INNOVATION CAPABILITY: CONTRASTING A SERVICE INDUSTRY WITH THE MANUFACTURING SECTOR

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ABSTRACT

Innovation Capability (IC) describes the ability of a firm to support the development of new products, services, processes, and systems. The few published studies of IC have tended to focus on the manufacturing sector and on product innovation. This exploratory research is the first stage of a larger study to investigate IC in the services sector with the Australian hotel sector as the case study. In-depth interviews were carried out with 51 hotel owner-managers across Australia, and this research finds that the capabilities that influence innovation in a service industry are radically different to those that are common to the manufacturing sector.

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Keywords: Innovation; capability; service, entrepreneurship, hotel

INTRODUCTION

The underlying aim of this paper is to contribute toward the development of an innovation capability scale for the service sector. The Australian Hotel Industry is used as a basis toward achieving this. Innovation in the manufacturing sector is well reported and documented, and many factors have been highlighted that influence a firm’s innovation capability. However, innovation capability within the service sector is far less reported and remains an area that is under-examined. The research reported here examines assumptions made about the homogeneity of innovation capability across different types of industry sectors and finds that the capabilities that influence innovation in a service industry are radically different to those that are common to the manufacturing sector.

The importance of innovation to economies and to individual organizations has been addressed in the literature as far back as Schumpeter (1934). Writers such as Huber (1984) proposed that in the post-
industrial age with increasingly complex and turbulent environments, organisations will need to rely to an increasing degree on innovation and experimentation for their survival and development. In this regard, more recent research has established a positive link between innovation and firm performance (Covin & Slevin 1989; Zahra & Covin 1995; Dess, Lumpkin & Covin 1997).

Innovation is the mechanism by which organisations develop value through new products, processes, and systems that are needed to respond to changing markets, technologies, and modes of competition (Utterback 1994; Dougherty & Hardy 1996). Innovation is important to firms because innovation and competitiveness are linked (Alvarez & Barney 2001). By itself, one-off innovation is not sufficient for competitiveness. Firms need to be able to innovate on a continuing basis (Kiernan 1996; Slater 1997). In addition, firms compete not just on new products but on their capacity to develop new products (Prahalad & Hamel 1990). Firms are therefore presented with the challenge to build their capacity to support innovation on a continuing basis and, in this way, develop competitive advantage.

For this reason, there has been increasing interest in identifying and understanding the attributes of firms that enable them to support continuous innovation (Damanpour 1991; Slater 1997). This has led to the development of “innovation capability” (IC) as a construct that describes the capacity of a firm to develop new products, processes, and systems (Prahalad & Hamel 1990). This capacity assists firms to compete in dynamic competitive markets. Research has shown that firms with IC have a sustainable competitive advantage and use it to achieve higher levels of performance (Alvarez & Barney 2001). Thus, it is important to understand IC so as to be able to assist firms to improve their ability to innovate and hence their abilities to survive and grow.

The relatively few published IC studies that have been undertaken have been in the manufacturing sector (Guan & Ma 2003; Yam et al. 2004), and these focused on product innovation. An Australian study (Terziovski & Samson 2007) found a positive relationship between a measure of innovation capability and firm innovation performance across 12 industry sectors.

However, the nature of activities in manufacturing and service organisations differ significantly. Differences include in the change ability of immediate consumption of service outputs and the interaction between service providers and customers. These differences would “unequally affect both the determinants of innovation and the strength of their influence” (Damanpour 1991, p. 560). This supports the focus of this exploratory study on IC in the services sector. The services sector is represented by many sub-sectors. These include wholesale trade; retail trade; accommodation and food services; information, media and telecommunications; financial and insurance services; rental, hiring and real estate services; professional, scientific and technical services; administrative and support services; public administration and safety; education and training; health care and social assistance; and arts and recreation services. (Australian Bureau of Statistics’ web site).

