learning and all that sort of stuff. But I just don't think even HR [Human Resources] people get it yet. (C3S1)

7.4.1.4 Delegating project delivery to practitioners

Even though the sponsor commented he was disappointed in the company and its approach to staff training, he did not seem to share this view with practitioners. This may be because the sponsor wanted practitioners to maintain a positive view of m-learning. And he did not want his disappointment to influence practitioners in a negative manner that could impact their focus on implementing the project rapidly.

Based on the sponsor’s comments, he had a high level of confidence in practitioners’ capabilities to deliver the m-learning project and described them as reliable, competent and capable. This allowed the sponsor to delegate project tasks to practitioners with confidence. Even when some practitioners “struggled”, the sponsor was confident he could rely on the team to “get stuff done” and deliver the project (C3S1).

I can't manage projects. Luckily, I had a good project manager underneath me ... I had all the infrastructure. So, that's really helpful ... They are smart people and they could work it out. [C3P2] is brilliant ... Capable people really ... I knew people that know how to get stuff done. (C3S1)
As an example of the sponsor’s delegation regarding the compliance process to introduce the new m-learning application, the project work was delegated to practitioners. The sponsor did not engage in the process of engaging the company’s Technology department, as it was described as a “prolonged” process he did not understand. The company had a complex compliance process that had to be followed for the introduction of new technology to the company. The sponsor relied on practitioners to take accountability and complete the entire compliance process required to implement the m-learning application.

I don’t really understand all of that… They [practitioners] took care of all of that. To making sure that the [Company’s] Technology [Department] was happy … Whatever that process is. It’s a bit prolonged. (C3S1)

7.4.1.5 Sponsor directly engaging senior executives and securing resources

While delegating work to practitioners, especially work regarding compliance with company processes, the sponsor was involved directly in engaging senior executives and securing resources for the project, because he wanted it implemented quickly. He emphasised that senior executive support and involvement was important to motivate staff to use the m-learning application and perceived the engagement of senior executives as part of his project sponsor role.

It’s really important the leaders drive this in their team… the principle is that the leaders are driving this in their business and it’s visible on a weekly basis. So, that’s certainly what I think is one of the reasons why it’s working – getting the leaders to participate. (C3S1)

The sponsor provided an example of his direct involvement in engaging senior executives to rally their support for the project – “I just phoned them and sold the idea to them [senior executives]”. He saw one of his strengths as engaging with senior executives and believed that he was successful in gaining their support, because he understood their perspective and what they embraced in terms of interest in technology. Senior executives were described as “not understanding social [learning] but were keen to embrace technology”. The sponsor also described his role in engaging senior executives as “kind of selling it [the project]” by emphasising technology elements of the project and perceived that he was successful in gaining their support by using this approach – “he’s [senior business executive] like no brainer go for it” (C3S1).

The company’s “good culture” was also emphasised by the sponsor, where leaders were visible, and supported and promoted training. The sponsor made a connection between his perceived success of the m-learning application with the company’s culture where there was an expectation that leaders were active in training. He described this as a norm of the executives in the company – “they [executives] are used to that”. He believed that this expectation helped the m-learning project and made the engagement of senior business executives “quite an easy job”. To illustrate what he meant by the company’s good culture and how this applied to training, the sponsor provided the following example.

Leadership is a contact sport, so whenever we do the intervention [training] we say it’s got to be co-facilitated with our leaders. They have to be in the room. None of this just
a stock training guy talking. So, we've got a good culture. They are used to that. So, this is quite an easy job. (C3S1)

Another area where the sponsor had direct involvement was in securing resources for the project. He took responsibility and personal action to gain senior executive support to gain funding for the project and secure staff. The sponsor emphasised that securing the right staff in a timely manner for the project was “quite complicated”. He was frustrated when the company’s processes were slow to meet his demanding timelines for project delivery. To rapidly secure staff the sponsor did not rely on the Human Resources department, but rather sourced and selected two staff directly from different parts of the company to join the m-learning project team.

I ended up getting people outside … HR [Human Resources Department] are pretty hopeless … So, if I went through the official channels we’d still be here … I got two people that could work hands on through all the technologies. (C3S1)

7.4.2 Learners’ perspective

In-depth analysis is presented in this section in terms of how the learners perceived their role in the m-learning project, the role of practitioners, and how their worldview and assumptions influenced practitioners. Data from interviewing several learners (C3L1, C3L2, C3L3, C3L4, C3L5 and C3L6) defined several theoretical categories (Table 7.4). The detailed clustering diagrams used in selecting focus codes that were raised to theoretical categories are in ‘Appendix 2 Case 3 Cluster Diagrams’.

Table 7.4: Theoretical categories – Learners’ perspective

<table>
<thead>
<tr>
<th>Theme 3</th>
<th>Theoretical categories</th>
</tr>
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<tbody>
<tr>
<td>Learners’ perspective</td>
<td>1. Experiencing m-learning as fun and a positive experience</td>
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<td></td>
<td>2. Valuing m-learning as convenient and efficient</td>
</tr>
<tr>
<td></td>
<td>3. M-learning competition motivating many learners</td>
</tr>
<tr>
<td></td>
<td>4. Learners being social, helping and supporting each other</td>
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</tbody>
</table>

7.4.2.1 Experiencing m-learning as fun and a positive experience

When learners reflected on their overall experience with the m-learning application, they expressed positive comments. Learners 1 and 4 commented that the m-learning application would be beneficial to other staff and should be implemented more broadly – “I think it would be very beneficial to other people” (C3L1) and “I’d love to see this rolled out to a more broader group” (C3L4). Most learners interviewed commented that they understood the m-learning application, as it reminded them of the training material they had learnt in the past. Overall, all learners (except Learner 1) described a positive experience with the m-learning application in terms of reminding, revisiting and consolidating their learning.

It definitely does [remind the learner of training material learnt in the past] … When you’re focused on your work all day you just forget about all these tools and concepts
that you've learnt about and so then when you just take five minutes to click on something – it just gets your mind thinking about it for a minute during your day. (C3L2)

I think it's good. Consolidating the learning in that manner was really good. (C3L3)

[M-learning] really helped revisit things that you wouldn’t usually revisit... think it’s a really good idea to revisit the training ... Challenging your memory ... it was great ... It's about reinforcing our learning of that specific subject. Which worked. (C3L4)

So, what it does do is bring it [what’s learnt from training] back to life. (C3L5)

It’s certainly good to get it [training content] reinforced rather than just doing a workshop and then walking away ... Absolutely agree that it's [m-learning is] a good thing ... It tested you and challenged you to actually remember and recall what you've gone through. (C3L6)

Furthermore, some learners described their experience as “fun” (C3L4) and that the use of the m-learning application supported their learning needs. Some learners recognised the effort practitioners put into their training. This can be evidenced when some learners commented that the m-learning application was helping learners get “more passionate” about training rather than seeing it as something that is “forced” on the learner (C3L4). According to Learner 4 the company’s traditional technology and training approach was “draconian” and this was in stark contrast to a more positive tone in describing the m-learning application as “cool” and “fun”. The views of Learner 4 may also have been influenced by a colleague, who asked them to provide positive feedback about the m-learning application, and that he enjoyed using the application. Furthermore, Learner 4 was advocating for m-learning because that “would really apply to a lot more training that we do” (C3L4).

Our systems [technology and training] are quite draconian being a big [organisation] ... So, anything that makes learning something a little bit easier and a bit more fun, definitely would help ... I've spoken to one of my other colleagues who asked me to make sure I tell you we had fun. It was fun, and you did learn a bit out of it ... Turning it from – they’re forcing us to do a course to “oh wow isn’t this cool, and you'll have fun and actually learn about something”. (C3L)

Learner 5 also commented that the team had fun with “bantering” and had valuable “conversations”. Learner 5 described feeling a “sense of community” that was fostered through the competition and the application. By way of example, he described a team member proactively supporting other team members overcome technology difficulties or helping them answer certain questions.

Some people really got into it and got quite competitive. Which was fun because there was a lot of bantering going along with the teams participating. (C3L5)

7.4.2.2 Valuing m-learning as convenient and efficient

In addition to commenting on the positive experience with m-learning, the learners also placed great value in the convenience and accessibility of the mobile phone (or iPhone) as being important to their uptake of the m-learning application. Some learners emphasised that they
always had their phone with them and would have “no lag time” or delay in getting the latest information or updates (C3L3). This provided the opportunity for learners to answer the questions as part of the m-learning application as soon as they received it, with no delay. This was important, as some questions were timed and the quicker the questions were answered, the more points the learners received, adding to their total points balance on the leader board. Easy access to m-learning training content also came in the form of an email, so there was another option to access questions and training material.

Just convenience. I’ve always got it with me... there was no lag time. If you wanted to attempt the question as they were made available that was an option to you [on the phone]. The other option was an email and if you’re at meetings or you can’t see your emails for any period of time then you won’t get the questions. I thought that was good. Just the accessibility. (C3L3)

The convenience of providing access to training content via the mobile phone allowed some learners to review the material while they were in transit to work. Some learners preferred accessing the m-learning application on their iPhone “purely because of ease” and convenience (C3L4).

So now we’re finding ourselves doing it on the bus, train, car on the way to work. I have it on my personal iPhone... Some people travel an hour on the train and they do theirs on the train. The app was definitely preferred. (C3L4)

Learner 6 also valued the convenience of m-learning technology and the brevity of training content delivered to learners through the application. Furthermore, Learner 6 found that he enjoyed having to “think fast on your feet”, because some of the questions were timed and the faster the questions were answered, the higher the score allocated.

It was convenient use of technology to reinforce a face-to-face learning environment. You could actually do it in your work environment when time allowed. It wasn’t taking you away. Short, sharp. Couple of questions. I really enjoyed that. Having you think fast on your feet. (C3L6)

Other learners also emphasised that m-learning was preferred over traditional training, because it was not a big impost on their time and offered the convenience of being available to learners when they could access it in their “own time” (C3L3). According to Learner 3, learners did not want to be attending day-long training courses that would take them away from their day-to-day sales focused work, and would rather access training material on their phone because it was perceived to be a better use of their time.

The last thing we need, as employees, is being dragged away to another day course to consolidate the learning. We’ve got the material. The app is on the phone. It was good ... a good use of time. (C3L3)

The geographic spread of learners working in different places, rather than in one fixed location, was described by Learner 4 as the company having “mobile offices everywhere”. This is when m-learning can provide substantial benefits by bringing “everyone together” (C3L4). This was further elaborated by Learner 4 when he contrasted the convenience and accessibility of m-
learning, using the application and technology, to traditional face-to-face classroom training and described traditional training methods as a “big impost” and inconvenience for staff.

We have mobile offices everywhere ... If mobile delivery can bring everyone together – everyone is using the same app the same technology. They can do it from wherever they are. (C3L4)

7.4.2.3 M-learning competition motivating many learners

When learners reflected on their experience with competition, part of the m-learning implementation, five out of six learners interviewed described it as a motivator to engage with training content. Many learners enjoyed the competition and perceived the visibility of their movement on the leader board as a positive motivator to continue regularly accessing the application and training workbooks to answer questions correctly. Some learners used the m-learning application every day, mostly checking their position and that of the team’s on the leader board.

Being competitive... they [learners] did enjoy that [competition]. They could see what other teams around the country were doing in terms of points and trying to get up higher than them ... It did help them reflect on what they did learn and reflect on the course material again ... I would use the app about three times a week... We would probably go on it every day to check where we were on the leader board. We were individually as well as a team. I probably did click on the app every day. (C3L1)

There were some people who were getting quite competitive about it... I noticed some of the names from people around me. They’re doing a lot better than I am. (C3L2)

I found it was a motivator. Everyone has a bit of a competitive streak to them I think. (C3L3)

We got a bit competitive about it... I liked the fact that it’s a competition. It’s a business thing. There’s a reward for the top team. That again [is] human nature. Makes you want to get in and do it. (C3L4)

We’ve had a couple of members here who saw some of their fellow [colleagues] in the East coast that were doing really well and then they became even more competitive to say I want to be at the top of the ladder. Which was good. (C3L5)

Furthermore, some learners emphasised that competition was a good fit with the sales culture of the organisation. This is because sales staff were incentivised with targets and dates linked to bonuses. The self-paced and opt-in nature of the m-learning application also suited sales staff because some learners saw “self-education” as “critical” to their jobs (C3L5). According to Learner 5, competition helped motivate and “drive” learners to actively use the m-learning application, including several in their team.

I think a bit of competition is healthy. It gets a bit of a buzz going ... You have to constantly spend time on your own self education – not only to help yourself but equip and empower you to deal with our clients on an ongoing day-to-day basis. That part of it is critical. The competition definitely helps because people's nature is that there's a
Some learners commented that the m-learning application provided some questions that allocated more points the faster they were answered. Learner 4 described this feature as positive because it forced the learner to instantly pay attention to the training content. He also acknowledged that this feature could also be a distraction to their day-to-day work.

The time sensitivity of some of the questions are a positive and a negative. A positive because you know if they weren’t time sensitive you’d just fall into the trap of leaving it in your inbox. But on the flip side it is time sensitive and you do have other things to do during the day. (C3L4)

Even though some learners did not perform well in the competition they felt that the competition was “healthy” (C3L2) because it encouraged staff to work together to answer the questions correctly and move the team score up the leader board.

That was probably healthy competition. People engaged with that and trying to get the questions right and compete with their peers and whatever. (C3L2)

The comments from learners reflect a dominant view that m-learning competition motivated many learners. It created a common purpose for learners to work together to answer the questions provided by the m-learning application as quickly and as accurately as possible. To maximise their team scores, some learners collaborated, supported each other on a regular basis.

7.4.2.4 Learners being social, helping and supporting each other

Learners believed the competition was a motivator and emphasised that it fostered good team work and collaboration. Learners 1 and 5 provided examples when they collaborated, helped, supported each other and formed a “community” to discuss the questions, and referenced books to find the answers to m-learning questions (C3L5).

[The learners] worked together as a team to answer the questions (C3L1)

It was quite a good thing when people were talking about the questions ... people were having conversations about the answers and the questions and where to find it. Someone would struggle with it and someone would go back to our book – [and say] remember when we did this? (C3L5)

Some learners used the m-learning application in a highly social and spontaneous manner. For example, Learner 4 would physically walk around the office and ask an open and inclusive question – if any learners would want to work together on the questions provided by the m-learning application. This approach may be motivated by learners trying to maximise their team scores. This collaborate team approach may allow the team to answer the questions more effectively and quickly, as compared to working on the questions individually.
You can walk around the office and say I’m doing my questions now, can you do yours at the same time. (C3L4)

Social interaction during the adoption of the m-learning application was inclusive and included learners that were not doing well or “lagging behind”. Learners supported those that were lagging by encouraging them, explaining why it was important, and showing them how easy and quickly they could complete the questions using their mobile phones during transit to work.

When it came to people lagging behind … we went through how easy it could be done from their mobile phone on their way to work – that they didn't have to necessarily spend a lot of time doing it. (C3L5)

Some learners were pro-active in helping other learners who struggled with the m-learning application. This may be another example of how competition is perceived as a motivator in the adoption of m-learning. Thus it may be that these learners were focused on team results on the competition ladder that motivated them to pro-actively help lagging team members to improve the team’s position in the competition.

There’s one team member that has really lagged behind and I’ve found that a team member has gone up to them and said what can I do to help you to finish this because it’s really important that our team gets acknowledged as the top 1 or 2 leads. (C3L5)

The adoption of the m-learning application by learners supported frequent and open conversations amongst them – “we were able to share as a team” (C3L4). Learners felt confident and secure in the team and openly shared what questions they got wrong to learn from other learners. They were self-motivated as they had the help and support within their self-nominated team, of which members were highly social and interactive and did not require much push from their managers.

When someone got one [question] wrong they would speak to the other team members to say that I got that wrong and I don’t understand why I got it wrong. There were some really good conversations and people were going ahead with it. The team really drove themselves. I found that I [as the manager] didn't have to do a lot of it. (C3L5)

Another example of support learners provided to each other, is when some they took on different roles. Learner 4 described themselves as “the young one in the group” and took on the role of “making sure everyone had the app, knew how to work the app and can log in”.

Some learners commented they would only use m-learning if they could observe others using it – “if others don’t then I'm not going to do it [use the m-learning application]” (C3L2). They were observing the practices and behaviours of other learners, such as checking their books, and compared that to their own practices. These observations may have led some learners to link the success of getting the questions correct with the level of effort put into referencing the books provided in previous workshop training.

A lot of people were answering questions and checking their books. I wasn't going to that much effort. So unfortunately, I got quite a few of the questions wrong. (C3L2)
Frequent social interactions between learners also influenced other staff members who were not m-learning participants. Consequently, they started to express interest in the m-learning application. When they asked about the m-learning application, participating learners were willing to share their experiences and encourage them to consider participating in future m-learning implementation.

There was a lot of conversation and then people that weren't on the pilot were hearing what was going on and they were asking “what are you guys doing”. Then we talked about it. (C3L5)

### 7.4.3 Using executive managers to motivate learners

Similar to the previous two cases, research participants indicate that executive managers were important in motivating learners to use the m-learning application. Practitioners identified and recruited executive managers to be part of the m-learning initiative as learners or vocal supporters to motivate other learners.

In keeping with practitioners’ comments, some learners saw the recognition, visibility and praise from executives, via weekly emails, as a motivator to actively use the m-learning application. The effectiveness of the weekly email sent out by the business executive, recognising teams and individuals that did well on the leader board, is illustrated by Learner 4’s comments when he reflected on receiving one of the emails with joy and pride when he was mentioned in the email.

Every week there would be a ladder sent out around teams... [The Business Executive] is a big advocate of it and mentions it in her emails and called out who was leading the board. One week I was leading it and then another lady. That in itself – recognition from your boss' boss' boss is a bit of a good thing. (C3L4)

Furthermore, some learners that had management roles (such as Learner 5) emphasised the need for sales staff to be acknowledged and recognised to motivate them to actively use the m-learning application. Learner 5 would share the national leader board scores with the team every week on a Friday and acknowledged individuals that improved their scores on the ladder. He also emphasised that this was important to encourage learners to work as a team. Consequently, C3L5 took personal responsibility for continuously recognising and endorsing the achievements, on the national score or leader board, of those learners that directly reported to them – “really made sure we acknowledged that” (C3L5).

I used to get the update [of competition scores] every Friday and every Friday I would share. We would acknowledge the people that had moved up the ladder. As of last week, one of my [staff] was at the top of the ladder across the National score board. (C3L5)

Comments from the learners in management roles suggest that the efforts practitioners put into communicating with learners, especially the weekly email sent by the business executive, has had the desired motivation effect on learners to actively use the m-learning application.
7.4.4 Summary: Stakeholders’ perspective

The conceptualisation of m-learning differs considerably between practitioners, sponsors and learners. The way the sponsor and learners conceptualised m-learning and engaged with practitioners influenced practitioners in different ways. For example, the sponsor had a sense of urgency to have the project implemented rapidly so that the project could continue to the next business case stage. The sponsor was frustrated by the company’s bureaucracy and complex processes to introduce new technologies and delegated most hands-on project work to practitioners. Both the sponsor and practitioners worked within organisational cost constraints, demonstrating that m-learning provided a high return on investment. The sponsor also perceived the company as struggling to adapt to market and regulatory changes and was positive that m-learning would help improve competitiveness by improving capability and performance of sales staff vis-à-vis training.

The sponsors’ perceptions, preferences and working style significantly influenced practitioners. For example, he did not see formality and structure as important. He relied heavily on practitioners to work on project tasks autonomously, informally and without structure because he perceived them as competent and capable. The sponsor’s perceptions may have contributed to practitioners’ lack of forward planning and project documentation, and the informal way practitioners worked together and with the sponsor. Practitioners were also left to their own devices in working through the company’s bureaucratic procedures and decision-making processes, such as working with the Procurement department, and engaging an external lawyer to establish a contract with the vendor and the Risk and IT department to gain their approval for m-learning implementation.

On the other hand, learners had limited engagement with and influence on practitioners. Most learners placed great value in m-learning because they conceptualised it as an efficient and convenient way to access training content. Learners expressed mostly positive experiences with m-learning technology and training content, especially in the way m-learning provided them with a social experience that was fun and supported their learning.

Learners motivated by executives or competition tended to be enthusiastic about m-learning and worked collaboratively in teams to support each other in using the application. This is in line with the practitioners’ perception that senior executive praise and endorsement of sales staff would motivate staff. However, like some practitioners, some learners perceived competition as a de-motivator.

Comments from learners indicate they were motivated to use m-learning due to 1) executive praise; 2) finding that m-learning was fun and supported their learning; 3) finding m-learning convenient and efficient; and 4) finding that m-learning competition was motivating. These are mostly in line with comments from the sponsor and practitioners and suggest that the sponsor and practitioners have a good appreciation of the factors motivating learners to use m-learning.

7.5 Discussion

The key findings of Case 3 are discussed in this section, in relation to Research Question 3 – How does a Community of Practice perspective provide insights into organisational m-learning initiatives? By exploring this case from a CoP perspective; social, relational and organisational
complexities of m-learning initiative are revealed, including how practitioners and their stakeholders conceptualise learning. This case demonstrates that interactions between them resemble a CoP because practitioners and stakeholders share learning, knowledge, collaborate to address complex challenges and develop practices in response to the company’s bureaucratic context.

7.5.1 Bureaucratic contextual factors influencing practitioners and stakeholders

This case shows that bureaucratic contextual factors influenced practitioners and stakeholders including: 1) organisational restructures; 2) bureaucratic procedures and decision-making processes; 3) limited m-learning and technical expertise; 4) organisational cost constraints; and 5) the changing competitive and regulatory environment. These bureaucratic contextual factors resulted in significant delays in implementing the m-learning initiative, which took over two years to complete from inception (September 2014) to implementation (September to December 2016).

Company restructures, in mid-2015 and early 2016, contributed to significant delays in development and implementation of the m-learning initiative. Practitioners and stakeholders emphasised that the company’s bureaucratic procedures, decision-making processes and organisational cost constraints also contributed further to the delays. Consequently, practitioners found it difficult to secure a sponsor, funding and establishing a contract to engage the external vendor to supplement their limited m-learning and technical expertise.

Despite these challenges, practitioners were skilled and resourceful in dealing with bureaucratic contextual factors. For example, they organised and allocated the significant workload associated with complying with bureaucratic procedures and decision-making processes to one of the practitioners. They engaged an external lawyer to establish a contract to engage an external vendor and leveraged the vendor’s m-learning expertise regularly to complete technical tasks and address technical issues. Even though the sponsor delegated m-learning delivery to practitioners, he addressed critical issues such as securing funding, resources and support for the m-learning initiative by liaising and engaging with senior management in the company. This case demonstrates that in a bureaucratic context, having a sponsor with a significant role in engaging key senior managers to gain their support for the initiative is crucial. Practitioners relied on the sponsor to engage senior managers. This was because he was skilled in liaising with senior managers and was more senior than practitioners in company hierarchy. This case shows that sponsors that hold senior positions are skilled at liaising with senior managers and may have stronger influence.

Working within organisational cost constraints, the sponsor focused on rapid implementation from the time he took on his sponsor role (around March 2016), emphasising that m-learning work was time-bound. Because the company had a focus on both cost and revenue, the sponsor also emphasised the need for the m-learning initiative to demonstrate a high return on investment, so the initiative can gain funding to be implemented more broadly in the company.

He described broad m-learning objectives that provided practitioners with a sense of purpose, was supportive of practitioners and available to address issues directed to him. Consequently, the way practitioners worked together with stakeholders could be characterised as informal
and highly collaborative to meet the sponsor’s requirements to implement m-learning within cost and time constraints.

The sponsor emphasised that the company needed to improve how sales staff were trained and perceived m-learning to be an important response to changing competitive and regulatory environments. He also demonstrated a long-term vision for improving sales staff capability through training. His understanding of sales staff influenced practitioners to focus on supporting the learning needs of sales staff and adopting tools such as competition that encourages social interaction amongst learners.

Based on comments from learners; practitioners and the sponsor in this case had a good understanding of factors important to learners to adopt m-learning including: perceiving their learning needs being supported, receiving executive praise and valuing social interaction (i.e. using a competition resembling a game), and the convenience and efficiency of m-learning. Practitioners and stakeholders perceived competition as a motivator for learners to adopt m-learning. Some learners in Case 3 were very active in their social interaction and engagement with the m-learning application. This may be due to competition that was part of the m-learning application, and the way practitioners and senior managers provided rewards and communicated with learners on a regular basis.

This case demonstrates that when practitioners have a good understanding and incorporate factors important to learners to adopt m-learning, this can establish strong connections and result in a high level of m-learning adoption. Learners that felt their learning needs were supported, receive executive praise, have positive social interactions (using an element of competition for example), experience the convenience and efficiency of m-learning, have a positive view of practitioners and the m-learning initiative.

Bureaucratic contextual factors influencing practitioners and stakeholders, evidenced and discussed in related theoretical categories in this chapter, are summarised in Table 7.5.

Table 7.5: Bureaucratic contextual factors emerging in Case 3

175
<table>
<thead>
<tr>
<th>Bureaucratic contextual factors</th>
<th>Implications of bureaucratic context</th>
<th>Related theoretical categories</th>
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<tbody>
<tr>
<td>Organisational restructures</td>
<td>• Causing delays in m-learning implementation</td>
<td><strong>Practitioners:</strong></td>
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<td></td>
<td></td>
<td>• Working in a bureaucratic context</td>
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<td></td>
<td></td>
<td>• Engaging stakeholders</td>
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<tr>
<td>Organisational bureaucratic procedures and decision-making processes</td>
<td></td>
<td><strong>Sponsor:</strong></td>
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<td></td>
<td></td>
<td>• Sponsor directly engaging senior executives and securing resources</td>
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<tr>
<td>Limited m-learning and technical expertise</td>
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<td><strong>Practitioners:</strong></td>
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<tr>
<td></td>
<td></td>
<td>• Engaging with the vendor</td>
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<tr>
<td>Organisational constraints (cost and revenue focus)</td>
<td>• Practitioners meeting sponsor’s requirements</td>
<td><strong>Practitioners:</strong></td>
</tr>
<tr>
<td></td>
<td>• M-learning work being time-bound</td>
<td>• Working as a team in an informal manner</td>
</tr>
<tr>
<td></td>
<td>• Practitioners and stakeholders working as a team in an informal manner</td>
<td>• Liaising with the sponsor</td>
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<td>• Communicating with learners</td>
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<tr>
<td>Changes to organisational need and competitive environment</td>
<td>• Supporting the learning needs of learners</td>
<td><strong>Practitioners:</strong></td>
</tr>
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<td></td>
<td>• Perceiving competition as a motivator</td>
<td>• Supporting the learning needs of sales staff</td>
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<td></td>
<td>• Learners valuing social interactions</td>
<td>• Adopting tools to motivate learners</td>
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<td></td>
<td><strong>Sponsor:</strong></td>
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<tr>
<td></td>
<td></td>
<td>• Having a long-term vision and understanding of sales staff</td>
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Even though practitioners and stakeholders referred to themselves working together as a ‘project team’, their comments and practices reflect characteristics of a CoP. These characteristics and projects (Table 7.6) are compared with evidence from this case in sections 7.5.2 and 7.5.3.

Table 7.6: Characteristics of projects and CoPs
7.5.2 What is its purpose and who belongs to the CoP?

The sponsor had a strong focus and put pressure on practitioners to rapidly implement the m-learning project. Despite delegating project development and delivery to practitioners, the sponsor was supportive and available to address issues directed to him. Consequently, practitioners focused on m-learning project objectives and tasks. Practitioners liaised and engaged with senior managers to gain their support to motivate learners and to validate m-learning work and its value to the company. They also engaged senior managers to complete the tasks required to achieve compliance with the company’s bureaucratic procedures and decision-making processes. Where practitioners focused their efforts on engaging senior managers, they established a common purpose.

Comments from practitioners, senior managers and learners indicate that some senior managers played a critical role in the implementation of m-learning. For example, the national leader board scores were used by some senior managers as a discussion point with their teams every week, and they encouraged learners to work as a team in using m-learning. As learners, these senior managers tended to participate as part of a CoP to develop their capabilities, and build and exchange knowledge with other learners. The practitioners and sponsor were also part of this CoP that aligns with the objectives of the project.

This case suggests that the m-learning CoP includes practitioners and stakeholders that have a common purpose and share knowledge between them. The competition in the m-learning project encouraged several learners to voluntarily and actively share information and encourage other learners to participate in m-learning. Practitioners’ active engagement of senior managers and their shared common purpose (i.e. m-learning would strengthen knowledge retention of m-learning training content), meant that several senior managers also self-selected to be part of the m-learning CoP with learners, practitioners and the sponsor.

7.5.3 What holds the CoP together and how long does it last?

Even though practitioners and stakeholders did not refer to themselves as a m-learning CoP, this case demonstrates that competition was important in supporting the coherence of practitioners and stakeholders as a CoP, reflecting mutual engagement, joint enterprise and shared repertoire (Wenger 1998). (See section 5.5.3 for the definition of these three characteristics.) Furthermore, the m-learning CoP seemed to continue even after the project was completed, the sponsor and practitioners commented that m-learning will continue, and
several learners expressed a keen interest to continue their involvement with m-learning. This suggests that the m-learning CoP will continue as long as practitioners and stakeholders show interest in m-learning, similar to CoPs described by Wenger and Snyder (2000).

7.5.3.1 Mutual engagement

The sponsor and practitioners liaised and engaged with senior managers to participate in m-learning by encouraging learners to actively use m-learning. Consequently, senior managers encouraged mutual engagement between learners and them. Comments from both senior managers and learners indicate that some learners supported each other voluntarily and on a regular basis. Several learners commented that they voluntarily interacted and collaborated regularly with the purpose of exchanging knowledge about training material and helping each other with the m-learning application, reflecting mutual engagement. There were also examples of positive social interaction between learners through regular conversation and banter regarding competition. Several learners described their experience with m-learning as fun and enjoyable. This positive sentiment helped with learners’ self-motivation and self-initiation of mutual engagement between them and senior managers. This mutual engagement was encouraged but not forced by their managers and this suggests that sponsor’s and practitioners’ efforts in liaising and engaging with senior managers resulted in the latter taking action in motivating learners to adopt m-learning.

There was also a sense of common purpose that bound practitioners, sponsor, senior managers and learners together through the review of competition scores on a weekly basis. Practitioners, the sponsor, senior managers and learners reviewed competition scores of learners individually and as a team. For example, practitioners and sponsors reviewed competition scores to understand how many learners were using the m-learning application, and what training material elicited different learner responses. Learners and senior managers reviewed competition scores as motivation for them to continue using the m-learning application to improve individual and team scores and ranking on the national leader board. Practitioners and stakeholders (the sponsor, learners and senior managers) also shared information and knowledge about training content to improve their understanding of training content and m-learning. This sense of common purpose is characteristic of a CoP’s purpose “to develop members’ capabilities and to build and exchange knowledge” (Wenger & Snyder 2000, p.142). However, this case extends Wenger and Snyder’s (2000) definition and demonstrates that CoPs also support the delivery of m-learning initiatives, while concurrently CoP members develop their capabilities by building and exchanging knowledge about m-learning training material as well as learning how to deliver initiatives within the bureaucratic context of the company.

7.5.3.2 Joint enterprise

As discussed above, learners worked together and shared information and knowledge regarding the m-learning application and training content with encouragement from management without it being mandated. Furthermore, they were open and inclusive in their interactions. For example, they were open in sharing their wrong answers in order to learn from each other. And they were proactive in helping other learners that were lagging or struggling with the training material to improve their individual and team scores. This is an example of mutual accountability where learners and senior managers work together for the common purpose of
improving their sales knowledge and capability through the use of the m-learning application and are thus rewarded through improvements in their scores on the national leader board.

Practitioners and the sponsor discussed the reports that detailed improvements in competition scores as an indicator of their success against their perceived mutual accountability in helping learners understand training material. They conceptualised that the improvement to competition scores was an indicator of improved learner capability, which in turn improves the company’s capability to compete in a highly regulated and competitive environment. The sponsor commented that he discussed the competition score improvements as evidence of the effectiveness of m-learning that justifies further implementation of m-learning to other parts of the company. This is an example of establishing joint enterprise between the sponsor and stakeholders. He commented that he used the data associated with competition to share a common purpose and mutual accountability with other stakeholders, like senior managers, to continue their involvement in promoting and supporting current and future m-learning implementation.

7.5.3.3 Shared repertoire

The weekly national leader board is an example of shared repertoire in the m-learning CoP, because it is an artefact that is commonly shared and understood between practitioners and stakeholders. However, competition is also an important part of establishing and maintaining a shared repertoire amongst and between learners, practitioners and the sponsor in the m-learning CoP. It further supports social conversations, cultivates common understanding and shares information and knowledge.

Comments from learners indicate that they were working together in a highly social and informal manner. For example, learners would walk around the office and casually ask other learners to work on their m-learning questions at the same time, so they could help each other and ensure they completed their questions in a timely manner to maximise their scores. This became a common working style and shared action. They identified with the practice of working together to improve their sales knowledge and scores using the m-learning application.

A rhythm was also created by releasing the national leader board scores on a weekly basis. This allowed practitioners and sponsors to analyse and learn from regular reporting. Emailing weekly results created a regular rhythm for learners and senior managers to discuss m-learning training content. The information was used as an indicator by learners, practitioners and the sponsor in different ways, but also provided a common focus point and language that they all understood, and this helped them cohere as a CoP. Practitioners and the sponsors reviewed and discussed the effectiveness of m-learning in terms of how learners improved their competition scores at individual and aggregated team levels.

Senior managers were encouraged by both practitioners and the sponsor to review weekly reports and talk to their staff about utilising the m-learning application. This appeared to be effective, as commented by some learners who were managers of sales staff, describing a sense of creating a m-learning “community” (C3L5). The learners checked the leader board regularly to track the movement of individual and team scores and this motivated learners to continuously socialise with other learners to improve their scores. The weekly email from the
Business Executive (prepared by practitioners), national leader board, workbooks with training material and reports generated by the m-learning application are tools and artefacts that reflect a shared repertoire.
Chapter 8 – Cross-case analysis

In the previous three within case-analysis chapters, each case was treated as a separate unit of analysis with its results presented in a within-case analysis format across Chapters 5 to 7. In this chapter, the three cases will be analysed by drawing out similarities and differences between them and abstracting insights about the practices and role of practitioners, how stakeholders conceptualise m-learning and the nature of the initiative. The themes used in this cross-case analysis chapter follow the same three themes used in the previous within-case analysis chapters to answer the three research questions (Table 8.1). This chapter concludes with a discussion of key findings and how they relate to m-learning and CoP literature. The implications for practice are also presented.

Table 8.1: Themes and research questions

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<thead>
<tr>
<th>Theme</th>
<th>Research question addressed</th>
<th>Research question addressed</th>
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<tbody>
<tr>
<td>Theme 1: Practitioners’ interpretation of m-learning</td>
<td>Research question 1: What are the practices that allow m-learning practitioners to cohere as a Community of Practice in m-learning development and implementation?</td>
<td>Research question 3: How does a Community of Practice perspective provide insights into organisational m-learning initiatives?</td>
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<tr>
<td>Theme 2: Practice work of practitioners</td>
<td>Research question 2: How do m-learning stakeholders, such as learners and sponsors, conceptualise m-learning?</td>
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<td>Theme 3: Stakeholders’ perspective – sponsor, learner and executive managers</td>
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8.1 Theme 1: Practitioners’ interpretation of m-learning

This theme explores how practitioners conceptualise m-learning, how they perceive their role and how their worldview may have influenced both their practice and relationships with stakeholders. The cross-case analysis for this theme is summarised in Table 8.2. The table contrasts the emphases of the theoretical categories of Theme 1: Practitioners’ interpretation of m-learning. Blank cells indicate that a particular theoretical category did not emerge strongly in the data analysis.

Table 8.2: Cross-case analysis of Theme 1: Practitioners’ interpretation of m-learning
8.1.1 Practitioners’ role

When practitioners in both Case 1 and 2 described their m-learning role they focused on the importance of balancing their practitioner role with their day-to-day organisational role. The responsibilities of developing and implementing m-learning initiatives did not supplant their existing work responsibilities, as they were expected to balance and accommodate both roles. The challenge for these practitioners is to balance the activities of their existing roles with the activities associated with the development and implementation of the m-learning initiative.

Evidence from Case 1 and 2 indicates that practitioners were not given direction from their line managers or the sponsor as to how they should achieve this work balance and were instead expected to problem solve themselves. This was a cause for concern for practitioners. Comments in Cases 1 and 2 indicate that practitioners had difficulty managing the deliverables associated with their existing organisational and m-learning practitioner roles. In Case 1, for example, practitioners talked about the m-learning initiative as “a big job” and “huge mammoth task”. In Case 2, they talked about “the pace being tough” and the workload being “challenging”. In both cases practitioners were referring to the difficulty they had balancing responsibilities and deliverables associated with their dual role – “trying to juggle HR commitments with this kind of project is actually quite difficult” (C2P2). In Case 1, one of the practitioners complained that the m-learning initiative was “taking too much time” and “taking time away from [general day-to-day HR work]”.

Performing two roles can simultaneously cause practitioners considerable stress and affects how they conceptualise m-learning. Working informally and having sufficient autonomy over their day-to-day activities allowed practitioners to move between their existing role and that of m-learning practitioner, on an as-needs basis. Where practitioners have sufficient autonomy and support from their sponsor the challenges of balancing both roles are less acute.

In Case 2, Practitioner 1 commented that the sponsor is kept informed about the initiative’s progress and he had a level of autonomy to complete his work – “we kept [the sponsor] informed about how [the initiative] was tracking. He didn’t kind of push it aggressively ... that’s the way [the sponsor] manages which is sort of he leaves it to you” (C2P1). Similarly, in Case 3 practitioners described the sponsor as not interfering with their day-to-day work – “[the sponsor was] extremely hands off” (C3P2).

The challenge of managing dual organisational roles seemed to throw up issues of community identity for practitioners. Where they were seconded from an existing organisational role,
practitioners seemed to identify with their pre-existing organisational role rather than with the m-learning practitioner role. For example, in Case 1, two of the three practitioners were HR Advisers providing consulting services to the business on matters such as remuneration, performance management and recruitment. When asked to describe their role in the organisation, they described their HR role as their primary role and their m-learning role as secondary. The third practitioner in Case 1 was also seconded from the HR department and worked as a trainer delivering face-to-face programs around application usage, functionality, process and compliance. When asked to describe their role in the organisation C1P3 referred to themselves as a Trainer as their primary role and their m-learning responsibilities as secondary.

Even though practitioners in Case 1 identified their m-learning role as secondary to their organisational role, they still felt a strong sense of accountability and commitment to the delivery of the m-learning initiative. One way in which this manifested was in the appropriation of formal organisational roles such as project manager. In Case 1, some practitioners identified as project managers. This reflected not so much self-promotion but more an attempt to make sense of their role in the initiative. The term project manager was used by practitioners not so much as a formal role, but as a metaphor that described their planning and coordination activities associated with the m-learning initiative. However, practitioners still performed low level operational tasks. There is evidence to suggest here that practitioners need to be prepared to take on different roles and tasks at various levels in the m-learning initiative from project manager to doing “nitty gritty tasks as well”.

[Practitioners were] just trying to do [their] jobs and make [the sponsor] happy by labelling [themselves] project managers, but at the end of the day we were doing a lot of the nitty gritty tasks as well. (C1P2)

Practitioners in Cases 1 and 2 worked on the m-learning initiative on an ad hoc basis engaging with stakeholders on an as-needs basis. However, as dependencies on stakeholders and interconnections of various tasks became apparent, the practitioners’ ad hoc approach was problematic – “[practitioners] struggled to find a balance between everybody’s roles to make sure that everything was being done” (C1P2). In Case 1, the practitioners needed the help of some stakeholders to complete certain initiative tasks but struggled to gain the commitment of some stakeholders, because some stakeholders were operating under existing management reporting lines and did not feel obligated to prioritise practitioners’ requirements.

Where m-learning practitioners do not have management control over stakeholders they need to reflect on the importance of establishing interpersonal connections with stakeholders. Data from the interviews suggest that where practitioners have strong interpersonal connections and liaise and negotiate with stakeholders, they are more able to accomplish tasks that have a dependency on stakeholders. The effort practitioners put into liaising and negotiating with stakeholders seems to promote a high level of collaboration with stakeholders, and reflects the practitioners’ strong sense of commitment and accountability to the development and delivery of m-learning.
8.1.2 Meeting sponsors’ requirements

Even though sponsors across all three cases had significant influence over practitioners, ‘Meeting the sponsors’ requirements’ featured most strongly as a theoretical category from practitioners’ comments in Cases 1 and 2. The practitioners in Case 1 perceived their role as integral in meeting these requirements and saw themselves as instruments to implement requirements, as per below.

Effectively I was taking instructions and delivering [to the sponsor’s requirements]. (C1P1)

We know that it’s unspoken that [the sponsor] just wants [m-learning] in and [they have] been in the business for 27 years. It’s a directive ... We need to make it happen. (C2P2)

In Cases 1 and 2, practitioners had a close relationship with their sponsors because they reported to them as part of their day-to-day organisational and practitioner roles.

[The sponsor] is very supportive [and] given us a lot of feedback, support, guidance and we've needed it. (C1P2)

The relationship is very positive [between practitioners and the sponsor]. (C2P2)

Practitioners’ comments reflected their efforts to deliver sponsors’ requirements and they conceptualised the m-learning initiative using similar language to the way sponsors described their requirements. This is illustrated in Case 1 when the sponsor described his requirements as improving staff retention, addressing the challenge of keeping staff engaged in training, and providing staff with new and different ways to learn. The practitioners in Case 1 reflected this language in their own comments. They expressed m-learning as a “retention strategy, [supporting staff in] sharing their insights, learnings ... knowledge sharing” (C1P2) and delivering m-learning as a new way of training while staff travel – “there has been nothing like this at [Company A] before ... trying to have m-learning content consumed during transport” (C1P1).

Similarly, in Case 2 the sponsor’s requirements were breaking down silos, and encouraging staff to share knowledge and learnings. These requirements were echoed by practitioners in Case 2, who actively addressed the sponsor’s requirements (Table 8.3).

| Table 8.3: Practitioners’ alignment with sponsors’ requirements |
The practitioners in Case 2 echoed the sponsor’s requirements of using m-learning to break down silos and support staff to better collaborate across the organisation. This was important, and practitioners believed that m-learning could help staff share knowledge, collaborate on the job, and be a tool for communication with staff across geographic and organisational hierarchical boundaries. The sponsor and practitioners were using the same language when they described these requirements using the term “breaking down silos”. Practitioners emphasised that without the m-learning tool there was no efficient way to “informally praise and celebrate the work that [staff] do” (C2P2). They believed that the m-learning tool supported better social interaction between staff. Furthermore, practitioners believed that m-learning could help build staff morale through frequently communicating with posts on the m-learning platform that include social or job-related information, informal praise and celebration and highlighting exemplary practices.

[M-learning is good] for more of the social aspects of getting people to share and work together ... general building of relationships. (C2P3)

[M-learning is] a way for someone to instantly praise the work of a project team and the whole company sees that we like that. (C2P2)

Based on comments from practitioners and sponsors, the alignment of the practitioners’ conceptualisation of the m-learning initiative with the sponsors’ priorities or objectives was important. Where practitioners align their own conceptualisation of an m-learning initiative with sponsors’ requirements, they seemed to have a good level of support from sponsors and were provided with a level of autonomy to complete m-learning initiative tasks.