As a first step, this research focuses on developing a service measure of IC using one particular service industry sector - the Australian hotel sector. This sector was chosen because the hotel sector is an important part of the Australian economy. There are, for example, 1,290 licensed hotels Australia-wide with five or more rooms as at December 2005. These employed 78,200 staff and generated annual revenues of AUD$3.05 billion from 14.1 million guest arrivals (ABS 2005b).

Globally, the tourism and hospitality sector, of which the hotel sector is a part, has become the world’s largest industry at about 6% of the world’s gross national product and growing rapidly (Lerner & Haber 2001).

The hotel sector was also chosen as the basis for this exploratory research because it is subject to rapid and continuing change and is highly competitive. In a recent Australian Bureau of Statistics (ABS) study of innovation in Australian industry, the ABS concluded that businesses in the accommodation, cafés, and restaurants sectors (hotels overlap this sector) had the lowest rate of innovation of all of the sectors that were included in the study (ABS 2005a).

There is little published research on innovation in services in general and in the hotel sector in particular (Ottenbacher & Gnoth 2005). The studies in this sector have been largely carried out in the United States and Europe and have typically investigated large hotel chains and large individual hotels to identify general principles of innovation management for new products or services (Jones 1996; Ottenbacher & Gnoth 2005). Other studies have been carried out into best practice in hotels with the aim to “foster innovation in current management thinking” (Dubé et al. 1999, p. 14). These hotel-related studies have focused on architecture, environmental management, food and beverage management, information technology, marketing, hotel operations, human resources, and service quality (Enz & Siguaw 1999; Siguaw & Enz 1999d, c, a, b, e; Dubé et al. 2000; Enz & Siguaw 2000b, a). Although these studies included hotels ranging from budget to economy to deluxe, the best
practice “champions” that were selected from 115 in-depth cases came largely from well-known and well-resourced chains in the United States. This makes the findings from these studies less applicable to smaller groups and to individual hotels with fewer resources.

There are no published studies of service-related IC and the IC-firm performance relationship that focus specifically on the services and hotel sectors although there are conceptual papers addressing the “innovation orientation” of hotels (Siguaw, Simpson & Enz 2006; Simpson, Siguaw & Enz 2006). These studies are discussed below. This research, therefore, contributes to building an improved understanding of innovation in the hotel sector specifically. More broadly, it provides the basis for future research to apply the IC measures developed in this research to other services-based industry sectors. Thus, the information collected from this research will be used to better understand the extent to which validated IC manufacturing measures can be adapted to the services sector.

The paper proceeds as follows. First, we discuss the IC construct and the underlying theoretical foundations of the research. Second, we provide an overview of the research method and results. Finally, we discuss the results achieved in terms of how adaptable IC manufacturing measures are to the services sector.

THE INNOVATION CAPABILITY CONSTRUCT

Innovation activity in the firm involves the interaction between three key aspects of the firm’s operations. These include the resources of the firm including knowledge, processes and products, the firm’s external linkages with societal and market changes, and the creative input of individuals in the firm (Trott 2005).

IC describes the attributes that a firm needs in order to support this innovation activity. These attributes give it the ability to quickly and successfully adopt new processes and methods, and develop and introduce new and improved products to compete more effectively in a rapidly changing environment. Because innovation itself is a complex activity, IC has many dimensions or components and draws on a wide range of assets, resources and abilities.

Hurley and Hult (1998, p. 44) define the capacity to innovate as “the ability of the organization to adopt or implement new ideas, processes or products successfully”. They also propose that “firms that have a greater capacity to innovate are able to develop a competitive advantage and achieve higher levels of performance” (p. 44). Lawson and Samson (2001, p. 384) define IC as “the ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders”. This is the definition that is used in this research.

Innovation capability has similarities with “innovation orientation”. Innovation orientation has been described “as a set of understandings about innovation built into the fabric of a firm’s knowledge structure that influences organizational activities, but not as a specific set of normative behaviours” (Siguaw, Simpson & Enz 2006, p. 560). In particular, innovation orientation is proposed to develop a set of “innovation competencies” including resource allocation, technology, employee competency, market competency, and operations competency. It is also proposed that there should be a positive relationship between innovation orientation and innovation performance as well as overall business performance. There are, however, no published empirical studies to develop and test this construct and to compare it with innovation capability. For this reason, this research focuses on innovation capability.