<table>
<thead>
<tr>
<th>Sponsors’ requirements</th>
<th>Practitioners meeting sponsors’ requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case 1</strong></td>
<td></td>
</tr>
<tr>
<td>“Staff turnover is higher in Company A than other industries” (Case 1 sponsor)</td>
<td>“[Staff] sharing their insights, learnings ... knowledge sharing ... [m-learning is] a retention strategy as well.” (C1P2)</td>
</tr>
<tr>
<td>“It’s challenging to keep engaging staff in the [training] process with something new and different by way of learning [and training]” (Case 1 sponsor)</td>
<td>“There has been nothing like this at [Company A] before [it’s new] ... trying to have m-learning content consumed during transport, while staff are on their way to work or to client meetings.” (C1P1)</td>
</tr>
<tr>
<td>“I don’t think there’s necessarily a lot of cross pollination of information between departments [and staff] ... part of the strategy was to get different departments sharing their insights and learnings and hopefully we can leverage that in the long term.” (C1P2)</td>
<td></td>
</tr>
<tr>
<td><strong>Case 2</strong></td>
<td></td>
</tr>
<tr>
<td>Continuous learning. Knowledge sharing and trying to capture more innovation examples from the business.” (Case 2 sponsor)</td>
<td>“Breaking down silos ... building that sense of ‘we are one team’ [in the organisation ... better collaboration and knowledge sharing]” (C2P1)</td>
</tr>
<tr>
<td>“[Improving] disconnected employee base ... silos ... find ways to share knowledge between teams” (C2P2)</td>
<td>“Break down walls ... getting people to talk to each other ... collaboration” (C2P3)</td>
</tr>
</tbody>
</table>
Not all practitioners agreed with sponsors’ that m-learning would improve staff or organisational performance. However, some practitioners did not express their reservations. This may be because sponsors were more senior in the organisation and practitioner’s line reporting relationship. There is evidence to suggest that practitioners were focused on meeting sponsors’ requirements even when their views did not agree with those of the sponsor. The inclination of some practitioners (i.e. C2P3) not fully expressing their personal views and disagreed with the sponsors’ view, may have been influenced by the tendency for sponsors to take a management control focus, and sponsors holding the position of manager in their practitioner and organisational roles.

I'm reserving judgement to see how it goes … My gut [feeling] says [sic] it's going to be purely a social gathering thing and sharing good will stories versus becoming a place where people collaborate. Only because there are other systems that are being brought in that facilitate collaboration at least with the project teams. I'm typically not an optimistic person but I don't think they will get that buy in and communication between states and departments at the collaboration level. (C2P3)

8.1.3 Supporting learning needs of sales staff

In Cases 1 and 3 practitioners conceptualised part of their role as supporting learning needs of sales staff and emphasised the novel nature of m-learning to the company (Table 8.4). The practitioners’ perception of supporting these needs provided them with a common sense of purpose and motivation to focus and persist with their efforts to implement the initiative, especially in times of stress while they balanced their workload and managed the pressure imposed by their sponsors to rapidly implement the initiative. They were also interested in m-learning as a new way to deliver training to sales staff in the company.

Table 8.4: Practitioners supporting learning needs of sales staff
Comments from practitioners and learners indicate that an alignment of practitioners’ conceptualisation of the m-learning initiative with learners’ needs was important. Where practitioners align their own conceptualisation of the m-learning initiative with learners’ needs; learners seemed to be positive about practitioners and the m-learning initiative and more likely to adopt m-learning.

8.1.4 Adopting tools to motivate learners

Of the three cases analysed only Case 3 had competition as an integral part of the m-learning implementation to motivate learners to utilise the m-learning application and pay attention to training content. According to practitioners and stakeholders in Case 3, the competition was a motivator for many learners. This may indicate that m-learning implementation, including additional or supplementary activities that encourage learner participation, may be beneficial to the adoption of m-learning.

8.2 Theme 2: Practice work of Practitioners

This theme examines practitioners’ practice during development and implementation of m-learning initiatives and how this allows them to cohere as a CoP. Cross-case analysis for theme 2 is summarised in Table 8.5.

<table>
<thead>
<tr>
<th>Supporting learning needs of sales staff</th>
<th>Perceiving m-learning as new to the company</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case 1</strong> “[Sales staff] really don’t have time to sit at their desks and do things [like training]. So, we are trying to make many of our [training] programs and technologies mobile.” (C1P2)</td>
<td>“There has been nothing like this at [Company A] before [it's new] ... trying to have m-learning content consumed during transport, while staff are on their way to work or to client meetings.” (C1P1)</td>
</tr>
<tr>
<td>“The purpose of [m-learning] is to share additional learning and hope that people walk away with a different way of thinking or with insights on things ... to show what best practices are out there. Anything special someone might be doing in the marketplace just to give us a bit of an edge on our competitors.” (C1P2)</td>
<td></td>
</tr>
<tr>
<td><strong>Case 3</strong> “[M-learning is] a quick and easy way of reinforcing knowledge ... helping [staff] retain information” (C3P2)</td>
<td>“A new way ... fun, sexy, exciting, new foray from a technology perspective that [Company C] has never done before. Early adopter type of stuff.” (C3P2)</td>
</tr>
<tr>
<td>“Reinforce training ... an easy and snazzy way to do it ... [m-learning is] really quick and easy.” (C3P5)</td>
<td>“A new way of learning - ground breaking ... that’s why a lot of people wanted to be involved ... because it was different. We were going to be setting the standard here. We will raise the bar in learning.” (C3P3)</td>
</tr>
</tbody>
</table>

Table 8.5: Cross-case analysis of Theme 2: Practice work of practitioners
8.2.1 Working as a team

All three cases illustrate that practitioners perceived m-learning development and implementation as a team and collaborative effort. They frequently communicated amongst themselves to solve problems together and promote a shared understanding of matters of importance to the team as well as their work – “working together trying to find the solutions to problems” (C2P2). The practice of frequently communicating and sharing common understanding about m-learning helped promote joint enterprise amongst practitioners and stakeholders.

As evidenced in Cases 1 and 2, where practitioners have existing working relationships, this can facilitate the efficient creation of a sense of mutual engagement and joint enterprise. For example, practitioners commented they shared both tasks associated with the m-learning initiative as well as those associated with their operational roles, because they all worked in the same HR Department. The practice of task sharing amongst practitioners helped them understand respective working styles, roles and workloads, and helped practitioners maintain a sense of team cohesion and camaraderie – “He and I [practitioners] work extremely well together; which makes life a lot easier; because we get it” (C1P2). The practice of task sharing also reflected practitioners’ commitment to their operational role and joint enterprise in delivering m-learning tasks. Furthermore, practitioners collaborated and communicated frequently through face-to-face informal and formal discussions, meetings, phone conversations and emails. Face-to-face communication was easy to maintain because practitioners were physically co-located and had their work desks within metres of each other.

A strong sense of camaraderie was critical to maintaining team cohesion and allowed practitioners to support each other as they managed day-to-day and practitioner roles. Trust and the ability to share both their m-learning and operational tasks was an important practice.
for practitioners to manage the workload and pressure to deliver the initiative within rapid timelines.

Even though practitioners in Case 2 did not have their working desks within close physical proximity, they also communicated regularly and on an as-required basis via mainly phone, video conference and email. Practitioners in Case 2 had very different day-to-day roles and did not adopt the practice of sharing their dual workload. They maintained team cohesion by openly and frequently communicating with each other on an as-needs basis. Because they have worked together previously in their existing organisational role, and had a pre-existing positive working relationship, they worked together in an informal manner. Practitioners engaged in frequent dialogue in meetings to progress the initiative and asked questions of each other, discussed problems, options and negotiated potential solutions to issues associated with the m-learning initiative.

The way we implement [m-learning] is [via] discussions and actions from meetings ... [In] some of those meetings we had different view on things, but we always came to a resolution ... we make decisions through discussions. (C2P2)

On the other hand, some practitioners in Case 3 had existing working relationships before the commencement of the initiative while others did not. Despite some practitioners not having existing working relationships, they also worked well together with a strong sense of collaboration and unity in the team. Like Cases 1 and 2, this was achieved by regularly communicating amongst the practitioners face-to-face, by phone, using tele-conference, video-conference and email. Unlike Cases 1 and 2, in Case 3 staff from an external vendor provided significant expertise to the practitioners and they were based overseas. Communicating with the vendor was therefore more difficult than communicating with in-house practitioners because of the time difference. Practitioners overcame this issue, and not being co-located with the external vendor, by communicating with the vendor mainly using email and phone conversations, teleconference and video conference meetings. Because of the time difference and the absence of face-to-face discussions, communicating with the vendor had to be planned and more formal than in-house practitioner discussions. Email was used frequently to communicate between the vendor and in-house practitioners to discuss issues, options, solutions and documentation – “we were constantly emailing [the vendor]” (C3P2). There is evidence to suggest that where practitioners spend a significant amount of time and effort communicating with the external vendor frequently, they are better able to leverage the vendor’s m-learning experience and ensure that their understanding of the initiative priorities and tasks were aligned.

Evidence from the three cases demonstrates that even though having existing working relationships help in rapidly creating a sense of cohesion, mutual engagement and joint enterprise; these can be created for practitioners without existing working relationships. However, practitioners without existing relationships need to spend more time and effort in liaising and communicating regularly to achieve a strong sense of cohesion, mutual engagement and joint enterprise. And this seems to be enjoyed by those practitioners with existing working relationships.
8.2.2 Practitioners engaging stakeholders

Practitioners in all three cases recognised sponsors and learners as key m-learning stakeholders. However, the level of effort practitioners expended to engage with their m-learning stakeholders varied across cases. This may be reflective of practitioners’ perceptions of the importance of engagement and communication with the different m-learning stakeholders to m-learning success. Comments from practitioners in all three cases demonstrate they adopted practices that promoted engagement and communication with their respective sponsors and learners as important to information flow and knowledge exchange. Through their efforts of liaising and engaging with stakeholders, practitioners established interpersonal connections with stakeholders. These connections are important and contributed to the ability of practitioners and stakeholders working together to discuss m-learning issues and tasks.

Where practitioners engage with sponsors and learners, this reinforced a balanced orientation in their work efforts. As discussed earlier in Theme 1, the engagement of the sponsor and learners is also a reflection of the way practitioners conceptualised their role – as meeting the sponsor’s requirements and supporting learning needs of staff.

8.2.2.1 Engaging the sponsor

In all three cases, the practitioners engaged with respective sponsors as part of regular informal and formal meetings and on an as-required basis to promote shared understanding about progress and key issues associated with the m-learning initiative. For example, practitioners would communicate regularly with sponsors to provide updates regarding progress and would ask for sponsors’ support at crucial times. Through regular engagement and communication, practitioners established and maintained strong interpersonal connections with their respective sponsors. Consequently, in all three cases sponsors were critical resources for practitioners. For example, in Case 3 the sponsor secured funding for the initiative and liaised with senior managers to gain their support for m-learning. Similarly, the sponsor in Case 2 was active and visibly participating in m-learning to motivate other learners to adopt m-learning.

There is evidence that sponsors in all three cases were integral to the success of m-learning. Practitioners that were skilled in liaising and engaging with them and, thereby establishing and maintaining strong interpersonal connections, allowed them to leverage the senior position of the sponsor in the company to gain senior manager support, secure funding and motivating staff.

8.2.2.2 Engaging learners

Learners in all three cases were more motivated and positive about m-learning when the practitioners planned and spent significant efforts towards engaging with them. However, the level of effort practitioners expended in this engagement varied between cases. This may be reflective of practitioners’ perceptions of the importance of engagement and communication with learners to m-learning success.

Contrasting the levels of effort practitioners spent across the three cases, on engaging and communicating with learners about m-learning, practitioners in Case 1 appeared to place the least amount of effort in these activities. For example, C1P1 described their relationship with
learners as “non-existent”. Practitioners interacted with learners on an as-required basis, usually once a month, as an additional agenda item to the existing monthly sales meetings held for the whole of NSW. When practitioners reflected on what could be improved from their m-learning project experience, they commented that more effort in communicating and engaging with learners would have increased the number of learners using m-learning.

If we do this again we’d … re-focus on that communication [to learners] and make it a regular reminder that [m-learning’s] there. (C1P1)

When practitioners in Case 2 reflected on lessons learnt from the previous failed m-learning implementation, they also emphasised that learners were resistant to change and had to communicate to learners differently during this second implementation by emphasising how m-learning would benefit learners.

People are resistant to change, and you have to address that very deliberately …. we pitched it differently ... talked about what’s in it for us [as learners]. (C2P1)

In contrast to Cases 1 and 2 (with three practitioners), there were five practitioners in Case 3 (and three consultants from an external vendor). Potentially, due to the size and complexity of Company C, Practitioner 1 in Case 3 acted as a “conduit” between practitioners and learners, and dedicated significant effort to liaising with learners. He would engage with some learners one-on-one through phone “calls personally” with a “personal touch”.

Practitioners in all three cases developed presentation slides and delivered face-to-face presentations to learners to explain the initiative and benefits of using m-learning. These messages were also sent to learners via email. In Cases 1 and 3, sales staff, specifically targeted as the learner audience, trialled m-learning. In contrast, in Case 2 the practitioners were more confident in their own capabilities compared to the practitioners in the other two cases. This may be why they chose to implement m-learning company wide. This decision may have also been a directive from the sponsor and learnings from the previous failed m-learning implementation. Case 2 demonstrates that m-learning can be successfully implemented by addressing the learnings of previous failed implementation. These include, better engagement of learners, motivating learners by communicating the benefits of m-learning to learners with support from senior managers, and addressing technical issues.

The learnings gained from Cases 1 and 3 suggest that their approach of targeting a small sales staff learner audience, rather than the whole company, is an appropriate strategy for m-learning planning and implementation for companies attempting to introduce m-learning for the first time.

Some learners emphasised they expected better communication about m-learning in terms of why it was implemented (the purpose) and plans beyond current implementation. The perception that better communication for learners was required was contrary to the practitioners’ view: that they had effectively communicated to learners.

Based on comments from both practitioners and stakeholders, m-learning practitioners tend to gain positive feedback from learners when they pay attention to how they communicate to them, establishing feedback mechanisms to gain input and feedback from learners about the
effectiveness of their communication and how this could be improved. Furthermore, where practitioners engaged with learners and established interpersonal connections with them, learners were more motivated and positive about m-learning.

8.2.2.3 Engaging senior managers

Practitioners in all three cases emphasised the importance of senior management support and participation to the success of the m-learning initiative. For example, in Case 2, Practitioner 1 commented that if senior managers were not supportive of m-learning it would not be successful – “if we didn’t have them [senior managers] on board it was not going to fly”.

Even though practitioners recognised that senior management support and participation was important, the level of effort practitioners dedicated to engaging with senior managers varied across cases. For example, in Case 2 the practitioners engaged directly with senior managers and developed interpersonal relationships by involving them in a test group prior to m-learning implementation. In contrast, Case 3 practitioners relied on practitioner 1 (C3P1) and the sponsor to engage with senior managers and consequently engaged with fewer senior managers compared to Case 2. In comparison to Cases 2 and 3, practitioners in Case 1 relied almost solely on the sponsor to engage with senior managers because of their seniority and personal relationship with other senior managers. Consequently, this approach resulted in very few senior managers having interpersonal connections with practitioners. This may be an important factor contributing to Case 1 regarding a lower level of m-learning adoption by learners, as compared to Cases 2 and 3.

The variations in effort in engaging senior management may be due to the skills and experience of practitioners in m-learning implementation. Amongst the three cases, only practitioners in Case 2 had previous experience in the implementation of m-learning. This experience influenced these practitioners to place strong emphasis on the engagement of learners in senior management roles in the company. Practitioners in Case 2 built interpersonal connections with learners with senior management roles because they believed that the previous implementation partly failed due to a lack of support from senior managers. To address this issue, practitioners in Case 2 established a test group and invited learners from all levels, including senior managers, to participate in testing the m-learning application prior to the second implementation. Also, face-to-face presentations were delivered by practitioners, the sponsor and/or senior managers. Practitioners also learned from the previous failure and focused on engaging senior managers to become “visible champions”.

[Practitioners] made a deliberate effort to engage senior management so that they were leading from the front ... really getting the leaders of the organisation to be visible champions ... that's made a huge difference and it's been great ... Before we launched it [m-learning] on the whole company, we actually setup the whole executive team with a safe [test] environment. (C2P1)

Furthermore, practitioners in Case 2 ensured the company intranet featured m-learning prominently on its home page to emphasise that it was a company-wide priority. Another reason for the strong emphasis on communications and engagement in Case 2 was that one practitioner had specialised expertise in this area as the internal Communications Manager and
regularly emphasised the importance of engaging learners to other practitioners and the sponsor.

Sponsors in Cases 2 and 3 also targeted key senior managers to conduct discussions on a one-on-one basis to gain their support for m-learning. In Case 3 both the sponsor and practitioners engaged with learners on an as-required basis. Like Case 2, those practitioners in Case 3 also leveraged in-house communications expertise in the company and generated weekly emails for the Business Senior Executive to send to all learners. This provided visible senior management support to m-learning to motivate learners to adopt m-learning.

Evidence from all three cases would suggest that when practitioners dedicate focused efforts to communicating, engaging and building interpersonal connections with learners in senior management positions, these senior managers become champions of the initiative and motivate other learners to adopt m-learning. When practitioners almost solely relied on the sponsor to build these interpersonal connections with learners in senior management positions, fewer senior managers appeared to champion m-learning initiatives (i.e. Case 1) compared to those practitioners that built interpersonal connections directly with senior managers (i.e. Cases 2 and 3).

8.2.2.4 Engaging with staff and vendor to provide expertise

In all three cases practitioners did not possess all the expertise to develop and implement m-learning in its entirety. They had to identify and liaise with other personnel to gain the required expertise to complete certain initiative tasks. Practitioners in Cases 1 and 2 relied mainly on in-house staff for expertise required to develop and implement m-learning. Those in Case 2 had most of the expertise required to develop and implement m-learning initiatives amongst practitioners. There were some difficulties in dealing with the vendor to address technical issues. This was managed by the Technology Analyst (C2P3). Technical issues associated with the initiative were not visible to other practitioners, the sponsor and learners.

On the other hand, those practitioners in Case 1 lacked expertise in project management, marketing and specific technologies and relied on other staff in the company for expertise. They also found it difficult to engage with staff in IT, Marketing and with the NSW State Executive’s personal assistant to seek the expertise they needed to complete certain initiative tasks. Practitioners engaged these staff on an as-needs basis and found they would not work on certain initiative tasks because they were helping practitioners based on best endeavours and did not perceive the initiative work as part of their role. When practitioners faced resistance from other staff to complete initiative tasks, they used their personal influence or positive relationships with other staff to convince them to complete initiative tasks, as practitioners did not have the authority to direct the work of other staff. Even though their involvement was a small part of the initiative, their expertise was important to the development and implementation of the m-learning initiative.

In contrast, practitioners in Case 3 did not rely heavily on in-house technology expertise and engaged regularly with an external vendor instead for m-learning technical and implementation expertise. Their efforts to engage with the vendor resulted in a positive working relationship that contributed to the perceived success of the initiative. Practitioners were skilled in
identifying that the company did not have the technical expertise in-house early on in the initiative and invested significant efforts in selecting and sourcing an external vendor that possessed such expertise. They also liaised with the vendor to ensure there was a comprehensive contract in place between the company and the vendor. This ensured that company expectations were well documented, and the risks associated with engaging the vendor were well-addressed.

Where practitioners have insufficient technical skills to complete m-learning development and implementation tasks, seeking expertise from outside parties may have a positive impact on m-learning initiatives. Practitioners in all three cases were resourceful and skilled in liaising with staff from other departments and/or vendors to complete technical tasks and manage technical issues. Consequently, m-learning implementation was perceived as easy and simple by learners and some of the practitioners that were not dealing with the technical tasks and issues. This suggests that where practitioners are resourceful and skilled in liaising with outside parties for their technical expertise, this had a positive influence on m-learning initiatives.

8.2.3 Focusing on rapid implementation in a bureaucratic business context

The sponsors in all three cases put practitioners under pressure to implement the m-learning initiative within rapid timelines. Therefore, negotiating these timelines was important to both practitioners and sponsors alike.

The duration of m-learning initiatives across the three cases differed significantly. In Case 3 the duration was over two years, even though the current sponsor was not in place until mid-2016 (five months prior to implementation). In comparison, practitioners in Case 1 required seven months and in Case 2 five months to implement the initiative. There is evidence to suggest that m-learning implementation timelines can be impacted by factors outside the practitioners’ control, such as company restructures and bureaucratic procedures and decision-making processes, as demonstrated in Case 3. Practitioners who have an awareness of these factors and are skilled in maintaining a shared understanding with their sponsor about how these factors impact the initiative, are more likely to successfully manage sponsor expectations in terms of negotiating m-learning timelines and expectations.

In a bureaucratic organisational context, practitioners found that managing timelines was difficult due to several company restructures throughout the life of the initiative, causing uncertainty and change in sponsorship, funding and priorities. The sponsor wanted the initiative to be implemented to a bigger learner audience and more rapidly. However, practitioners negotiated with the sponsor to implement the initiative as soon as the issues and requirements to satisfy the company’s internal IT, Risk and Procurement processes were addressed. Furthermore, practitioners negotiated with the sponsor to implement m-learning for a smaller and more focused audience to learn from the first implementation before scaling up to a bigger learner audience. The sponsor accepted practitioners’ advice after several informal and formal discussions regarding the advantages and disadvantages of different implementation timelines, and targeting different learner audiences and sizes.
Practitioners in Case 2 also negotiated a delay with implementation timelines with the sponsor. The delay of one week was firstly discussed and agreed amongst practitioners, and then negotiated and agreed with the sponsor. Practitioners in Case 1 adopted a similar approach to Case 2 in reaching agreement. In all three cases the sponsor agreed with the practitioners’ advice to delay implementation timelines. Therefore, in all three cases the actual implementation date of the m-learning initiative was later than expected. The initial implementation date was set by the sponsor, in all three cases, with little input from practitioners in the early stages of the initiative.

As practitioners developed a better understanding of requirements it was evident that a delay in implementation timelines was required. In all three cases practitioners were skilled in negotiating a delay with respective sponsors. Interview data from sponsors suggest they accepted delayed timelines recommended by practitioners after negotiation and consideration of reasons for the delay, which included allowing more time for better training content to be created (Case 1), developing better communication to engage learners (Case 2) and completing the documentation required by the company’s IT, Procurement and Risk departments (Case 3).