THEORETICAL FOUNDATIONS

Several different theoretical approaches have been used to create measures to operationalise the IC construct. These include technical product innovation, open systems theories of the firm, organisation innovation theories, the resource based view of the firm, and dynamic capabilities theories. The specific theories are reviewed below.

Technical Product Innovation and IC

Cormican and O’Sullivan (2004) drew on models of technical product innovation, such as the New Product Development (NPD) model developed by Cooper and others (Cooper 2001), to develop a “product innovation management scorecard” based on a study of reasons for failure of new product projects. The authors proposed a scorecard comprising 50 measures grouped under the headings of strategy and leadership, culture and climate, planning and selection, structure and performance, and communication and collaboration. This obtains managers’ perceptions of their firm’s performance on each measure to produce a map of their firm’s product innovation management performance for
diagnostic, benchmarking, and improvement purposes. This scale was alpha tested with eight technology-based organisations.

Chiesa, Coughlan et al (1996) proposed a “technological innovation audit” that was based on a similar model of technical innovation process (or NPD process) that was, in turn, influenced by the European Union Quality Award framework. This approach resulted in a scorecard that included two to four dimensions under each of the following headings: product innovation, product development, process innovation, technology acquisition, leadership, resourcing, systems and tools, and increased competitiveness. Managers then used this scorecard to assess their firm’s performance according to the four levels of performance for each individual measure.

Both of these approaches were designed to help managers to identify where shortcomings occurred and what actions needed to be taken to improve firm performance. The form of these scorecard measures, however, does not lend this approach for use in benchmarking or for quantitative analysis.

Open Systems Theory of the Firm and IC

Other authors have drawn on the open systems theory of the firm to propose a definition of innovation capability that integrates the human aspects of the organisation with its technology dimensions (Ettlie 1983; Judge, Fryxell & Dooley 1997). This approach treats organisations as open systems that receive inputs and produce outputs through the interactions of its members that are influenced by the environment and the organisational culture (Katz & Kahn 1978; Lawrence & Lorsch 1986). In particular, changes in one component of the organisational system can lead to changes in others (Katz & Kahn 1978).

The open systems theory of the organisation has been used by researchers to examine the behaviour and the operation of teams in the work environment as a way of understanding the factors driving innovation in companies. For example, West (2002) developed and tested an inputs-processes-outputs model of group innovation that identified the importance of group (or team) capabilities and process in determining the level of innovation output. Eckermann, Nagalingam et al (2002) developed a measure of “five cultural capabilities that an organisation must embrace in fostering innovation” (Eckermann, Nagalingam & Lin 2002, p. 727). The five capability scale sets in Eckermann et al’s (2002) measure includes visionary, knowledge, entrepreneurial, social, and synergistic capabilities. This measure was validated using a sample of 84 manufacturing companies in South Australia. The research identified a positive relationship between innovation capability as defined by these five factors and the innovation performance of these firms using a combination of four innovation performance measures (Eckermann, Lin & Nagalingam 2003). This approach, however, did not take into account technical, resourcing, and other areas of capability that have been shown to be important for supporting firm innovation. In addition, the details of their measures have not been published.

Organisation Innovation Theories and IC

Tuominen and Hyvönen (2004) developed a measure of innovation capability based on organisation innovation theories. In doing this, they draw upon the firm strategy, structure, and competitive position literature as well as on empirical evidence. The authors proposed that firms pursue two separate dimensions of technological innovation (relating to product and technical processes that create value for customers) and of managerial innovation (relating to strategy development and organisational management that create value for the firm). The authors identified a positive relationship between this form of innovation capability and competitive superiority (measured in terms of financial performance and value-adding performance). The 10 individual measures developed in this study, however, are actually firm innovative behaviour measures rather than firm capability measures. This instrument is therefore of no use in investigating the “innovation capability” of firms which is the focus of this research.