There is evidence to suggest that when practitioners feel under time pressure, they may need to negotiate m-leaning delivery dates with their sponsors. Furthermore, where practitioners were skilled in negotiating implementation timelines the initiative was perceived as more successful by the sponsor. They were able to negotiate timelines with their sponsor because they regularly communicated with them, and maintained a shared understanding of the issues and progress of the initiative. A shared understanding between practitioner and sponsor allowed the latter to understand the reasons why the delay in implementation timelines was required for the overall success of the initiative.

Even though practitioners were skilled in negotiating such timelines, the continued pressure the sponsor put on practitioners to implement the initiative caused the latter to rush the implementation in all three cases. In Case 2, practitioners implemented the initiative even though some of the tasks associated with development of m-learning user guides were not complete. They would have preferred to spend more time engaging in a two-way dialogue with learners before implementation. This suggests that the sponsor’s emphasis on rapid implementation had a significant impact on practitioners and the completeness of their initiative work, including engagement with learners.

Practitioners in Case 3 emphasised that the development and implementation of the m-learning initiative was difficult in a bureaucratic business context. They developed strategies to manage these difficulties, such as negotiating delays in timelines with the sponsor and dedicated one practitioner’s efforts to solely dealing with company compliance, and bureaucratic procedures and decision-making processes. Even though this was not highlighted by the research participants as a major concern in the other two cases, the organisational context of both Company A and B in Cases 1 and 2 are similar to Case 3 in terms of size and complexity. (This is further discussed in section 8.4 Cross-case analysis conclusion.)
8.2.4 Addressing technical issues

Addressing technical issues featured strongly in Case 2 based on the perception that this contributed to the failure of the previous m-learning implementation. Therefore, technical issues were known and addressed by practitioners as part of their initiative tasks. In contrast, technical issues were not as apparent to practitioners in Cases 1 and 3 because they had no previous m-learning implementation experience. Even though there were some technical issues encountered, these were not highlighted as major concerns by research participants. This may be because technical issues in Case 1 were adequately managed by the IT department and not visible to practitioners. Similarly, technical issues in Case 3 were managed by the vendor and by and large not visible to practitioners. This may suggest practitioners who are skilled at securing relevant technical expertise are more likely to be successful in m-learning development and implementation. Relevant technical expertise may be secured within the company (i.e. their internal IT department or externally from vendors).

8.3 Theme 3: Stakeholders’ perspective

This theme balances the practitioners’ perspective in themes 1 and 2 by understanding the stakeholders’ perspective. The stakeholders examined in this section include sponsors, learners, executive managers and those providing expertise to practitioners.

8.3.1 Theme 3: Stakeholders’ perspective – Sponsors

Sponsors in all three cases had a significant influence on practitioners’ practices. Practitioners developed and maintained specific practices that aligned with sponsors’ perspectives. These also influenced practitioners in terms of how they conceptualised m-learning and their practitioner role. This is illustrated in Table 8.6 by grouping theoretical categories relating to the practitioners’ perspective, in themes 1 and 2, with theoretical categories in theme 3 (Sponsors’ perspective). These are analysed in subsections 8.3.1.1 to 8.3.1.4 below.

Table 8.6: Theme 3 Cross-case analysis – mapping sponsors’ with practitioners’ perspectives
Practitioners working as a team and engaging stakeholders

The sponsors in all three cases had a management control focus in terms of demanding the m-learning initiative be implemented rapidly, and with a focus on cost, revenue and return on investment. Sponsors delegated almost all initiative tasks to practitioners and expected them to prioritise and balance their dual workload. Consequently, practitioners in all three cases were
active problem solvers and worked collaboratively to prioritise, allocate and complete tasks amongst themselves.

While sponsors delegated m-learning initiative development and implementation to practitioners, all sponsors monitored and intervened during the life of the initiative when they felt intervention was required. For example, in Cases 1 and 2 both sponsors reminded the practitioners they needed to balance their priorities regarding their organisational and practitioner roles. The monitoring and intervention that was evident in Case 3 occurred when the sponsor took a hands-on approach to securing resources and engaged with senior executives to gain their support for the initiative. Consequently, practitioners provided their sponsors with regular updates regarding the m-learning initiative including key issues they encountered as part of regular, formal and informal meetings. This allowed practitioners to establish a common understanding of the initiative’s progress and key issues with their sponsors. Practitioners also engaged their sponsor on key issues that required the sponsor to take action to contribute to the initiative, such as securing resources for the initiative in Case 3 and engaging with certain senior managers (in all three cases).

The regular engagement between practitioners and their sponsor allowed them to align their work with their sponsor’s expectations and gain their support to address key issues. Practitioners in all three cases engaged with their respective sponsors regularly and effectively, suggesting that these characteristics are important to the successful implementation of m-learning initiatives as perceived by the sponsor.

Practitioners had to be skilled at engaging with not only the sponsor and learners in each case but also with the staff and vendor that provided technical expertise to the initiative. Where practitioners did not have all the expertise to develop and implement the initiative, they had to engage other staff in-house (Case 1) or with the vendor (Cases 2 and 3) to work on specific tasks or provide technical expertise. This was also driven by the sponsors’ cost control focus. For example, the sponsor in Case 1 had a commercially pragmatic approach which influenced their decision to use existing HR in-house resources, prioritised generation of sales over training, and focused on improving the productivity of the company’s sales staff throughout the m-learning implementation. This meant that practitioners in Case 1 were expected to work within cost constraints set by the sponsor. Consequently, practitioners had to be resourceful in sourcing expertise in-house to complete initiative tasks and select m-learning technologies that would not incur additional costs to the company. Practitioners in Cases 2 and 3 also worked within budget constraints set by the sponsor. However, their budget included the cost of utilising external vendors. Therefore, they worked with the vendor when they required specific technology or implementation expertise.

Evidence from all three cases would suggest that m-learning implementation often requires practitioners to work within cost constraints set by their sponsors. And that m-learning practitioners need to be resourceful and active in engaging other staff or external vendors for specific expertise to successfully develop and implement m-learning initiatives.
8.3.1.2 Focusing on rapid implementation

In all three cases, sponsors took an active monitoring role and intervened in key decisions, especially issues concerning m-learning implementation timelines. Interestingly, this focus was the strongest amongst sponsors in Cases 2 and 3. Even though the sponsor in Case 1 did not emphasise a focus on rapid implementation timelines, based on comments from practitioners they perceived the sponsor as having a strong emphasis on rapid implementation. Consequently, practitioners in all three cases rushed their work to implement the m-learning initiative rapidly to meet sponsors’ expectations. In Cases 2 and 3 rushing the implementation resulted in some work being incomplete. Based on comments from practitioners, they did not have enough time to complete some tasks associated with better communication with learners about the m-learning initiative. This may have contributed to some learners in Cases 2 and 3 commenting that the communication regarding m-learning was insufficient and unclear, in terms of the benefits of m-learning for them, why it was implemented and the future of m-learning in the company.

In addition to rushing the implementation, practitioners in Cases 2 and 3 engaged with the sponsor to negotiate a delay in implementation timelines. The sponsor in both cases agreed to the delayed implementation recommended by practitioners because of the positive relationship practitioners had with the sponsor through regular engagement. All cases suggest that practitioners skilled in establishing and continuously maintaining a shared understanding with their sponsors regarding progress of the m-learning initiative and key issues, such as implementation timelines, are perceived to be positive.

8.3.1.3 Supporting the learning needs of sales staff and building a more collaborative knowledge sharing culture

M-learning was perceived as very important in supporting the learning needs of sales staff by the sponsors in Cases 1 and 3. They perceived a deficit in the competency and capability of sales staff and the company having difficulty training sales staff. In alignment with the sponsors’ views, the practitioners in Case 1 and 3 also perceived a deficit in the competency and capability in sales staff and focused their efforts to address this by developing and implementing the m-learning initiative.

On the other hand, building a more collaborative knowledge-sharing culture was the focus of the sponsor and practitioners in Case 2. They perceived the implementation of the m-learning initiative as more than m-learning and included the implementation of a new communication channel that supported peer-to-peer staff recognition, effective and efficient knowledge sharing and replacement of emails. The practitioners were expected to lead and promote the building of a knowledge-sharing culture through the m-learning implementation and their own actions in the company. There is evidence to suggest that practitioners must be articulate in how m-learning supports the company’s knowledge-sharing culture and provides benefits to staff on their jobs. The practitioners communicated this in various ways such as via presentations at various meetings, written communications about m-learning via email and on the company intranet site and their own actions such as posting relevant messages on m-learning. The practitioners also encouraged the sponsor to lead by example through their actions in actively using m-learning to motivate staff from all levels of the company to follow
their lead. This is because the practitioners believed that staff were motivated to use m-learning when they could see senior managers vocally and actively supporting and using m-learning.

The practitioners in all three cases relied on the sponsor to help engage with senior management to gain their support and commitment for m-learning. This was perceived by the practitioners as appropriate because of the sponsors’ seniority in the company hierarchy, skills in engaging with staff at senior management levels and their vested passion and interest in the initiative. However, as demonstrated by Case 1, the practitioners should not solely rely on the sponsor to engage with senior managers. The three cases demonstrate senior managers played an important role in motivating staff to achieve the m-learning objectives of supporting the learning needs of sales staff (Cases 1 and 2) or building a more collaborative knowledge sharing culture (Case 3). While the sponsor may be effective in engaging some senior managers in support of the m-learning objectives, because of their seniority in the company, practitioners that dedicated significant efforts to engaging with senior managers directly and frequently tended to be more successful in gaining their support for m-learning.

8.3.1.4 Perceiving m-learning as supplementing face-to-face training

The sponsor in Case 1 perceived m-learning as supplementing face-to-face training. Even though some practitioners and learners mentioned m-learning as supplementing face-to-face training, they did not emphasise this to the degree that the sponsor in Case 1 did. Similarly, the sponsors in Cases 2 and 3 did not place an emphasis on the role of m-learning supplementing face-to-face training. This may suggest that practitioners, learners and sponsors have not established a clear view on the relationship between m-learning and face-to-face training. The sponsor in Case 1 may have formulated their perception that m-learning is supplementary to face-to-face training because the company has traditionally used face-to-face training to train their staff and have just started experimenting with m-learning.

Therefore, the novel nature of m-learning may begin as serving a supplementary role to the traditional face-to-face training method that practitioners and stakeholders are used to. Whether m-learning evolves from a supplementary role to face-to-face training to taking on a different or broader role is a suggestion for further research.

8.3.2 Theme 3: Stakeholders’ perspective – Learners and Executive managers

This theme provides the learners’ and executive managers’ perspective to balance the practitioners’ and sponsors’ perspectives discussed in the previous sections and explores how learners and executive managers conceptualise m-learning and how this contrasts to how practitioners conceptualise m-learning. Interestingly, the learners seemed to not exert as much influence on the practitioners as the sponsor. The practitioners focused on engaging with senior or executive management to motivate learners to adopt m-learning. The cross-case analysis focusing on the learners’ and executive managers’ perspective is summarised in Table 8.7 below.

| Table 8.7: Cross-case analysis of Theme 3: Learners’ and Executive managers’ perspective |
### Section 8.3.2.1 Learners conceptualising m-learning as social and supporting learning

<table>
<thead>
<tr>
<th>Theoretical category</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners’ training needs being supported (Case 1)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learners conceptualising m-learning as knowledge sharing and social tool (Case 2)</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Learners being social, helping and supporting each other (Case 3)</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Experiencing m-learning as fun and a positive experience (Case 3)</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### Executive managers’ perspective

<table>
<thead>
<tr>
<th>Theoretical category</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive managers as stakeholders</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

#### 8.3.2.1 Learners conceptualising m-learning as knowledge sharing and social tool and supporting learning

A salient characteristic of all three m-learning implementations is they all focused on supporting learners’ needs and encouraged collaboration amongst learners. The focus on learner collaboration and socialising, both using the m-learning application and outside of the application was particularly strong in Cases 2 and 3. For example, in Case 2 learners were encouraged to interact, communicate and share work-related information and social content on the m-learning application. They were encouraged to form informal groups using the m-learning application as well as face-to-face meetings on topics that could be work related or social, such as for charity. Some learners commented that m-learning application supported better collaboration and continuous improvement by allowing staff to share information and knowledge easily, to better collaborate and work together.

On the other hand, the m-learning application in Case 3 was not used by learners to share information or collaborate within the application itself. Such collaboration and sharing occurred outside the m-learning application. Learners in Case 3 were organised in informal teams and got together voluntarily and sporadically to support each other in using the m-learning application, share information with each other and collaborate to answer questions based on training content. This behaviour by some learners in Case 3 was partly motivated by
competition that allowed teams to accumulate scores at individual and team levels. Competition in Case 3 was suggested by some learners as a fun way of engaging with training content, and they found their experience was social and enjoyable and supported their learning needs.

The way some learners commented on how m-learning supported their training needs reflected an alignment with how practitioners conceptualised part of their role as supporting staff learning needs. For example, learners in Case 3 emphasised a positive experience with the m-learning application in terms of reminding them, and revisiting and consolidating their learning.

I think it's good. Consolidating the learning in that manner was really good. (C3L3)

I think it's a really good idea to revisit the training [using m-learning] ... Challenging your memory ... it was great ... reinforcing our learning ... Which worked. (C3L4)

So, what it does do is bring it [what’s learnt from training] back to life. (C3L5)

Absolutely agree that it's [m-learning is] a good thing ... It tested you and challenged you to actually remember and recall what you've gone through. (C3L6)

Learners in Cases 1 and 3 recognised practitioners’ efforts regarding training. Some learners in Case 1 commented that they had a good relationship with practitioners and acknowledged their efforts in providing m-learning content relevant to their jobs.

I think the relationship’s good. They [practitioners] really tried to relate the podcasts back to what we do. (C1L3)

It’s been positive [learners’ relationship with practitioners]. (C1L2)

The way learners acknowledged practitioners’ efforts in Case 3 was by contrasting the company’s traditional technology and training approach as “draconian” compared to the novel training approach of m-learning being “cool” and “fun” (C3L4). In addition to commenting on the positive experience, learners also placed great value on the convenience and accessibility of the mobile phone (or iPhone) as being important to the adoption of m-learning in Case 3. The convenience of providing access to training content via mobile phone allowed some learners to review the material while in transit to work. Some learners preferred accessing the m-learning application on their iPhone “purely because of ease” and convenience (C3L4). Some learners commented that “[m-learning] was a convenient use of technology to reinforce face-to-face [training]”. (C3L6)

On the other hand, even though learners were positive about m-learning, some learners in Case 1 did not experience the level of collaboration or social interaction that their counterparts in Cases 2 and 3 experienced. This may be because the m-learning application in Case 1 was mostly practitioners pushing training content on learners.

There is evidence to suggest that a high level of collaboration and socialisation between learners may result in a high level of m-learning adoption. Therefore, practitioners that incorporate ways to encourage more interaction amongst learners may experience a greater adoption of m-learning. The cases demonstrate that this could be achieved in different ways, such as including
an element of competition in m-learning design and/or inviting senior managers and learners to be part of the m-learning test group, and continue to be active participants in m-learning during and after implementation.

8.3.2.2 Having different learner motivations for adopting m-learning

Learner motivations and preferences vary significantly between cases. In Cases 1 and 2, for example, learners expressed a preference for face-to-face training over m-learning. In Case 1, learners wanted more training and suggested areas for improvement in m-learning implementation to practitioners. These included a more targeted approach to communicating with learners and more interaction with them. Unlike Case 1, learners in Case 3 commented that they did not want more training, and emphasised that the company expected them to do too much training. Some learners in Case 2 commented that some training was mandatory, as they needed specific certification as part of their job. However, these learners also commented that they were disinterested in this type of training and would take short cuts to fast track and complete training assessments, often guessing the answers to a questionnaire to gain their certification. In contrast, they commented that face-to-face training was preferred because it allowed for more interaction between learners. Those in Case 2 wanted easy-to-use technology and perceived m-learning application as helping to attract new staff and increased visibility of senior management in the company through actively posting information on the m-learning application, visible to staff company wide.

Comments from learners suggest they are not a homogeneous group and motivated in different ways. They are influenced by personal preferences regarding face-to-face training, how much training is expected of them based on their job role, visibility of senior management in their support of m-learning and ease-of-use of m-learning technology. Practitioners that regularly seek feedback and input from learners to understand different factors and ways to motivate learners tend to receive positive feedback from learners in relation to m-learning.

8.3.2.3 Learners perceiving m-learning positively

Learners in Cases 1 and 3 perceived m-learning positively because it was relevant to their jobs and provided easy access to training content. Some learners expressed a preference for face-to-face training, rather than m-learning, but also recognised opportunities for face-to-face training were limited. This was because they experienced difficulties in finding enough time to interact with colleagues, managers and trainers because staff were often busy. Therefore, some learners perceived m-learning as a valid alternative to face-to-face training and had a positive view that may be related to the positive relationship some learners had with practitioners, as they recognised their efforts in delivering m-learning training content. Learners in all three cases commented on m-learning as a valid alternative to face-to-face training and had a positive view of m-learning (discussed in sections 8.3.2.1 and 8.3.2.4).

The learner’s perception of m-learning tends to be influenced by their relationship and interaction with practitioners and the relevance of m-learning training content to their jobs. Practitioners that focus on effectively engaging with learners to establish mutual engagement and joint enterprise and develop m-learning training content that is relevant to learners’ jobs, tend to be perceived by learners positively.
8.3.2.4 Learners valuing m-learning competition, convenience and efficiency

Learners in Case 3 commented that competition motivated many learners to use m-learning. This feature was unique to Case 3. The majority interviewed in Case 3 found competition to be positive and a motivator for them to work with other learners to actively use the m-learning application. However, some learners found competition to be a de-motivator, especially when they lagged behind, or were working in silos and not with other learners as a team to maximise their team scores. They did not have a positive experience in using the application because they perceived m-learning as not supporting silo workers or their preference for reflective learning. These learners found they focused on competition and having to answer questions about training content within the allocated time. This did not allow them to internalise and reflect on training material and learn from using the m-learning application.

All learners interviewed in Case 3 commented that they valued convenience and accessibility to training content on their mobile phones. M-learning was preferred over traditional training because it was not a big impost on their time and offered the convenience of being available to learners whenever they chose to access the application (24 hours a day, seven days a week). Some learners in Case 1 also commented on the convenience of having access to m-learning on their mobile phones; however, this was not emphasised by learners in Case 2.

Practitioners incorporating an element of competition in m-learning design and implementation tended to focus on using mobile phones in a convenient and efficient way. They influenced learners to perceive m-learning positively and motivate learners to use m-learning.

8.3.2.5 Executive managers as stakeholders

The learners in all three cases perceived executive or senior management involvement in m-learning as a motivator to encourage learners to support and adopt m-learning. Even though in Cases 1 and 3 there were some learners that were senior managers, they were not the majority of learners targeted by m-learning initiatives. On the other hand, m-learning implementation was company-wide in Case 2 and consequently there were relatively more senior or executive managers who were learners. Because executive managers were perceived by practitioners in Case 2 to be critical in motivating learners in the company; practitioners placed a significant level of focused effort on engaging with executive managers during development and implementation of the initiative. Practitioners in Case 2 also learnt from the experience of the previous failed m-learning implementation, partly caused by executive managers not being engaged or supporting the previous implementation. Some learners in Case 3 also emphasised that executive praise of learners’ achievements in competition was a motivator for learners to actively use m-learning. Comments from practitioners and stakeholders suggest that where senior management actively participate in and promote m-learning, learners are more motivated to adopt and actively use the application.

8.4 Cross-case analysis discussion

This section concludes the cross-case analysis chapter by summarising and abstracting insights about the bureaucratic context in which m-learning initiatives exist and implications for the conceptualisation and practice of practitioners and stakeholders during development and implementation. Cross-case analysis findings are also discussed in contrast to existing m-
learning and CoP literature. By using Wenger’s CoP perspective and focusing on practitioners and stakeholders, this study has identified important areas not explored by authors of m-learning or CoP literature. By taking a more holistic view, the cross-case analysis confirms that a focus on social, relational and organisational aspects rather than a dominant technology-focus adopted by other m-learning researchers is useful and provides insights into m-learning implementation (Hirsschheim & Newman 1991; Wiredu & Sørensen 2006; Pimmer et al. 2010; Garrison 2015).

8.4.1 M-learning initiatives are influenced by bureaucratic contextual factors

As discussed in the literature review (Chapters 2 and 3), CoP authors tend to overlook the interactions between CoPs and the organisational context they are embedded in (Josserand 2004). Unwin et al. (2007) assert that by closely examining the nature and impact of external and internal contextual factors, greater insight into the interactive relationship between context, learning and pedagogical practice in the workplace is possible. They argue that “context is highly significant” and by considering wider contextual factors, insight can be gained that will benefit both the organisation and the individual (Unwin et al. 2007). However, authors such as Fuller (2004), Unwin et al. (2007) and Webster-Wright (2010) tend to discuss organisational contexts in generic terms rather than specific bureaucratic factors influencing m-learning CoPs as identified in this study.

This study extends Josserand’s (2004) findings by looking closely at m-learning implementation resembling CoPs. Far from generic recommendations found in CoP literature to date that focuses on organisational knowledge management (Josser 2004); the findings from this study identifies six factors that impose organisational constraints and objectives that practitioners and stakeholders must work within to deliver m-learning (Table 8.8). Two out of the six bureaucratic contextual factors are identifiable and partly discussed in existing CoP literature (i.e. organisational constraints and changes to organisational need, regulatory and/or competitive environment).