Resource Based Theory of the Firm and IC

The resource based theory of the firm proposes that a firm’s resources are important in supporting its competitive advantage and in implementing corporate and marketing strategy. To be successful, a firm needs to have resources that are valuable, are rare, are difficult for other companies to imitate, and are also difficult to substitute (Barney 1991). A capability can be defined as an integration of the firm’s different resources that it manages to take advantage of external business opportunities (Peteraf 1993), and it is the superior resources and capabilities that will allow the firm to be competitive in its environment.
Using the resource based theory, IC can be described as a special asset of a firm that gives it the ability to quickly and successfully adopt new processes and methods and develop and introduce new and improved products to compete more effectively in a rapidly changing environment (Lawson & Samson 2001). Because innovation itself is a complex activity, IC has many dimensions or components and draws on a wide range of assets, resources, and abilities (Sen & Egelhoff 2000).

Adler and Shenbar (1990) defined IC in terms of a range of resources or capacities. These include the ability to develop new products that meet market needs, the capacity to apply the appropriate processes to produce these new products, the ability to adapt product and process technologies to meet future needs, and the ability to respond to unexpected opportunities arising from technology change and competitor activities. Christensen (1995) proposed four distinct and generic categories of assets for technological innovation. These included scientific research assets, process innovative assets, product innovative application assets, and aesthetic design assets. He also proposed that successful innovation needs the combination of more than one of these assets that are spread over different parts of the firm.

Capaldo et al (2003) proposed a method for evaluating firm IC using four resource sets. These were entrepreneurial resources, human resources, resources arising from external linkages, and economic resources. These sets were allocated into two groups that are needed to support the ability of the firm to enhance and innovate in its markets in the short and long term and to support the ability of the firm to carry out technological innovation. This approach was illustrated by three case studies using qualitative assessment of scores of the businesses on the dimensions used. The value of this approach appears to be limited as the measures consider only a restricted range of firm resources.

Guan and Ma (2003) used the resource based view of the firm to develop a detailed operational representation of IC in terms of a set of seven “innovation drivers”. These were learning, research and development, resource management, manufacturing, marketing, organisation structure and systems, and strategy and leadership (Guan & Ma 2003; Yam et al. 2004). In this framework, learning capability is the capacity to identify, absorb, and use existing and new knowledge for competitive success. Research and development capability measures the ability of the firm to adopt new technologies and systems. Manufacturing capability describes the ability of the firm to apply its R&D results into products that meet market needs as well as technical and production constraints. Marketing capability refers to the ability to identify current and future customer needs and to promote and sell the firm’s products in a competitive environment. Resource management capability is the firm’s ability to organise and manage its technology, human, and financial resources. Organisation structure and systems capability refers to the ability to develop, structure, and manage all activities to meet organisational objectives and increase the speed of the company’s innovation processes. Strategy and leadership capability is the ability to form, adapt, and lead the right strategies for commercial success in a competitive environment.

Guan and Ma’s (2003) measure was validated using a sample of 213 Chinese industrial (manufacturing) firms. A positive relationship was found between the IC dimensions and export performance except for the dimension relating to manufacturing capability. In addition, the study identified the different impact of two groupings of innovation capability. These were a set of core and complementary innovation assets using a framework proposed by Teece (1986). This approach with its published measures has been useful for replication and benchmarking studies in the manufacturing sector.