<table>
<thead>
<tr>
<th>Table 8.8: Bureaucratic contextual factors in CoP and m-learning literature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contextual Factors</strong></td>
</tr>
<tr>
<td>External regulatory and competitive environment</td>
</tr>
<tr>
<td>Internal organisational need</td>
</tr>
<tr>
<td>Organisational constraints</td>
</tr>
<tr>
<td>Technological changes</td>
</tr>
<tr>
<td>Economic influences</td>
</tr>
<tr>
<td>Legal and compliance</td>
</tr>
</tbody>
</table>

205
This study reveals that because of organisational cost constraints, practitioners often balanced their dual organisational and practitioner roles by liaising and negotiating with stakeholders, while simultaneously carrying out their other roles and responsibilities. They also quickly formed effective working relationships and established a shared sense of joint enterprise because they often had a pre-existing working relationship with stakeholders. These are examples practitioners’ and stakeholders’ developed practice and demonstrate that m-learning CoPs and their members are “elastic”, using Josserand’s (2004) term to describe the flexibility and adaptability of CoPs being able to work within organisational constraints. Organisational cost constraints and focus on revenue also influenced m-learning sponsors. For example, respective sponsors in Cases 1 and 3 took a management control approach that reflected their cost and revenue focus. These constraints impacted both sponsors’ and practitioners’ ability to adequately staff work activities of the m-learning initiative, and access necessary skills and expertise.

Cases investigated reflected a level of stress amongst practitioners during development and implementation, influenced by bureaucratic contextual factors. However, the level of stress was not detrimental to the extent of cases studied by Raz (2007) in a call centre environment. In his study, Raz (2007) found that contextual factors associated with the company’s competitive environment resulted in high staff turnover, part-time employment, low status, poor pay and few career prospects, which significantly influenced customer service representatives to form CoPs to “cope” with their stressful work environment. This study extends and provides new insights into m-learning CoPs in different industries that were not discussed in Raz’s (2007) study. The second bureaucratic contextual factor evident in all three cases was change in organisational needs, and the regulatory and/or competitive environment. This was
emphasised by sponsors and practitioners in all cases. For example, sponsors in Cases 1 and 3 respectively emphasised that the broader competitive environment drives organisational constraints, such as having to train staff in a cost-effective and efficient manner, to more effectively compete against other organisations in the industry. This factor reflects the importance of understanding the influence of changes in the organisation’s needs and the competitive environment.

This study provides new insights into how organisational restructures and bureaucratic procedures and decision-making processes influenced m-learning CoPs (most evident in Case 3). Comments from practitioners and stakeholders indicate that organisational restructures can impact the priority of m-learning initiatives, and the level of senior management support and funding available to m-learning initiatives. Company restructures, bureaucratic procedures and decision-making processes had a major influence on Case 3, resulting in prolonged and delayed m-learning implementation.

The influence of organisational restructures and bureaucratic procedures and decision-making processes have not been explored in-depth by CoP and m-learning literature in relation to m-learning implementation. Even though, not directly addressing limitations in m-learning and technical expertise, Freifeld (2013) offered brief advice to organisations attempting m-learning implementation to start small, using test programs to learn from implementation and allow “success [to] grow over time”.

This study has found that practitioners in all cases were constrained by their limited m-learning experience and technical expertise. Practitioners managed this constraint in all cases by being skilful, resourceful and being problem-solvers. They built strong interpersonal connections with stakeholders to access skills and resources from other staff in-house or engage external vendors.

Only Case 2 had experience from a previous failed m-learning implementation. Practitioners contributed to the previous failed implementation and thus enjoyed a higher level of m-learning adoption and positive feedback from stakeholders in the current implementation. Given this was observed only in one case, this may be an area for future research (see Chapter 9, section 9.6).

8.4.2 Implications of a bureaucratic context

As discussed in the literature review (Chapters 2 and 3), m-learning theory tends to be dominated by positivist and rationalist approaches with a technocentric focus. M-learning research tends to be predominantly focused on student adoption of m-learning in primary/high schools and universities rather than in industry. This study has found that a more holistic view, considering social, relational and organisation aspects of m-learning is important. And the focus on m-learning technology by other authors constitutes only a small part of positive m-learning implementation (see Appendix 5). Cross-case analysis reveals that despite the three cases implementing m-learning in different organisations and with different technologies, the implications of a bureaucratic context influences all cases (Table 8.9).
Table 8.9: Implications of a bureaucratic context

<table>
<thead>
<tr>
<th></th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Supporting the learning needs of learners</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Learners valuing social interactions</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3. M-learning work being time-bound</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>4. Practitioners and stakeholders working together in an informal manner</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>5. Practitioners meeting sponsors’ requirements</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Legend: ‘Yes’ indicates that it was observed in the case and ‘N/A’ indicates that it is not applicable to the case.

Two of these implications are identifiable in the existing literature. Firstly, the need to support learners is emphasised by m-learning authors and confirms the importance of practitioners focusing on learners and their learning needs (Brink 2011; Jass 2013; Stober & Putter 2013; Genzic et al. 2014; Keskin & Kuzu 2015; Chaffe 2016). For example, in their study of professional development in academics (learners) Keskin and Kuzu (2015) designed and implemented a m-learning system tailored to the needs of the learners. Consequently, learners found that the m-learning system provided positive contributions to professional development. Stober and Putter (2013) emphasise that a “learner-centred [m-learning] approach can help learners become more active participants in their own learning and development” (p. 42). Similarly, Brink (2011) emphasises that “when creating m-learning, be sure to consider your audience members (learners’ needs)” (p. 29).

Secondly, learners valuing social interactions have been identified by authors such as Brink (2011), Saccol et al. (2011), Jass (2013) and Chaffe (2016). In their study of employees in the IT department and secretaries in a large private university in Brazil, Saccol et al. (2011) found that learners valued interactions with teachers-instructors and face-to-face contact. The importance of social interaction in m-learning was also emphasised by Chaffe (2016) and Jass (2013, p. 30) – “adult learners enjoy sharing what they know”. On the other hand, Brink (2011) highlights that m-learning should be part of a broader social networking experience with learners using m-learning and social networking technology in an integrated manner – “m-learning will meld with social networking on every learner’s mobile device, making the two technologies a full integrated experience” (p.28). All cases confirm the assertion by these authors that having a social dimension to m-learning implementation is important. They also show that when practitioners acknowledge and incorporate into their planning the preferred methods in which learners choose to learn (e.g. using competition in Case 3), this can establish strong connections with learners. Learners that felt their learning needs were supported had a positive view of practitioners and m-learning.

This study has found that the implementation of m-learning initiatives was time-bound in all cases. The time-bound nature of m-learning implementation has been discussed in m-learning literature (Ting 2005; Wiredu & Sorensen 2006; Sharples et al. 2009). However, these authors discuss time in the context of ‘projects’ rather than initiatives that resemble CoPs. Therefore,
This study extends the idea of time boundaries in the m-learning context by revealing that even though practitioners and stakeholders refer to m-learning initiatives as projects, they actually resemble CoPs. In all cases, m-learning initiatives reflect practitioners and stakeholders sharing a joint enterprise, mutual engagement and shared repertoire – all characteristics of CoPs (Wenger 1998).

This study identifies two new insights to m-learning literature. All cases displayed an informality in the way practitioners and stakeholders worked together in loosely structured initiatives resembling CoPs. This finding extends the understanding of the nature of m-learning initiatives overlooked by other m-learning authors that tend to discuss formal structured projects to introducing m-learning into organisations. The second insight comes from identifying the role of the sponsor in m-learning initiatives and the need for practitioners to meet the sponsor’s requirements. This was also identified in all the cases and has been largely ignored by m-learning authors that do not differentiate between practitioners, sponsors and other stakeholders in m-learning initiatives, but rather focus on discussing m-learning benefits, improvements in organisational performance and supporting learners’ needs (Sharples et al. 2009; Brink 2011; Stober & Putter 2013; Genzic et al. 2014; Chaffe 2016). Therefore, this study provides a richer understanding of the sponsor’s influence on m-learning initiatives and their implementation, not explored by other authors.

Unlike this study grounded in empirical data, existing m-learning literature tends not to be empirically based and m-learning initiatives using a CoP perspective are not discussed. For example, Brink (2011), Freifeld (2013), Jass (2013) and Chaffe (2016) briefly mention some of the implications of a bureaucratic context but with little reference to empirical evidence. The findings from this cross-case analysis provides important insights into specific bureaucratic contextual factors and their implications on m-learning initiatives that have not captured the attention of other m-learning researchers. Therefore, this study provides an important contribution to the m-learning body of knowledge from a CoP perspective to provide a more holistic understanding of what influences and makes m-learning initiatives different from structured projects. Table 8.10 summarises existing m-learning literature that discusses some of the implications of a bureaucratic context in m-learning implementation.
Table 8.10: Existing m-learning literature discussing implications of a bureaucratic context on m-learning implementations

<table>
<thead>
<tr>
<th>Implications of a bureaucratic context on m-learning initiatives</th>
<th>Existing m-learning literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Supporting the learning needs of learners</td>
<td>Brink (2011); Jass (2013); Stober and Putter (2013); Genzic et al. (2014); Keskin and Kuzu (2015); Chaffe (2016)</td>
</tr>
<tr>
<td>● Learners valuing social interactions</td>
<td>Brink (2011); Saccol et al., (2011); Jass (2013); Chaffe (2016)</td>
</tr>
<tr>
<td>○ M-learning work being time-bound</td>
<td>Discussed as projects, usually to introduce m-learning into organisations (Ting, 2005, Wiredu and Sorensen, 2006, Sharples et al., 2009)</td>
</tr>
<tr>
<td>○ Practitioners and stakeholders working together in an informal manner</td>
<td>Not explored by existing literature</td>
</tr>
<tr>
<td>○ Practitioners meeting sponsors’ requirements</td>
<td>Discussed as improving organisational performance and supporting learners’ needs (Sharples et al., 2009, Brink, 2011, Stober &amp; Putter, 2013, Genzic et al., 2014, Chaffe, 2016)</td>
</tr>
</tbody>
</table>

Legend:

● This is discussed and supported in existing m-learning literature

◑ This is partly discussed in existing m-learning literature with a different perspective

○ This characteristic has not been discussed in-depth in existing m-learning literature

Cross-case analysis reveals the bureaucratic context of an organisation can have significant implications for m-learning initiatives. Awareness of the bureaucratic context and implications will allow practitioners and stakeholders to have a greater appreciation and understanding of the complexity associated with implementing m-learning initiatives. Practitioners who have this awareness are more able to deal with challenges associated with these factors. Furthermore, practitioners that are resourceful and skilled in managing the impact of these factors tend to enjoy more positive perceptions from sponsors and learners in the implementation of m-learning initiatives.

8.4.3 How M-learning initiatives emerge as CoPs

All three cases show that m-learning initiatives emerge as CoPs, despite practitioners and stakeholders referring to them as ‘projects’. Authors of CoP literature have not explored m-learning initiatives and implementation. However, some of their suggestions are applicable to m-learning implementation. For example, Harvey et al. (2013) suggest that “working on a mutual project allows employees to become engaged by doing things together, talking and creating artefacts” (p. 36). This suggestion is supported by findings across all cases that reveal small close-knit groups of practitioners and stakeholders working together to implement m-learning to provide positive experiences for those involved. The cases also support the assertion by Harvey et al. (2013) that having a CoP made up of a small group of people should not be
considered a drawback, since having a small group of people could allow CoPs to grow naturally, sustainably and more easily organise its activities.

CoP authors tend to be divided broadly into two groups regarding CoP formation. CoP scholars, such as Brown and Duguid (1991), Lave (1991), Cox (2005) and Raz (2007), argue that CoPs cannot be artificially created and managed because they emerge spontaneously, organise their activities, and set their own learning agenda. Other CoP scholars argue that CoPs benefit from nurturing (Thompson 2005), need organisational intervention, and need to be developed systematically and strategically (Wenger & Snyder 2000; Wenger et al. 2002a; Wenger 2004; Kimble & Bourdon 2008; Probst & Borzillo 2008). Some CoP authors further suggest that CoPs can be purposefully designed and developed (Garavan et al. 2007; Meeuwesen & Berends 2007; Saint-Onge & Wallace 2009; Harvey et al. 2013).

Case analysis has found that the views of both groups are valid in the study of m-learning implementation. Practitioners and stakeholders worked together on m-learning initiatives, resembling CoPs, and were brought into being by organisational need and the sponsor’s priorities rather than something that emerged ‘naturally’. This supports CoP authors asserting that CoPs can be nurtured and created. However, these cases show that m-learning CoPs were not developed systematically or strategically. Practitioners and stakeholders liaised, engaged and worked together as CoPs in response to the bureaucratic context to implement m-learning. In all cases, CoPs were not recognised or purposefully designed, but because of the bureaucratic context of the organisation, practitioners and stakeholders interacted and worked together more like a m-learning CoP than a project team, reflecting mutual engagement, joint enterprise and shared repertoire. Furthermore, the bureaucratic contextual factors and multifaceted interpersonal connections practitioners need to build with stakeholders, reflecting m-learning CoPs, have not been explored by CoP scholars such as Wenger (1998, 2000, 2002, 2004), Roberts (2006), Garavan et al. (2007), Kimble and Burdon (2008), Corso et al. (2009) and Harvey et al. (2013).

8.4.3.1 Certain practices support m-learning CoP coherence

Practitioners in all three cases built strong interpersonal connections with stakeholders to manage the impact of bureaucratic contextual factors. This is an important practice in m-learning implementation and is one of nine practices observed in all three cases (Table 8.11). These practices reflect the way practitioners and stakeholders liaise, interact and cohere as m-learning CoPs.
Table 8.1: Practices reflecting m-learning CoPs

<table>
<thead>
<tr>
<th>Practices</th>
<th>Case 1</th>
<th>Case 2</th>
<th>Case 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Building strong interpersonal connections with stakeholders</td>
<td>Some</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Practitioners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Leveraging pre-existing relationships</td>
<td>Yes</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td>3. Working on day-to-day organisational roles that overlaps with some of the m-learning objectives</td>
<td>Yes</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td>Sponsors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Providing broad m-learning objectives (providing practitioners with a sense of purpose)</td>
<td>Yes</td>
<td>Yes</td>
<td>Some</td>
</tr>
<tr>
<td>5. Being supportive without specifying the practitioners’ roles/responsibilities (providing practitioners with a level of flexibility and autonomy)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6. Being available to address issues</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Senior managers (some are also learners)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Visibly supporting, promoting and participating in m-learning</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Learners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Socially interacting amongst learners and with practitioners and the sponsor</td>
<td>Some</td>
<td>Some</td>
<td>Yes</td>
</tr>
</tbody>
</table>

See Appendix 6 for further examples of these practices reflecting mutual engagement, joint enterprise and shared repertoire grouped by the implications of a bureaucratic context (see section 8.4.2). These practices are further discussed under the headings: mutual engagement, joint enterprise and shared repertoire (Wenger 1998) in sections 8.4.3.2 to 8.4.3.4.

8.4.3.2 Mutual engagement

Mutual engagement is described by Wenger (1998) when individual actions become meaningful because of engagement among individuals in the same community. However, this study has found that even though mutual engagement is present between individual practitioners, the more important practice for m-learning implementation is when practitioners engage with, and form connections, with individual stakeholders such as the sponsor, senior managers and learners.

The lack of documentation and definition between practitioner and stakeholder roles in the m-learning initiative allowed practitioners and stakeholders to work together as a team informally. Practitioners had a level of autonomy to prioritise their work, balance their workload associated with organisational and practitioner roles, and negotiated decisions associated with both roles and with stakeholders. This level of informality and autonomy appears to be a salient characteristic in m-learning initiatives that supports m-learning initiatives develop into CoPs.

Another salient characteristic in m-learning initiatives is the existence of practices that support the establishment of strong interpersonal connections that help build a sense of a close working
relationship between practitioners and stakeholders as they share information, knowledge and m-learning tasks. For example, practitioners met with stakeholders regularly, formally and informally, to make decisions collaboratively and communicate m-learning objectives such as benefits to the company and value/relevance to the learners’ jobs.

Practitioners were also focused on delivering sponsors’ requirements and timelines. They worked closely with the sponsor, senior managers and learners and together they displayed a strong sense of mutual engagement, especially when practitioners and stakeholders negotiated and shared a common understanding of m-learning objectives and priorities.

Even though respective sponsors in all three cases delegated the m-learning work to practitioners, they were an important part of the m-learning initiative because they were accountable for the achievement of m-learning objectives. The sponsor was available to practitioners as part of key decision making and helped address critical issues directed to them, such as securing funding (as demonstrated in Case 3) and engaging with other senior managers to gain their support (demonstrated in all cases). These are examples of practices that reflect a close relationship between practitioners and the sponsor in mutual engagement.

Practitioners that closely liaised and engaged with stakeholders, building close relationships to develop and implement m-learning initiatives tend to gain positive feedback from stakeholders and meet the expectations of sponsors. The connections and relationships practitioners and stakeholders built and maintained in all cases reflect Wenger’s (1998) representation of mutual engagement in CoPs.

**8.4.3.3 Joint enterprise**

The negotiation of a joint enterprise keeps a CoP together as defined by participants. This creates relations of mutual accountability that become an integral part of the practice, according to Wenger (1998). Joint enterprise was established through practitioners and sponsors sharing common m-learning objectives, exchanging knowledge and addressing issues associated with m-learning. Furthermore, sharing a common understanding of m-learning objectives was important for practitioners and the stakeholders in establishing a joint enterprise. M-learning objectives were not just stated but reflected in practitioners’ and stakeholders’ practice. For example, practitioners and sponsors focused on liaising with senior managers to ensure they understood the importance of m-learning objectives. Consequently, senior managers demonstrated a joint enterprise when they visibly supported and participated in m-learning and played an important role in motivating learners to use m-learning. Learners are motivated by the involvement of senior managers and when they perceive m-learning as supporting their learning, as a knowledge sharing or tool for social interaction. Learners that voluntarily and regularly supported each other in using m-learning and interacted with practitioners, is an example of learners exhibiting a sense of joint enterprise as part of the m-learning CoP.

Practitioners had many conversations, both informally and formally, often in face-to-face meetings to make decisions about m-learning work. They did not always agree but worked together to establish common ground over time. The practices of negotiation and finding common ground and using informal and formal meetings extended beyond practitioners and
included negotiation with m-learning stakeholders. For example, the negotiation of a change in the implementation timelines was discussed amongst practitioners and the sponsor. This example illustrates that the sponsor was part of the m-learning CoP and not just on the periphery. In Cases 2 and 3, both the sponsor and senior managers were visible and active in their support of and participation in m-learning. This further demonstrates that they are a core part of the m-learning CoP. And because of their seniority in the organisation, their support and participation of m-learning was important to motivate learners to adopt m-learning.

Practitioners in all cases worked in an informal manner and rarely documented m-learning tasks. They established a sense of joint enterprise by working closely together, frequently communicating face-to-face, via email and phone and balanced their dual roles by sharing practitioner and organisational tasks. For example, in Case 1 practitioners shared the dual workload (practitioner and operational day-to-day tasks) to deal with the stress the m-learning initiative added to their pre-existing role. Practitioners in all cases also made decisions and resolved internal conflicts and differing points of view through discussions and with the sponsor, such as agreeing to delay implementation timelines.

The sponsor was focused on having the m-learning initiative completed quickly, therefore the m-learning work of the practitioners and stakeholders were time-bound. Where practitioners established strong interpersonal connections with stakeholders to work on m-learning work collectively, m-learning work tended to be completed quickly. Furthermore, where practitioners established strong interpersonal connections with stakeholders, m-learning CoPs seemed to continue even after completion of the m-learning initiative. For example, practitioners in Cases 1 and 2 continued to collaborate and communicate after the completion of the initiative because they ultimately reported to the same manager in their day-to-day operational roles. Likewise, the sponsor in Case 2 voiced his continued support of m-learning beyond the current implementation. The responsibilities of the practitioners’ day-to-day roles also related to m-learning matters ongoing. For example, in Case 1 the three practitioners all had roles in the HR Department with responsibilities associated with staff training, including m-learning. Similarly, two practitioners in Case 2 had responsibilities associated with supporting the company’s Information Technology (IT) which includes m-learning technology. The other practitioner in Case 2 had operational day-to-day responsibilities for company-wide communication and staff engagement, also supported by the m-learning implemented. In stark contrast, none of the practitioners had operational day-to-day responsibilities that overlapped with m-learning objectives in Case 3. This may be one of the factors why the m-learning CoP in Case 3 seemed to dissolve, as practitioners did not see a need for their involvement in m-learning after the initiative was completed.

Practitioners displayed a strong sense of purpose, commitment and accountability during the development and implementation of m-learning and believed that the m-learning initiative supported learning needs of staff. This is evidenced when practitioners expressed a strong commitment to delivering the m-learning initiative for the benefit of learners and the company, despite the significant workload and stress this added to their pre-existing role. The association of their day-to-day roles with m-learning responsibilities may have contributed to an ongoing sense of mutual engagement and joint enterprise during and post m-learning development and implementation.
Learners in all three cases commented that they valued social interaction as part of their involvement with m-learning. All cases show that as learners they enjoyed more social interaction associated with the use of m-learning; they tended to value m-learning more than those that had a low level of social interaction associated with m-learning use. Thus social interaction amongst learners and between learners and practitioners was important to the establishment and maintenance of joint enterprise. When learners, practitioners and the sponsor discuss issues or positive aspects of m-learning, they strengthened their shared worldview and understanding of m-learning.

Practitioners and sponsors negotiated a joint enterprise that kept the m-learning CoP together. Learners and senior managers (in Cases 2 and 3) also shared joint enterprise in their understanding and support of m-learning objectives. For example, senior managers understood their influence in motivating learners, and vocally supported and used m-learning to lead by example. The meaning, dedication and mutual accountability practitioners and stakeholders attributed to m-learning throughout implementation (and in some cases beyond), reflect Wenger’s (1998) description of joint enterprise that keeps a CoP together.

8.4.3.4 Shared repertoire

Over time, according to Wenger (1998), the joint pursuit of an enterprise creates resources for negotiating meaning amongst those within a CoP. Shared repertoire of resources including routines, words, concepts activities, tools and methods are developed, become part of its practice and reflect a shared worldview. In all cases, the practices, stories and artefacts (e.g. reports, presentation slides, emails), practitioners and stakeholders reflected a shared repertoire, which in turn reflects Wenger’s (1998) explanation of the importance of resources for negotiating meaning in CoPs.

For example, across all cases emails were frequently exchanged between practitioners and stakeholders to establish a common view of m-learning. Regular informal and formal face-to-face meetings, by phone or video conference were used to discuss issues or exchange information between practitioners and stakeholders. Practitioners also developed an initial plan to identify tasks and stakeholders they would engage, as part of development and implementation of the initiative. The plan and status updates were examples of artefacts and routines that practitioners established and maintained, reflecting a shared repertoire between them and their sponsor.

To engage with learners, practitioners and the sponsor developed and delivered m-learning communication material and added m-learning to the agenda of pre-existing meetings that learners attended. Practitioners presented communication material with senior managers or the sponsor, face to face, at learner meetings or via teleconference or videoconference. This allows senior managers and the sponsor to share the same communication material with practitioners (e.g. presentation slides) and helps align their views and messages shared with learners. Through such artefacts, learners’ views are also aligned with those of practitioners, senior managers and the sponsor. This is demonstrated in Case 2, for example, when the sponsor delivered part of the communication material to learners.
8.4.3.5 Certain organisational conditions support CoP emergence and maintenance

Insights into the way m-learning initiatives in a bureaucratic context resemble CoPs that support both knowledge sharing and learning amongst and between practitioners and stakeholders have not been explored by CoP authors. This study shows that unlike existing CoP authors that tend to present CoPs as a knowledge management tool (Swan et al. 2002; Wenger et al. 2002a; Wenger 2004; Roberts 2006; Kimble & Bourdon 2008; Corso et al. 2009); m-learning CoPs are important to organisations both for m-learning development and implementation, and knowledge sharing and learning amongst and between practitioners and stakeholders in a bureaucratic environment. This study also provides important insights into conditions conducive to the formation of m-learning CoPs. All cases show that the important conditions conducive to the formation of m-learning CoPs include practitioners and stakeholders having: 1) a sense of purpose; 2) interpersonal connections; and 3) informality and autonomy.

A shared sense of purpose was important to practitioners and stakeholders cohering as an m-learning CoP. This manifested in the practitioners’ conceptualisation of their role as meeting the sponsor’s requirements and supporting the learning needs of learners. A sense of purpose also helped drive a sense of accountability amongst practitioners and stakeholders, attributing the importance of their m-learning work as meaningful and valuable to learners and the organisation.

Practitioners also built interpersonal connections between themselves and stakeholders, contributing to their coherence as m-learning CoPs. Where practitioners are skilled in motivating stakeholders and efficiently creating strong connections with stakeholders, they tend to be more successful in gaining the voluntary participation of stakeholders in m-learning activities. This is important, because practitioners often had limited m-learning and technical expertise and limited access to resources and expertise because of organisational costs and time constraints. Consequently, they had to rely on interpersonal connections to gain access to expertise they did not possess, and ask other staff in the organisation to complete m-learning tasks such as asking IT staff to complete technology tasks and marketing staff to work on m-learning marketing tasks associated with m-learning. Practitioners who build strong commitment and support from stakeholders also tend to gain a more positive perception of m-learning implementation from learners and their sponsor.

Practitioners interacted with the sponsor and amongst themselves informally, with minimal documentation and without reference to their position in the organisational hierarchy. The sponsor in all cases also provided the practitioners with a good level of autonomy to make decisions about how they conduct their work.

8.4.3.6 Sponsors of m-learning initiatives are important to m-learning CoPs

This study has found that the sponsor is an important stakeholder and critical to the emergence of m-learning initiatives to CoPs. The sponsor provides practitioners, learners and senior managers with broad m-learning objectives and addresses challenges thrown up by the organisation’s bureaucratic context, such as securing resources and engaging senior managers to gain their support for m-learning. The sponsor also provided practitioners with a level of flexibility and autonomy to conduct their work. This flexibility and autonomy was important to allow practitioners to be adaptable and flexible to work within the organisation’s constraints.
Furthermore, the sponsor imposed a sense of urgency which provided practitioners, learners and senior management with a focus on m-learning work being time-bound so that the benefits of m-learning could be realised by learners and the organisation more broadly. Practitioners in all cases aligned their conceptualisation of m-learning work with the sponsor’s requirements and were skilled in maintaining strong interpersonal connections with the sponsor, allowing them to leverage the senior position of the sponsor to gain senior management support, secure funding and motivating learners. Figure 8.1 summarises how the sponsor addresses challenges associated with the organisation’s bureaucratic context and in doing so, the sponsor operationalises the concepts of mutual engagement, joint enterprise and shared repertoire (discussed in sections 8.4.3.2 to 8.4.3.4 above).

Figure 8.1: Summary of the importance of sponsors in m-learning CoPs

8.4.3.7 Organisational instruments, such as competitions, can support CoP coherence

Case 3 demonstrates that organisational instruments, such as a well-designed competition, can support the coherence of m-learning CoPs made up of practitioners, learners and the sponsor. Compared with the other two cases, learners in Case 3 were more socially active in engaging with m-learning training material, helping each other in using the m-learning application and understanding the training material, to improve their individual and team scores reported on a weekly basis via a national leader board. The high level of social activity experienced in Case 3 reflected the effectiveness of practitioners’ efforts in preparing weekly emails and liaising with learners in senior management positions, to encourage other learners by using positive praise relating to behaviours and scores associated with competition as a motivator.
This case shows that competitions can be important and powerful in the coherence of a CoP because they contribute to a shared repertoire by providing practitioners and stakeholders with a routine and rhythm (regular scores provided) and artefacts (national scoreboard and reports) that promote a common and shared view of m-learning. The competition also supported meaningful social interaction (mutual engagement), as demonstrated when learners voluntarily help each other, encourage those that struggle and find ways of making the understanding of m-learning training material fun, through banter and friendly competition. A sense of joint enterprise was negotiated when learners took it upon themselves to work together in teams and encourage the adoption and engagement of m-learning training material, despite m-learning not being mandated. Learners worked together with the encouragement and support of senior managers (some of which were learners) to find time in their busy day-to-day role in sales to use the m-learning application regularly, on both an individual basis and with other learners.

Given the importance and potential benefits of using a competition, promising rewards for learners in m-learning implementation, why was a competition used only in Case 3 and not in the other cases? This may be due to the m-learning technology practitioners chose to implement in Case 3, supporting an element of competition with automated reporting of scores at individual and team levels. The m-learning technology in Cases 1 and 2 did not have a competition element, nor any automated reporting that practitioners and stakeholders continuously accessed as a way to understand the effectiveness of m-learning.

The size and culture of the company may also be factors influencing Case 3 to have an element of competition and not the other two cases. For example, Company C in Case 3 was the biggest company amongst the three cases investigated and had a highly competitive culture amongst its sales staff. Even though Case 1 also targeted sales staff with their m-learning initiative, and described a competitive sales culture, Case 1 was a smaller company in terms of employee numbers and revenue compared to Case 3. The size of the organisation influencing the approach to professional learning was discussed by Bishop (2017) in the context of workplace learning of trainee accountants and not m-learning. Games embedded in m-learning with goals and rewards were described by Chaffe (2006) as important to motivate learners to use m-learning. However, this was discussed briefly by Chaffe (2006) without reference to empirical evidence. This study extends the discussion provided by Chaffe (2006) by providing a greater understanding of how organisational instruments, such as a competitions with goals and rewards, are implemented and conceptualised using a rigorous research approach and supported by rich empirical data.

In summary, this study has found conditions conducive to the formation of m-learning CoPs and Case 3 demonstrates that an element of competitions can be important and powerful in the emergence of m-learning CoPs in ways that have not been researched by CoP or m-learning researchers in an empirical manner. All cases show the importance of m-learning CoPs in the implementation of m-learning, despite these being called ‘projects’. There seems to be no harm in using the term ‘project’ because this may help re-enforce the time-bound nature of m-learning work, to provide practitioners and stakeholders with a sense of urgency and focus to work together. In m-learning implementation it is important that practitioners and stakeholders are resourceful and skilful, in some cases using an element of competition, and collaborate to
deal with the challenges associated with implementing m-learning within a bureaucratic context resembling CoPs, rather than projects, through mutual engagement, joint enterprise and shared repertoire.

8.4.4 M-learning skills and practice framework

A CoP perspective has informed this study and provides a holistic view of m-learning not explored by other m-learning authors. Consequently, this study provides a deeper understanding of the practices and the way practitioners and stakeholders conceptualise m-learning initiatives. This study also reveals important practice implications for practitioners that are responsible for the development and implementation of m-learning initiatives in a bureaucratic company context. These implications are summarised in a m-learning skills and practice framework that identifies the skills and practices that practitioners should possess or develop as part of their planning, development and implementation of m-learning initiatives (Table 8.12).

<table>
<thead>
<tr>
<th>Implications of a bureaucratic context</th>
<th>Skills and practices that practitioners should focus on during m-learning development/implementation in a bureaucratic context</th>
</tr>
</thead>
</table>
| Practitioners and stakeholders working together in an informal manner | • Be resourceful and have strong relational skills to source and liaise with the sponsor, staff from other departments and/or vendors for their expertise to complete tasks associated with the m-learning initiative.  
• Foster a strong sense of commitment, accountability and collaboration when working closely with practitioners and stakeholders by respecting each other’s expertise, resolving differences in perspectives through discussions, making decisions collaboratively and without reference to the organisational hierarchy. |
| Practitioners meeting sponsors’ requirements | • Understand and align their priorities with the sponsors’ priorities and requirements and work within the company’s bureaucratic context (e.g. able to work with limited m-learning and technical expertise and within cost constraints and meeting changing organisational needs and changes in the competitive environment).  
• Meet with the sponsor regularly to establish and maintain interpersonal connections and a positive relationship with the sponsor. |
| M-learning work being time-bound | Develop skills to balance the workload associated with performing dual roles (practitioner and day-to-day organisational role), be adept at problem solving manage different priorities, be able to work under pressure and be flexible and supportive in sharing the workload amongst practitioners and stakeholders (by establishing interpersonal connections with stakeholders) |
| Supporting the learning needs of learners | • Develop skills and dedicate significant efforts to effectively communicate to the learners about m-learning benefits specific to the learners’ jobs and learning needs.  
• Establish feedback mechanisms to gain regular feedback from the learners on how to effectively communicate to the learners and to continually improve m-learning.  
• Develop skills and dedicate significant efforts to develop interpersonal connections and engage with senior managers to support m-learning because they motivate learners to use m-learning. |
| Learners valuing social interactions | Focus on developing and implementing m-learning that supports learner interactions, socialisation and collaboration and not perceived to be taking the focus away from the company’s customers or the learners’ jobs. |
In contrast to existing practitioner literature that tends to offer brief hints, tips and advice often without reference to empirical evidence (Boehle 2009; Stober & Putter 2013; Audronis 2015; Chaffe 2016; Kochattil 2016; Oesch 2017), this framework provides a detailed and practical understanding that provides an important contribution for those involved in m-learning initiatives. Furthermore, unlike existing academic literature that tend to be based in an educational context (Parsazadeh et al. 2018, Fuller & Joynes 2015; Keskin & Kuzu 2015; Saccol et al. 2011), this framework has been developed from m-learning implementations in an industry context and could be more relevant to those associated with m-learning in an industry context.

This framework suggests that practitioners and stakeholders need to be resourceful, flexible and have the skills to foster commitment and collaboration, and work within cost and time constraints. Practitioners and stakeholders also need to have the skills to effectively engage with learners and senior managers to develop m-learning that supports learners’ needs, including interactions that reflect a social dimension to their learning. This framework can also prepare existing employees to understand what is needed to take on m-learning practitioner roles that require strong relational skills to build interpersonal connections with stakeholders to complete the work associated with the m-learning initiative. The framework also puts into perspective the significant social and relational skills required to implement m-learning initiatives in comparison to the small part technology expertise contributes to the holistic understanding of m-learning implementation in bureaucratic organisations.

Practitioners and stakeholders tend to refer to m-learning initiatives as ‘projects’ because they are time-bound however, the cases show that they worked together in an informal manner more characteristic of CoPs than project teams. Practitioners often perform their practitioner roles in addition to pre-existing day-to-day organisational role. Therefore, to be successful practitioners they need to be skilled at balancing the tasks associated with m-learning efforts and those of other organisational roles. Practitioners also need to be adept at problem solving and competent in negotiating with their line managers and m-learning sponsors when making trade-offs amongst priorities. Also, practitioners need to be able to work under pressure and be flexible and supportive in sharing the workload within the practitioner team on an as-needs basis.

Where practitioners have to balance dual roles, they also need to reflect on the importance of establishing interpersonal connections and communicating and negotiating with stakeholders. Data from the interviews suggest that where practitioners are liaising and negotiating with stakeholders, including sponsors and learners, they are more able to balance the responsibilities of their dual roles. Furthermore, a high level of collaboration amongst practitioners and stakeholders, and strong sense of commitment and accountability to the development and delivery of the m-learning initiative is critical to its success.

Practitioners that work collaboratively with their sponsors understand and align with the sponsor’s priorities and requirements, and how these may be affected by the company’s bureaucratic contextual factors tend to be viewed positively by the sponsor and learners. Practitioners that met with their sponsor regularly, formally and informally, to establish and
maintain strong interpersonal connections, and align their work with the sponsor’s expectations tend to gain the sponsors’ support in addressing issues directed to them.

Practitioners, learners and sponsors emphasised that engaging with learners with effective m-learning communication was very important. This was especially the case in terms of explaining why m-learning was implemented and how m-learning would help learners on the job. Practitioners that were skilled and effectively communicated with learners about m-learning benefits, specific to the learners’ jobs and learning needs, seemed to be more successful in the implementation of m-learning initiatives. Furthermore, practitioners that took care to communicate, develop and implement m-learning in a way that was not perceived by staff as disruptive, or reduced their focus on customers or their jobs tended be more successful in their implementation.

Furthermore, practitioners should consider developing and implementing m-learning that fosters a high level of interaction, socialisation and collaboration amongst learners. Based on the analysis of these three cases, a high level of interaction, socialisation and collaboration amongst learners, using the m-learning application or outside of it, tends to result in a higher level of m-learning adoption. Based on comments from learners in the three cases, practitioners should regularly seek feedback and input from them to understand the different factors and ways to motivate learners to adopt m-learning. Practitioners should also establish mechanisms to gain feedback from learners on how to effectively communicate with learners and to continually improve m-learning.

Practitioners across all three cases generally did not have all the expertise required to develop and implement m-learning initiatives. They had to be resourceful and skilled in identifying, liaising and engaging with personnel (internal and external to the company) to complete tasks requiring skills or expertise they did not possess. Practitioners were also skilled at managing technical issues with the vendor so that technical complexities were not visible to the sponsor or learners.

Learners emphasised that active and vocal senior management support of m-learning would motivate more learners to use m-learning. Practitioners that built strong interpersonal connections and engaged with senior managers in the company during development and implementation of m-learning tended to receive more positive feedback from the sponsor and learners than those who engaged less with senior managers.
Chapter 9 – Conclusion

Empirical research into m-learning development and implementation across three Australian case studies has been conducted in this study using Wenger’s (1998) Community of Practice perspective. This research was motivated by the emerging trend that m-learning promises significant benefits and is increasingly used by organisations to improve the performance of its employees through knowledge sharing and training. This research was also motivated by a gap in m-learning research in an industry context, focusing on m-learning practitioners and stakeholders. Furthermore, m-learning research to date suggests that m-learning development and implementation can be problematic and related to social, relationship and organisational challenges (Wiredu & Sorensen 2006; Pachler et al. 2011; Genzic et al. 2014).

This study demonstrates that the development and implementation of m-learning initiatives are socially, relationally and organisationally interrelated and complex. Often m-learning stakeholders only see a small part of the effort required to develop and implement m-learning initiatives in a company. For practitioners and stakeholders, the technology challenges associated with m-learning implementation play a small part as compared to social, relational and organisational challenges.

By taking a more holistic approach, considering social and organisational factors, rather than the current dominant focus on technical and generic solutions; this study provides a deeper understanding of m-learning implementation grounded in empirical data. Important findings and insights from this study have been discussed in the previous cross-case analysis chapter.

This chapter highlights how this study addresses the research questions with its key conclusions, followed by this study’s contribution to CoP theory and m-learning body of knowledge and practice. This chapter also discusses the limitations of this study, makes suggestions for further research and offers final concluding remarks.

9.1 Key conclusions addressing research questions

This study confirms that m-learning initiatives are complex and involve multifaceted social and organisational contextual considerations. The following research questions have been addressed by this study: 1) what are the practices that allow m-learning practitioners to cohere as a Community of Practice (CoP) in m-learning development and implementation; 2) how do m-learning stakeholders, such as learners and sponsors, conceptualise m-learning; and 3) how does a CoP perspective provide insights into organisational m-learning initiatives.

Figure 9.1 illustrates how the research questions are addressed in this section and the numbers in the figure refers to the section headings in this chapter.
Figure 9.1: Summary of how this study addresses the research questions

9.1.1 M-learning initiatives are influenced by bureaucratic contextual factors

Practitioners and stakeholders in m-learning initiatives are not impervious to an organisation’s bureaucratic context. Far from generic contextual insights provided by CoP literature to date (Josserand 2004), the findings from this study identify six bureaucratic contextual factors which impose organisational constraints and objectives that practitioners and stakeholders must work within to deliver an m-learning initiative. This study provides an in-depth understanding of the implications of these bureaucratic contextual factors and how practitioners and stakeholders effectively managed these factors while developing and implementing m-learning.

Practitioners and stakeholders cannot control bureaucratic contextual factors such as organisational restructures, complex procedures and decision-making processes, and cost and time constraints imposed on their m-learning work. However, practitioners and stakeholders developed practices and relationships to deal with these contextual factors in developing and implementing m-learning. For example, they formed strong interpersonal connections and worked together as CoPs. Practitioners also aligned their priorities to the sponsor’s needs, reflecting other bureaucratic contextual factors such as changes to organisational need, regulatory and/or competitive environment. External expertise was engaged when practitioners and stakeholders had limited access to m-learning and technical expertise. Another example is provided when practitioners adjusted their approach to m-learning development and implementation when they reflected on experience from previous failed m-learning implementation.

This study has found that practitioners that are resourceful and skilled in managing the implications of the bureaucratic contextual factors identified, tend to enjoy more positive perceptions from sponsors and learners in the implementation of m-learning initiatives. Therefore, this study provides important insights into these factors to help practitioners, stakeholders and researchers understand and manage their implications when delivering or researching m-learning initiatives.
M-learning initiatives may emerge as CoPs when supported by certain organisational conditions and practices

The emergence of m-learning CoPs are important, because they tend to emerge in response to the company’s bureaucratic context which throws up challenges for practitioners and stakeholders in the implementation of m-learning initiatives. Consequently, the implications of working within a bureaucratic context shaped the conceptualisation and practices of practitioners and stakeholders alike. M-learning CoPs emerge as a way for them to manage and control m-learning work within the constraints of the organisation’s bureaucratic context, which is outside their control.

This study has found that m-learning CoPs are often not recognised or referred to as CoPs; therefore, they were not purposefully ‘created’ or managed. Rather m-learning CoPs emerged as practitioners and stakeholders worked together, dealing with the challenges of developing and implementing m-learning in the organisation’s bureaucratic context. These m-learning CoPs are often called ‘projects’ but in their nature resemble CoPs, reflecting Wenger’s (1998) concept of mutual engagement and shared repertoire in ways not explored by existing m-learning and CoP literature. This study found that there seems to be no harm in using the term ‘project’ to describe an m-learning initiative because this may help reinforce the time-bound nature of m-learning work, to provide practitioners and stakeholders with a shared sense of urgency and focus. However, these ‘projects’ benefit in emerging as CoPs over time, as practitioners and stakeholders worked together to deal with the challenges associated with implementing m-learning within a bureaucratic context through mutual engagement, joint enterprise and shared repertoire.

M-learning CoPs tend to begin as projects because practitioners are provided with a mandate by the sponsor in the form of broad m-learning objectives that provide practitioners and stakeholders with a sense of purpose driven by time constraints. This supports CoP authors, such as Wenger and Snyder (2000), Wenger et al. (2002a), Thompson (2005), Garavan et al. (2007), Meeuwesen and Berends (2007), Kimble and Bourdon (2008), Probst and Borzillo (2008), Saint-Onge and Wallace (2009) and Harvey et al. (2013), who argue that organisational nurturing and intervention is beneficial to CoPs.

This study demonstrates that m-learning CoPs may emerge, without specifically being designed or purposefully created when supported by certain conditions including: 1) a sense of purpose; 2) interpersonal connections, 3) practitioners and stakeholders having a level of informality and autonomy to interact and conduct their work.

A shared sense of purpose was important to practitioners and stakeholders cohering as a m-learning CoP. This manifested in practitioners’ conceptualisation of their role as meeting the sponsor’s requirements and supporting learning needs of learners. A sense of purpose also helped drive a sense of accountability amongst practitioners and with stakeholders, as they attribute the importance of their m-learning work as meaningful and valuable to learners and the organisation. The attribution of meaning shared by practitioner and stakeholders in the CoP is similar to Wenger’s (1998) concept of mutual engagement and joint enterprise. However, this study extends the concept of mutual engagement, joint enterprise and shared repertoire to m-learning implementation in a bureaucratic context.
Working within a bureaucratic context that imposes constraints, priorities and objectives, practitioners and stakeholders develop practices that allowed them work within this context and cohere as m-learning CoPs. An important example is the practitioners’ inclination to build interpersonal connections with stakeholders, contributing to their coherence as m-learning CoPs. Some of these m-learning CoPs dissolved after the m-learning initiatives were completed, while others appeared to continue. Where practitioners are skilled in motivating stakeholders and efficiently creating strong connections with stakeholders, they tend to be more successful in gaining the voluntary participation of stakeholders in m-learning activities. This is important, because practitioners often had limited m-learning and technical expertise and limited access to resources due to organisational cost and time constraints. Consequently, they had to rely on interpersonal connections to gain access to expertise they did not possess and ask other staff in the organisation to complete m-learning tasks, such as asking IT staff to complete technology tasks and marketing staff to work on m-learning marketing tasks associated with the m-learning implementation. Practitioners who build strong commitment and support from stakeholders also tend to gain a more positive perception of m-learning implementation from learners and their sponsor.

M-learning CoPs are also characterised by practitioners and stakeholders working together informally. Practitioners often leveraged pre-existing working relationships to establish a shared sense of mutual engagement and joint enterprise quickly to solicit help from stakeholders. Thus this study demonstrates the importance of practitioners’ relational skills in the coherence of CoPs and m-learning implementation, largely ignored by m-learning authors.

9.1.3 Sponsors are important to m-learning CoPs

The sponsor as an important stakeholder, and the critical role he/she plays in the emergence of m-learning initiatives to CoPs, is a new insight uncovered by this study and appears to be under-explored by m-learning and CoP researchers. The sponsor provides practitioners and other stakeholders with broad m-learning objectives, addresses challenges associated with the organisation’s bureaucratic context, imposes a sense of urgency and provides practitioners with a level of flexibility and autonomy to conduct their work. This study provides a deeper understanding of the importance and role of the sponsor and offers suggestions for the education of practitioners to focus on and develop their relational skills to build strong interpersonal connections with sponsors which can help motivate learners and gain support from senior managers of m-learning.

9.1.4 Organisational instruments can be used to support CoP coherence

M-learning initiatives that use organisational instruments, such as an element of competition can be important and powerful in the coherence of CoPs because they contribute to a shared repertoire by providing practitioners and stakeholders with a routine and rhythm (regular scores provided) and shared artefacts (national scoreboard and reports) that promote a common and shared view of m-learning. Practitioners, learners and the sponsor refer to their own experience with competition and discuss emails and/or reports related to competition to share knowledge and learn about what is working well and what can be improved, as they negotiate a joint enterprise or understanding of their involvement and the benefits of m-learning in the CoP. An element of competition as part of the m-learning implementation also
supported meaningful social interactions of mutual engagement, as demonstrated when learners voluntarily help each other, encourage those that struggle and find ways of making the understanding of m-learning training material fun through banter and friendly competition between other learners, using the m-learning scores released via email on a weekly basis. Therefore, this study has revealed novel insights into how an element of competition can both enhance m-learning implementation and CoP coherence, enriching and extending Wenger’s (1998) concepts of mutual engagement, joint enterprise and shared repertoire.

9.2 Contribution to CoP theory

This study addresses the absence of m-learning and CoP literature that theorises m-learning initiatives, resembling CoPs, and how social, relational and organisational factors influence its development and implementation in an organisational bureaucratic context. Findings from this study add new dimensions, and extend and provide a deeper understanding of how social and contextual considerations help practitioners, stakeholders and researchers improve the development and implementation of m-learning in bureaucratic organisations. This study also contributes to CoP and m-learning body of knowledge by providing empirically based research insights that can be generalised, theorised and further tested for robustness and validity in future research.

M-learning CoPs are critical to m-learning implementation. The findings from this study can be abstracted and generalised to apply to other initiatives of a similar nature to m-learning initiatives (such as some IS initiatives) in a bureaucratic organisational context. Similar to m-learning initiatives, IS initiatives frequently involve people with different backgrounds and expertise to come together to work on a task of common interest. However, what is unique to m-learning is that while the relationship between the practitioner and stakeholders is based on mutual dependence, the participation of stakeholders is largely voluntary. While those people responsible for delivering organisational IS project are generally mandated with coercive powers, m-learning practitioners do not have such powers and rely on the influence, relationships and interpersonal connections they establish by liaising and engaging with stakeholders.

This study validates the use of Wenger’s CoP perspective (1998) to understand m-learning implementation in a bureaucratic environment. This is because the findings show evidence of mutual engagement, joint enterprise and shared repertoire reflecting complex social, relational and organisational considerations when m-learning initiatives are implemented. By using a CoP perspective, this study provides significant insights and contributions to CoP theory not addressed by CoP authors, thereby enriching CoP theory. Consequently, four important contributions to CoP theory are provided by this study.

The findings presented in this study can be generalised and have potential application in organisations with similar m-learning requirements, mobile workforce and organisational structure. Whilst this study is not without its limitations, the findings are based on an examination of three cases that involved twenty-six interviews. Even though, certainty in the findings cannot be claimed, the findings are representative of m-learning implementation practice in the wider business environment. Therefore, the findings have been carefully presented in a tentative fashion with their generalisability qualified, when required.
1. **Extending CoP theory to m-learning implementation and revealing that in an organisational context, CoPs are influenced by bureaucratic contextual factors**

This study demonstrates that m-learning initiatives that emerge as CoPs, in effect evolve as practitioners and stakeholders work together to negotiate and resolve the constraints imposed by their organisations’ bureaucratic context. These m-learning CoPs can emerge even when they are not purposefully designed or recognised as ‘CoPs’ by practitioners and stakeholders. The findings from this study challenge the over-simplified view of some CoP scholars that perceive projects as structured and self-contained entities completely different from CoPs. This study contributes to CoP theory by demonstrating that a holistic understanding of how m-learning initiatives emerge as CoPs is important for m-learning implementation to be effective and more sustainable within bureaucratic contexts.

Furthermore, this study shows that m-learning CoPs can support both the delivery of m-learning initiatives, as well as knowledge sharing and learning of m-learning training material, and how to implement initiatives in a bureaucratic environment amongst and between practitioners and stakeholders. By taking an empirical approach, insights into m-learning CoPs can be abstracted and theorised. Therefore, a significant contribution to CoP theory is made because these findings can be used and tested against other initiatives embedded in bureaucratic contexts, reflecting similar bureaucratic contextual factors identified in this study.

2. **Adding to CoP theory by revealing the conditions and practices contributing to the emergence of CoPs**

A new dimension to CoP theory has been identified by this study. The conditions that contribute to the emergence and maintenance of m-learning CoPs constitute a new dimension to CoP theory that has not previously captured the attention of CoP authors. Practitioners and stakeholders had no control over the organisation’s bureaucratic context. The organisation’s bureaucratic context had important implications for practitioners and stakeholders that influenced their conceptualisation and interpretation of m-learning initiatives and practices. These implications formed conditions conducive to the emergence and maintenance of m-learning CoPs, allowing practitioners and stakeholders to deal with the challenges associated with implementing m-learning in bureaucratic contexts.

Given the benefits associated with m-learning initiatives; this study provides an understanding of how to foster and establish the conditions and practices contributing to the emergence and maintenance of m-learning CoPs. Consequently, with in-depth understanding of the conditions and practices provided by this study, m-learning researchers, practitioners and stakeholders can better plan and support CoP development, to improve m-learning adoption and sustainability of m-learning benefits to employees and the organisation.

3. **Enriching CoP theory by further bringing to light how the concepts of mutual engagement, joint enterprise and shared repertoire are operationalised in an organisational context**

This study provides insights into the significant influence of the sponsor on CoPs, and enriches CoP theory because it extends how CoP coherence can be enhanced and operationalised by sponsors in an organisational context. This study demonstrates that the sponsor is critical and
significantly influences the development and implementation of m-learning. The sponsor contributes to m-learning initiatives emerging as m-learning CoPs, supporting practitioners and stakeholders to deal with the challenges of delivering m-learning in a bureaucratic context. Sponsors are also critical in providing important guidance and focus to practitioners and stakeholders, so their efforts are prioritised and tailored to meet the organisation’s needs, allowing both learners and the organisation to realise the benefits of m-learning. By revealing the important role of the sponsor in CoPs, this study demonstrates that CoPs can be more widely applied, and supports both the development and implementation of initiatives, learning and knowledge sharing in a bureaucratic industry context, for the benefit of both employees and the organisation.

4. Enriching CoP theory by revealing how instruments, such as an element of competition, enhance mutual engagement, joint enterprise and shared repertoire in CoPs

This study enriches and extends CoP theory by revealing how an element of competition can be used as instruments in m-learning initiatives to enhance interpersonal relations within a CoP and contribute to a sense of mutual engagement, joint enterprise and shared repertoire amongst practitioners and stakeholders. These novel insights can help researchers and organisations understand how instruments, such as an element of competition, can motivate and improve employee engagement and adoption of m-learning in a bureaucratic context. The findings also reveal both the positive and negative aspects of developing and implementing m-learning with an element of competition. Therefore, this study provides important insights that are useful to CoP scholars to further enrich CoP theory and its broader application in the development and implementation of initiatives in an industry context. This study thus confirms the wider application of CoPs highlighting the value of CoPs in both the development and implementation of m-learning initiatives as well as supporting knowledge sharing and learning of m-learning training content and initiative implementation, improving employee engagement and adoption of m-learning for the benefit of employees and the organisation.

9.3 Contribution to m-learning body of knowledge

Three contributions to the m-learning body of knowledge are provided by this study.

1. Identifying and confirming bureaucratic contextual factors and their implications for m-learning initiatives

This study has identified four important bureaucratic contextual factors influencing m-learning initiatives based on empirical evidence, not explored by m-learning CoP authors previously. These factors include: 1) organisational restructures; 2) organisational bureaucratic procedures and decision-making processes; 3) limited m-learning and technical expertise; and 4) experience from previous failed m-learning implementation. This study confirms and extends a greater understanding of two other bureaucratic contextual factors influencing m-learning initiatives. These factors include: organisational constraints (cost and revenue focus) and changes to organisational need, regulatory and/or competitive environment.

The organisation’s bureaucratic context has important implications for m-learning practitioners and stakeholders including: 1) supporting the learning needs of learners; 2) learners valuing social interactions; 3) m-learning work being time-bound; 4) practitioners and stakeholders
working together in an informal manner; and 5) practitioners meeting sponsors’ requirements. The first two characteristics are well discussed by m-learning authors. However, the third characteristic shared by all cases – m-learning work being time-bound has been discussed by m-learning authors typically as projects rather than CoPs. Therefore, this study extends the idea of time boundaries in the m-learning context by revealing that despite practitioners and stakeholders often labelling m-learning initiatives as projects, they actually resemble CoPs.

This study provides further insights by identifying two m-learning characteristics not explored in-depth by other m-learning authors. Firstly, practitioners and stakeholders worked together informally, with a level of autonomy and a loosely structured manner resembling CoPs. This insight extends the understanding of the nature of m-learning initiatives overlooked by other m-learning authors that tend to discuss formal structured projects when referring to m-learning initiatives. Secondly, the importance of practitioners meeting the sponsor’s requirements in the context of m-learning initiatives has not been studied to date by m-learning authors that tend to discuss the people involved in m-learning implementation in simple and generic terms, without in-depth understanding of practitioners, sponsors and other stakeholders, and the connections and relationships between them. In contrast, this study provides such in-depth understanding.

Practitioners and stakeholders aware and skilled in working together, resembling m-learning CoPs, are better able to deal with the challenges of developing and implementing m-learning in a bureaucratic context. Consequently, m-learning initiatives emerging as CoPs tend to be beneficial to the organisation and its employees, because practitioners and stakeholders share knowledge and learning of m-learning training material during m-learning development and implementation. Practitioners also benefit from working closely with stakeholders and improving knowledge on how to develop and implement initiatives in their bureaucratic company’s context in general, that they could apply to other initiatives of a similar nature.

2. Identifying the practices that reflect practitioners and stakeholders cohering as m-learning CoPs

Unlike existing m-learning literature, this study has found that the technology associated with m-learning was not a major concern for practitioners and stakeholders. This study has found that m-learning CoPs form so that practitioners and stakeholders can deal with the challenges and implications of implementing m-learning in a bureaucratic context. M-learning CoPs thus tend to have:

- **Practitioners** that display the following practices: 1) building strong interpersonal connections with stakeholders; 2) leveraging pre-existing relationships; and 3) working on their day-to-day organisational roles that overlap with some m-learning objectives.

- **Sponsors** that display the following practices: 1) providing broad m-learning objectives, providing practitioners with a sense of purpose; 2) being supportive without specifying the practitioners’ roles/responsibilities, providing practitioners with a level of flexibility and autonomy; and 3) being available to address issues.
• Learners that display the following practices: 1) socially interacting amongst learners and with practitioners and the sponsor; and 2) senior managers visibly supporting, promoting and participating in m-learning.

M-learning research to date has not adopted a CoP perspective to investigate m-learning development and implementation. This study provides a significant contribution to the m-learning body of knowledge and practice. This is because m-learning literature to date has not empirically explored how m-learning initiatives are developed and implemented by looking closely at practitioners’ and stakeholders’ practices, how they conceptualise m-learning initiatives, how they cohere as CoPs and finally, their role in the company’s bureaucratic context.

Some m-learning CoPs continue even after the initiative has been completed. This demonstrates that m-learning initiatives that emerge as CoPs are valuable and important for organisations to understand and foster, because they encourage a sense of cohesion and community through continuous engagement, and social interactions amongst practitioners and stakeholders. Therefore, this study demonstrates that practices and social and organisational aspects of m-learning implementation are critical, and often as or more important than the technocentric focus taken by other m-learning researchers, in the realisation of m-learning benefits to both employees and the organisation.

3. Identifying the conditions conducive to m-learning CoP emergence and maintenance in supporting m-learning development and implementation in a bureaucratic context

By focusing on social, relational and organisational aspects of m-learning implementation; this study has found that three important conditions support m-learning CoP emergence in a bureaucratic context: sense of purpose, interpersonal connections and informality and autonomy in practitioners’ and stakeholders’ interactions and work. Consequently, m-learning CoPs were significant in supporting m-learning development and implementation in a bureaucratic context.

In summary, the findings from this study provide a significant contribution to the m-learning body of knowledge, because m-learning literature to date has not empirically investigated how m-learning initiatives are developed and implemented, with a focus on practitioners and stakeholders in bureaucratic environments. This study provides an in-depth understanding, not investigated by other m-learning researchers, of the social, relational and organisational aspects of m-learning initiatives by closely observing practitioner and stakeholder practices, their connections and relationships, and how they conceptualise m-learning initiatives and their role in a bureaucratic organisational context.

By exploring bureaucratic contextual factors, their implications and the conditions conducive to m-learning CoP emergence and maintenance, a significant contribution to the m-learning body of knowledge is provided by this study. The understanding of m-learning implementation in an industry context is extended beyond the generic recommendations that can be found in CoP literature to date (Josserand 2004). A greater understanding of the factors influencing m-learning initiatives will help m-learning researchers and practitioners to appreciate the
complexity of m-learning implementation, and better plan and implement m-learning initiatives.

9.4 Summary of contributions to CoP theory and the m-learning body of knowledge

A theoretical model is developed in this study (Figure 9.2) to draw attention to the important role of contextual factors, and their implications, and the conditions conducive to the emergence and coherence of organisational CoPs. Furthermore, Figure 9.2 provides a pictorial summary of this study’s contribution to CoP theory and the m-learning body of knowledge. The white ovals show bureaucratic contextual factors, grey shaded ovals show implications of a bureaucratic context and the black oval shows the conditions conducive to m-learning CoP emergence and maintenance. The oval with dots as shading shows that this study also contributes to CoP theory by extending CoP concepts of mutual engagement, joint enterprise and shared repertoire, by revealing the importance of an element of competition and the influence of sponsors in the emergence of m-learning CoPs from projects or initiatives.
Organisational bureaucratic context

M-learning initiatives resembling CoPs
(made up of practitioners and their stakeholders)

1) Sense of purpose
2) Interpersonal connections
3) Informality and autonomy

Legend:
- Influencing m-learning initiatives/CoPs
- Bureaucratic contextual factors
- Implications of a bureaucratic context
- Conditions conducive to m-learning CoP coherence

Contribution to both CoP and m-learning body of knowledge:

Contribution to CoP theory:
- Extending CoP concepts of mutual engagement, joint enterprise, shared repertoire

Figure 9.2: Contribution to CoP theory and m-learning body of knowledge
9.5 Contribution to m-learning practice

In addition to the contribution to m-learning and CoP theory, this study contributes to m-learning practice. The findings show that m-learning initiatives are socially complex and interrelated and practitioners need more than technical skills. To contribute to positive m-learning outcomes they require social and relational skills, to be able to form strong interpersonal connections with stakeholders, be resourceful and align their priorities with the sponsor’s requirements.

This study has found that m-learning implementation often involves inexperienced practitioners. Therefore, m-learning skills and the practice framework (see previous chapter, section 8.4.4) developed from this study can also prepare organisations and existing employees to understand what is required to take on m-learning practitioner roles.

This framework is original because it has been developed by addressing the implications of implementing m-learning in a bureaucratic context, and revealing important skills and practice required for m-learning practitioners and stakeholders to implement m-learning initiatives in a bureaucratic environment. The framework reveals the skills and practices that will help m-learning practitioners and stakeholders conceptualise m-learning more holistically, and support better planning, development and implementation of m-learning initiatives. This framework also puts into perspective the significant social and relational skills required to implement m-learning initiatives in comparison to the small part technology expertise contributes to the holistic understanding of m-learning implementation.

As discussed in the literature review (Chapters 2 and 3), with the proliferation in mobile technology adoption and organisations increasingly recognising the benefits of m-learning to enhance organisational training and performance support; the insights and contributions provided by this study will improve the realisation of the benefits m-learning provides to both employees and organisations. Furthermore, because m-learning is an emerging field of study, insights from this research provide significant contributions to both CoP theory and the emerging m-learning body of knowledge, providing the foundations for further academic research to mature this important field of study.

9.6 Limitations of study and suggestions for future research

This research has extended m-learning research into an industry context. However, the research findings are based on three m-learning initiatives in different Australian companies. Therefore, the generalisability of the findings can be tested in future research by exploring other m-learning or IS initiatives similar in nature and to other bureaucratic organisational contexts. Such exploration will provide the opportunity to potentially enhance and adopt the theoretical model (Figure 9.2) for other purposes and contexts. Furthermore, this study examined three case studies from different industries based on three Australian companies. Future research may consider expanding the number of case studies, covering other industries, and conducting a wider range of interviews with different and more research participants. The practitioner team size was small in all three cases (i.e. between three and five practitioners). This may be a feature of m-learning initiatives; however, future studies could explore m-learning initiatives that have a bigger practitioner team and test whether the findings from this study apply to larger practitioner teams.
M-learning stakeholders interviewed included mainly sponsors, learners and executive managers. Not all stakeholders were interviewed in this study. Future research should consider interviewing a broader range of m-learning stakeholders not included here to gain a broader understanding. Thus, exploring the perspectives of a wider range of m-learning stakeholders may further test the generalisability of the findings from this study.

By conducting future research on a bigger sample size of more case studies and/or participants, variations and additional characteristics inherent in m-learning initiatives can be uncovered. Likewise, other bureaucratic contextual factors may be uncovered which could validate the generalisability of these research findings and/or extend those from this study.

The three case studies examined in this study included three different types of m-learning technologies. While the diversity of m-learning technologies examined provides interesting insights and may contribute to the generalisability of the findings; this study did not explore the extent to which the difference in m-learning technology has influenced the conceptualisation, behaviours and practices of practitioners and stakeholders. Therefore, future research could focus on case studies using the same m-learning technology platform to provide more consistency in technology influence on practitioners and stakeholders. Furthermore, unlike m-learning researchers, such as Auer et al. (2011) and Cornelius & Marston (2011), even though the technologies are different in all the case studies examined, none were used in a laboratory or simulation context. Future research on different m-learning technologies and implementation in different settings, such as a laboratory or simulation context, may provide different insights and contribute to the generalisability of the findings from this study.

When the learners were sales staff, they tended to be more positive and motivated to use m-learning because of the competition that was part of one of the cases investigated. Given this is only observed in one case; future research should select several m-learning cases that incorporate a competition element and contrast practitioners’ and stakeholders’ perspectives with m-learning cases that do not have a competition element. This will allow a deeper understanding of the level of influence a competition element may have on m-learning initiatives and those involved (i.e. practitioners and stakeholders).

The influence of organisational restructures and bureaucratic procedures and decision-making processes was observed only in one case. The extent their influence poses to m-learning initiatives should be explored in future research to further test the findings from this study. Similarly, only one case had experience from a previous failed m-learning implementation. Future research could therefore be conducted on other cases that have also experienced failed m-learning implementation, to understand how organisations with this experience differ from those without such experience.

The influence of organisational factors, such as power and politics, are not a key focus of CoP theory, as discussed in the literature review in Chapter 3, highlighted by various authors (Contu & Willmott 2000; Fox 2000; Marshall & Rollinson 2004; Khan et al. 2015). However, based on comments from practitioners there are examples where power and politics have influenced the way practitioners conceptualised their role, priorities and practices. For example, because the sponsor was the practitioners’ manager in the organisational hierarchy, with organisational power over practitioners, this influenced how the practitioners prioritised their workload and...
how they rushed implementation. This suggests that future research could focus more on the
effect power and politics have on practitioners, and m-learning development and
implementation.

The main data collection timeframe and interviews for this study were conducted from late
2016 to 2017. Therefore, this study does not provide a longitudinal study of m-learning CoPs or
explore their sustainability over time. Future research could study the sustainability and
benefits of m-learning over a longer period. Future longitudinal studies could also provide a
deeper understanding of the benefits associated with m-learning initiatives resembling CoPs,
as well as those benefits m-learning provides to organisations and employees over time. This
study has found that m-learning is perceived by some practitioners and stakeholders as
supplementing face-to-face training and potentially providing indirect benefits, such as staff
retention, resulting from interactions and knowledge sharing amongst employees. However,
the investigation of m-learning benefits is not the focus of this study per se. Future research
into factors influencing the realisation of m-learning benefits over time could add to a greater
understanding of m-learning, and would be valuable to organisations and employees.

Even though there seems to be no harm in using the term ‘project’ in the cases studied, because
this may help re-enforce the time-bound nature of m-learning work, to provide practitioners
and stakeholders with a sense of urgency and focus to work together. There seems to be
potentially a missed opportunity to understand the value and importance of CoPs in supporting
both the delivery of m-learning initiatives as well as knowledge sharing and learning of m-
learning training material in a bureaucratic context. This could be an area for further research –
to investigate the effectiveness of m-learning initiatives implemented using a strict and
structured project approach as compared to the informal and loosely structure approach used
in the cases examined in this study, in a bureaucratic context.

The benefits and evolution of m-learning initiatives into CoPs is not within the scope of this
study and is suggested for future research. The benefits of CoPs have been explored by some
authors in different contexts (Schenkel & Teigland 2008; Hemmasi & Csanda 2009; Scarso et al.
2009) but not in the context of m-learning initiatives resembling m-learning CoPs. Furthermore,
while some CoP literature does explore the evolution of CoPs, it tends to be in terms of learning
and knowledge management processes (Corso et al. 2009) and innovation (Swan et al. 2002).
Such literature does not explore evolution from an m-learning initiative to a m-learning CoP.

The scope of this study did not include an investigation into ethical considerations associated
with implementation of m-learning initiatives. For example, the erosion of employees’ personal
time, people’s concern over security related to the increasing amount of information and
images to be stored, and privacy issues related to the ease with which information can be
captured in a range of locations. Further research should be conducted to identify and address
such ethical issues, so that m-learning is implemented and used responsibly and appropriately,
and supports the realisation of benefits that m-learning can provide to employees and
organisations.
9.7 Concluding remarks

The aim of this research was to undertake practitioner and stakeholder focused research into the challenges of m-learning implementation. The exploratory nature of this study has provided many insights and contributions to m-learning, CoP theory and m-learning practice. In particular, this study demonstrates that m-learning initiatives are socially complex and practitioners must build strong interpersonal connections with stakeholders to navigate the constraints imposed by the organisational context.
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Appendix 1 – Case study interview guide

These questions are used as a guide only. Interviewees will be encouraged to discuss their experience and interpretations of Mobile Learning programs (or initiatives) rather than answer every question.

1. Introduction
1.1 Thank the interviewee for their time and their participation in the research
1.2 Get signed consent form
1.3 Provide an overview of the interview and the main areas of interest
1.4 Mention that the interview will be 20 to 40 minutes in duration and will be recorded
1.5 Remind the interviewee that:
   • they can withdraw from the interview at any time and their work will NOT be affected by their decision to participate or not
   • results from this research will be shared with your organisation and may appear in publications such as journal articles and conference papers; however, it will not be possible to identify individual participants.
1.6 Ask if the interviewee has any questions before the interview starts

2. Background and History of Mobile Learning Program Implementation
2.1 Please describe when the Mobile Learning Program was implemented?
2.2 How was the program implemented?
2.3 What’s your experience during the implementation?
2.4 What’s your role in the implementation?
2.5 What were the views or feelings that people expressed?

3. Motivation for Implementing the Mobile Learning Program
3.1 Please describe why was the Mobile Learning Program implemented?
3.2 What reasons were given?
3.3 What changes were expected?

4. Views and Reflections on the Mobile Learning Program Implementation, learners, sponsors, practitioners
4.1 What worked well during the implementation?
4.2 Were there problems in the implementation? If yes, please describe them
4.3 What’s your experience after the implementation?
4.4 What interactions have you had with the learners/sponsors/practitioners?

5. Conclusion
5.1 Thank the interviewee for their time
5.2 Ask if
   • they have any other comments they’d like to make
   • there are others we should also interview

Additional Topics for Practitioners

1. Work in the Mobile Learning Program Implementation team
Discuss nature of work, individual, team, allocation of work
2. **Work Practices of Practitioners**
   Discuss interactions between
   - practitioners and learners
   - practitioners and sponsors
   - practitioners and other relevant groups/people

3. **Implementation approach, methods and tools**
   Discuss
   - implementation approach/methods
   - choice of tools
   - what approach, method, tools, etc worked well
   - problems with approach, methods, tools, etc
Appendix 2 – Case 1 Cluster Diagrams

Theme 1: Practitioners’ interpretation of m-learning
Theme 2: Practice work of practitioners

- Working as a team with the same role was helpful
- Collaborating as a team developed and maintained a sense of camaraderie
- Having existing working relationships
- Practitioners using project plan to track project tasks
- Practitioners sharing day-to-day and m-learning workload amongst themselves

- Using project plan as a tool for identifying stakeholders and gain early momentum
- Engaging Learners in a haphazard manner
- Practitioners reporting to sponsor
- Engaging with the sponsor, learners and staff for expertise
- Sponsor being a conduit between senior management and practitioners
- Sponsor providing priorities and guidance to practitioners
- Practitioners seeking expertise from Marketing, IT and NSW State Executive's personal assistant
Negotiating timelines

- Delaying m-learning project implementation
- Providing sponsors with regular m-learning project updates
- Rushing m-learning work
- Practitioners gaining feedback from sponsors to speed up implementation
- Not having time to devote to m-learning project
Theme 3: Sponsors’ perspective

- Being focused on cost and budget management
- Delegating to practitioners
- Taking management control
- Being focused on rapid implementation of e-learning
- Seeing podcast training as simple to implement
- Monitoring, prioritising, and intervening when practitioners were not perceived to be working on the right tasks

- Providing guidance to practitioners
- Prioritising profits
- Being focused on cost and revenue
- Focusing on saving cost and time
- Delivering e-learning in-house
- Having high staff turnover making training challenging
- Believing practitioners had the interest and skills to deliver e-learning
- Making a connection between the speed of implementation with having technology competency
- Using in-house staff because it is cost-effective
Theme 3: Learners' perspective

1. Seeing podcasts targeted at new and junior staff
2. Learners' training needs being supported
3. Seeing practitioners as understanding the learners' training needs of how to improve their careers
4. Podcasts providing easy access to information and training material
5. Learners being time-focused
6. Being proactive learners
7. Preferring face-to-face training
8. Seeing podcasts as positive for all staff
9. Seeing training as important
10. Wanting live and current information
11. Learners perceiving e-learning positively
12. Some learners perceiving no need to engage with practitioners
13. Learners having a positive view of the practitioners' work
14. Learners appreciating the efforts of the practitioners
Theme 3: Executive managers’ perspective

- Requiring senior managers ‘top brass’ to motivate staff
- Executive managers as stakeholders motivating learners
- Some staff are not utilising podcasts without senior managers promoting it
- Learners suggesting ‘more targeted approach required’

Theme 3: Stakeholders providing expertise to the practitioners

- Practitioners relying on Marketing department for expertise
- Stakeholders providing expertise to the practitioners
- Practitioners lacking role clarity and project management expertise
- Facing resistance from stakeholders
- Practitioner role not clearly defined
- Practitioners expressing despair
- Describing marketing as ‘most successful aspect’ of project
Case 2 Cluster Diagrams

Theme 1: Practitioners’ interpretation of m-learning
Theme 2: Practice work of practitioners

- Working in a highly informal and collaborative manner
- Making decisions to delay implementation timelines through discussions
- Working with minimal documentation and no project plan
- Describing the project as a positive experience
- Describing sponsor as ‘hands off’ and ‘at a distance’

- Engaging with the sponsor and learners
- Receiving positive feedback from learners using a story-telling approach to communicate
- Dedicating significant effort to gaining leadership team involvement
- Communicating m-learning benefits to learners
- Planning stakeholder engagement

- Seeing executive management as important to motivate staff
Theme 3: Sponsors’ perspective
Theme 3: Learners' perspective

- Allowing access and sharing of up-to-date information for better staff engagement
- Enhancing communication and information sharing
- Staff using email out of habit
- Not being clear about the type of content to share
- Being a collaboration tool helping to ‘break down borders’
- Some staff being afraid to post ‘dumb questions’ using the tool
- Not being seen as a social nature tool
- Seeing information as not relevant to their jobs
- Staff getting busy and forgetting to use the tool
- Staff using the tool as an ‘empowering’ staff in sharing knowledge and learnings
- Supporting continuous improvement and learning
- Contributing to the improvement of the tool
- Having different learner motivations for adopting re-learning
- Expressing disinterest in current training
- Completing only mandatory training required for their job role
- Supporting Yammer despite not using it
- Having different motivations for adopting re-learning
- Preferring face-to-face training
- Suggesting an internal ‘campaign’ to improve staff adoption of Yammer
- Not getting any benefit from using Yammer
- Questioning the effectiveness of Yammer
- Having a KPI to use Yammer
Theme 3: Executive managers’ perspective

- Promoting Yammer on the company’s intranet site
- Executive managers as stakeholders in motivating learners
- See senior management using Yammer as a motivator for staff to use Yammer
- Engaging ‘opinion leaders’ in a trial to influence staff to use Yammer
- Wanting to see senior manager supporting Yammer
Case 3 Cluster Diagrams

Theme 1: Practitioners’ interpretation of m-learning

[Diagram]

Delivering new technology to appeal to 'early adopters'

Supporting the learning needs of sales staff

Providing sales staff with tools while they're 'on the road'

Having problems embedding knowledge from face-to-face training

Providing sales staff with 'just in time' learning - short and 'easy to digest'

Putting extra pressure on staff that may be struggling in their jobs

Seeing competition as a 'catch 22'

Seeing m-learning competition helping seam participation

Seeing competition as both a motivator and de-motivator

Adopting tools to motivate learners

Perceiving competition as a motivator of staff using m-learning

Seeing competition as a de-motivator from late adoption

Seeing good participation rate, 'many staff using m-learning'

Having high performers learn to 'have a go' at m-learning

Having other areas of the business wanting to use m-learning
Theme 2: Practice work of practitioners

- Experiencing good team collaboration
- Working as a team in an informal manner
- Working together ‘organically’
- Having no formal regular meetings initially
- Project complexity understood differently by different practitioners
- Not having clear roles and responsibilities slowing project down
- Experiencing ‘chaotic’ moments during the project
- Having a loose project plan

- Dedicating Practitioner 5 to manage compliance to company’s processes
- Practitioner 5 reflecting on project as a learning experience to understand company processes
- Company restructuring freeing Practitioner 2 of other work
- Company’s bureaucracy contributing to the implementation being difficult
- Implementation timelines being delayed significantly by company restructures
- Experiencing frustration and stress from implementation delays
- Having to manage a lengthy procurement process

Working in a bureaucratic context
Stakeholder feedback validating practitioners' work as 'worthwhile'

Engaging stakeholders

Seeing stakeholders getting 'excited' from reviewing project documentation

Having difficulty explaining to stakeholders what the practitioners were trying to do

Engaging sponsor as-required and at 'crucial times'

Liaising with the sponsor

Seeing sponsor as 'strategic' and delegating the project 'heavily' to practitioners

Perceiving the sponsor as a 'really good relationship manager with lots of contacts into the business'
Theme 3: Sponsors’ perspective

- Being impatient; emphasising ‘crash it in’
- Not seeing planning as important
- Sponsor being dogmatic and not deterred by practitioner resistance
- Sponsor describing himself as ‘terrible leader’
- Focusing on rapid implementation
- Taking management control and being directive
- Seeing ‘speed’ of implementation as important
- Seeing m-learning as ‘reinforcing’ learning
- Seeing Return on Investment (ROI) as important
- Seeing m-learning as inexpensive to the learnings from a $1M training program
- Sponsor’s new organisational role includes assurance of ROI in training spend
Securing two practitioners not using the HR Department

Experiencing difficulty in securing staff for the project

Sponsor directly engaging senior executives and securing resources

Seeing leaders in the company as responsible for driving staff training

Describing that the company has a ‘good culture’ with leaders part of training staff

Sponsor phoning senior executives to ‘sell the m-learning idea to them’
Theme 3: Learners' perspective

- Experiencing a sense of 'community'
- Seeing m-learning as beneficial to staff
- Seeing the company's traditional training as 'draconian'
- Staff having fun and learning
- Wanting m-learning to be implemented more widely
- Suggesting m-learning should apply to more training in the company
- Experiencing m-learning as fun and a positive experience
- Describing positive experience with m-learning

- Valuing m-learning as convenient and efficient
- Accessing m-learning using mobile devices was easy and preferred
- Enjoying the challenge of a competition with time constraints
- Appreciating the brevity of m-learning content
- Valuing convenience and accessibility to training material
Theme 3: Executive managers’ perspective

- Managers taking responsibility for acknowledging staff on the m-learning core board
- Staff valuing recognition from executive managers
- Executive managers as stakeholders motivating learners
- Staff influenced by managers that have used m-learning in the past
Appendix 3 – Research participation consent forms

Informed Consent for Interviews

Project Title
Re-Framing Mobile Learning in the Workplace using a Community of Practice Perspective

Investigators
Michelle Lac, Faculty of Science, Engineering & Technologies, Swinburne University of Technology
Professor Rosemary Stockdale, Faculty of Business and Law, Swinburne University of Technology
Dr. Mark Dale, Faculty of Business and Law, Swinburne University of Technology
Professor Rajesh Vara, Software and Technology Innovation, Deakin University
Dr. Andrew Cain, Faculty of Science, Engineering & Technologies, Swinburne University of Technology

Project Information Statement
Mobile learning (m-learning) is an important area of Information Systems (IS) research and practice. Interviews with senior technology managers, CIOs and CEOs found in the m-learning literature attest to the importance of m-learning as a means for organisations to build workplace productivity, communication and morale. The proposed research examines the problems associated with the implementation of m-learning programs in a range of Australian industries. The importance of this research is that it will assist m-learning practitioners and researchers to appreciate that organisational m-learning programs are much more complex and interrelated than is suggested by the dominant technical approach adopted by many authors. Past approaches to the problems of m-learning tend to focus more on technical solutions such as technologies, frameworks, tools, and processes and place less emphasis on the importance of understanding the organisational and social context of m-learning. The approach that will be taken in this research is a re-conceptualisation of m-learning implementation using Communities of Practice (CoP) theory to provide new and useful insights into the problems associated with m-learning implementation and suggest actions to intervene in those problems.

This part of the research consists of a 20 to 40 minute interview where you will be asked about your views on m-learning. The meeting will be digitally recorded and later transcribed for analysis. Results from this research may appear in publications such as journal articles and conference papers; however, it will not be possible to identify individual participants.

If you wish to participate in this research please read, complete, and sign the attached consent form to grant your informed consent. You are free to withdraw your consent and participation in the research at any stage without question or explanation. If you choose to withdraw, your response will not be included in the research analysis. Your work performance will not be affected by your decision to participate, or not to participate, in this research, nor will it be affected by what is discussed in the focus group or interview.

Any questions regarding this project can be directed to the Senior Investigator:
Professor Rosemary Stockdale, Faculty of Business and Law, Swinburne University of Technology on (03) 9214 4529.
Privacy Protection

The results of this research may be published in education journals, conferences, and theses, however no individual will be identifiable. Where quotes are used they will be associated with code numbers that will be known only to the researchers involved in the project.

The recorded interview will be transcribed into electronic format and stored under code numbers. All original, identifiable data will be destroyed at the conclusion of the research.

Your participation in this research is completely voluntary. Your initial agreement to participate does not stop you from discontinuing participation and you are free to withdraw from this research at any time.

If you have concerns or questions about this research, please contact Professor Rosemary Stockdale on (03) 9214 4029.

Complaints Procedure

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the National Statement on Ethical Conduct in Human Research. If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (RHE),
Swinburne University of Technology, P.O Box 218, HAWTHORN VIC 3122.
Phone (03) 9214 5218 or +61 3 9214 5218 or resethics@swin.edu.au

Agreement

1. I consent to participate in the project entitled "Exploring Mobile Learning Experiences in the Workplace using a Community of Practice Perspective". I have been provided a copy of the project information statement and this consent form and any questions I have asked have been answered to my satisfaction.

2. I understand that the purpose of this research is to hold individual interviews to find out my views on m-learning.

3. I understand my participation in this research is voluntary and that if I wish to withdraw from this research or to leave, I may do so at any time, and I do not need to give any reasons or explanations for doing so. If I do withdraw from this research, I understand that this will have no effect on my relationship with Swinburne University or any other organisation or agency and my response will not be included in the research analysis.

4. I agree to participate in the interview and for the interview to be recorded by electronic device.

5. I acknowledge that:
   • the project is for the purpose of research and not for profit;
   • any personal information about me which is gathered in the course of and as the result of my participating in this project will be (i) collected and retained for the purpose of this project and (ii) accessed and analysed by the researcher(s) for the purpose of conducting this project;

By signing this document, I agree to participate in this project.

Name of Participant: .................................................................

Signature & Date: .................................................................

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Organisation Consent

Project Title
Re-Framing Mobile Learning in the Workplace using a Community of Practice Perspective

Investigators
Michelle Lac, Faculty of Science, Engineering & Technologies, Swinburne University of Technology
Professor Rosemary Stockdale, Faculty of Business and Law, Swinburne University of Technology
Dr. Mark Dale, Faculty of Business and Law, Swinburne University of Technology
Professor Rajesh Vasa, Software and Technology Innovation, Deakin University
Dr. Andrew Cain, Faculty of Science, Engineering & Technologies, Swinburne University of Technology

1. On behalf of (Name of Organisation).................................................................

I hereby authorise the following official(s)/employee(s)/agent(s) to participate in the project in a representative capacity, the project's particulars having been satisfactorily explained to me:
Name of representative(s), team(s), group(s) or division(s): ...........................................

2. In relation to this project, please circle your response to the following: Yes No
- I agree that my employees can be interviewed by the researcher
  Yes No
- I agree that the interview can be recorded by electronic device
  Yes No
- I would like to check any transcription / citation in respect of my organisation's involvement for accuracy
  Yes No

3. Please circle your response to the following:

- I give my permission for the organisation to be named in any publication arising from the research.
  Yes No
- I further give my permission for the named researcher(s) to access/analyse organisational records as requested.
  Yes No
- In permitting access to or use of organisational records, the following / attached condition(s) apply:
  ..............................................................................................................................

4. I acknowledge that the data collected for the Swinburne project will be used for research purposes and not for direct profit; research purposes may include publishable / peer reviewed outcomes.

Name of Person of Authority and Position: ............................................................... Signature & Date: .................................................................

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Appendix 4 – Ethics Approval

From: Astrid Nordmann  
Sent: Tuesday, April 10, 2018 7:33 AM  
To: Rosemary Stockdale <rstockdale@swin.edu.au>  
Cc: RES Ethics <resethics@swin.edu.au>; Michelle Lac <mlac@swin.edu.au>  
Subject: RE: SHR Project 2015/312 - Ethics extension/modification (2) [CORRECTED]

To: Dr Rosemary Stockdale/Ms Michelle Lac

Dear Rosemary and Michelle

SHR Project 2015/312  A framework for measuring m-learning success  
Ms Michelle Lac, Dr Rajesh Vasa (Deakin University); Dr Mark Dale  
Approved Duration: 08-03-2016 to 07-10-2017 [adjusted]; extended to 30/03/2018; extended to 31/08/2018 [ethics approval lapsed in the period 31/3-08/04/2018]  
Modified: July 2016, April 2017, April 2018

I refer to your request for a simple extension of ethics clearance to complete the approved human research activity as per the report form received at Swinburne Research on 09 April 2018.

There being no change to the approved protocol as submitted to date, I am authorised to issue the clearance for the extension to 31 August 2018 (noting that ethics approval lapsed in the period 31/3/-08/04/2018). The standard ethics clearance conditions previously communicated and reprinted below still apply.

Please contact the Research Ethics Office if you have any queries about on-going ethics clearance, citing the SUHREC project number. Copies of clearance emails should be retained as part of project record-keeping.

As before, best wishes for the project.

Yours sincerely,  
Astrid Nordmann
Appendix 5 – Contrasting research findings with m-learning literature to date

This diagram contrasts the findings from this study (by grouping the theoretical categories and bureaucratic contextual factors) and comparing these to the focus and findings of existing m-learning literature. Where the theoretical category or bureaucratic contextual factors cover the same topic as existing m-learning literature, the white bubbles overlap with the shaded bubbles. The minimal overlap of the shaded (existing m-learning literature) and non-shaded (research findings) bubbles illustrate that this study has revealed findings not yet explored by other m-learning authors.
## Appendix 6 – Evidence of m-learning CoP practices grouped by implications of a bureaucratic context

<table>
<thead>
<tr>
<th>Implications of a bureaucratic context</th>
<th>Evidence of mutual engagement, joint enterprise and shared repertoire observed in m-learning CoPs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mutual Engagement (ME)</td>
<td>Joint Enterprise (JE)</td>
</tr>
<tr>
<td>Working as a team in an informal manner</td>
<td>Practitioners and stakeholders:</td>
<td>• making decisions collectively, negotiating common ground and timelines</td>
</tr>
<tr>
<td></td>
<td>• sharing a common understanding of m-learning objectives and priorities</td>
<td>• sharing information and knowledge</td>
</tr>
<tr>
<td></td>
<td>• collaborating and sharing practitioner and organisational tasks</td>
<td></td>
</tr>
<tr>
<td>Practitioners meeting sponsors’ requirements</td>
<td>Practitioners having:</td>
<td>• a strong sense of purpose commitment and accountability</td>
</tr>
<tr>
<td></td>
<td>• responsibilities continue after the m-learning initiative was completed</td>
<td>• visibly accountable, participating and using m-learning</td>
</tr>
<tr>
<td>M-learning work being time-bound</td>
<td>Sponsor:</td>
<td>• acting at critical times, such as securing funding</td>
</tr>
<tr>
<td></td>
<td>• visibly supporting, participating and using m-learning motivating learners</td>
<td>• visibly accountable, participating and using m-learning</td>
</tr>
<tr>
<td></td>
<td>Senior managers:</td>
<td>• visibly supporting, participating and using m-learning motivating learners</td>
</tr>
<tr>
<td></td>
<td>Practitioners and stakeholders establish working relationships contributing to the achievement of m-learning objectives</td>
<td>Practitioners using presentations and meetings to communicate m-learning benefits to learners and senior managers</td>
</tr>
</tbody>
</table>
Supporting the learning needs of learners

Competition supported social interactions between stakeholders and practitioners and stakeholders

Sponsors' requirements reflected in the m-learning objectives, language and behaviour of the practitioners and stakeholders

Regular rhythm and artefacts used such as: learners voluntarily helping each other, meeting regularly to discuss training content, practitioners and sponsor developing and delivering presentation slides and using weekly emails to engage learners and using National leader board, reports generated by the m-learning application and informal meetings to improve scores

Learners valuing social interactions

Learners:

- voluntarily and regularly support each other in using m-learning
- seeing value and relevance of m-learning to their jobs