**Dynamic Capabilities Approach and IC**

The dynamic capabilities approach builds on the resource based theory of the firm. It can be defined as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece, Pisano & Shuen 1997, p. 516). Competitive advantage is described as a function of the process that is particular to the firm by which its assets can be deployed and redeployed in changing market circumstances. Lawson and Samson (2001) draw on this framework to propose a model of IC that is made up of a number of processes within the firm. These are grouped into seven major dimensions that include: vision and strategy, harnessing the competence base, leveraging information and organisational intelligence, possessing a market and customer orientation, creativity and idea management, organisational structure and systems, culture and climate, and the management of technology. A study using these dimensions was carried out with 220 businesses across 12 industry sectors and found a positive relationship between the measure of innovation capability and firm innovation performance (Terziovski & Samson 2007).
Tang (1998a) developed an “integrative” model of innovation in organisations with six key constructs of information and communication, behaviour and integration, knowledge and skills, project raising and doing, guidance and support, and external environment. These constructs were operationalised in the form of an innovation capability inventory of 46 items and this was validated using a sample of 871 professional engineers. This study resulted in nine measures. These were leadership, support mechanisms for innovation, task variety and autonomy, group attitude and behaviour towards innovation, integration between functional areas, project screening and selection, project management, staff knowledge and skills, and information gathering and communication. A positive relationship was found between this measure of innovation capability and respondents’ perceptions of their company’s innovation effectiveness (Tang 1998b). The measure developed and published by Tang (1998b) has been adapted and applied in a study of the relationship between firm innovation capability and the implementation of total quality management (Perdomo-Ortiz, Gonzalez-Benito & Galende 2005).

Romijn and Albaladejo (2002) developed a model comprising two major inputs into product innovation capability. The first set of inputs included internal sources encompassing the professional background of the founders or managers, the skills of the workforce, and a measure of internal R&D efforts to improve technology. The second set of inputs included external sources comprising measures of intensity of networking, proximity advantages relating to networking, and receipt of business support from government and industry bodies. The model was piloted with 33 electronics firms and a number of these factors were found to be related positively to measures of innovative performance. The measures used in the Romijn and Albaladejo (2002) study have not been published.

Theoretical Underpinnings of This Research: Resource Based Theory

Different theoretical bases have been used to develop definitions of innovation capability. None of these theories are mutually exclusive. However, the resource based theory approach is preferred for this research as it provides a robust and systematic approach for analysing the firm as a set of resources and capabilities. This means that research findings can be used to develop diagnostic tools as a practical outcome of this research. These tools can be used at the individual firm level to identify resource gaps that can be presented in terms that managers can readily understand and act on to improve their firm’s innovation capability. A further reason for preferring the resource based theory/dynamic capabilities approach is that this was used by Guan and Ma (2003) and by Terziovski and Samson (2007). These are the only studies identified that have provided details of their innovation capability measures and that have published their relationship with business performance measures. These are the measures that provide the starting point for this study. An underlying assumption is that IC, as defined as a manufacturing sector construct, has a similar meaning and application in the services sector generally and in the hotel sector specifically.

RESEARCH METHOD

This research is part of a larger project into IC and the IC-firm performance relationship in service businesses. This part of the study involves developing an IC measure for service firms that will be used in the larger project. The study was carried out using in-depth interviews with owner/managers of representative hotel firms.

The research adopted an industry case study approach. An interview frame was developed based upon the factors that have been reported in the academic literature that contribute toward our understanding of innovation capability in the manufacturing sector. The underlying hypothesis that was investigated in Step 1 of this research was…

H1: Firms within the service sector will exhibit the same innovation capability attributes of firms from the manufacturing sector.

Step 1: Sample

In-depth interviews were held with 16 owners and managers of hotels in South Australia. These included participants involved with individual hotels or small hotel groups. The larger study focuses on “general hotels” and excludes the large chains, such as those owned by Coles and Woolworths, and the deluxe chains, such as the Hilton and Hyatt. For this reason, these organisations were not included in this exploratory study. Participants were from the Adelaide CBD, metropolitan area as well as regional South Australia. Table 1 provides an overview of participant demographics.
To facilitate the research, contact was made with the National Director of the Australian Hotels Association (AHA). He then provided an introduction to the South Australian AHA Branch. After meeting with the South Australian AHA President and Chair, the South Australian AHA Branch office provided the research team with participant introductions. The sample theoretical frame was proposed by the research team. It included hotels that were known to be innovative in the way that the owners/managers operated their businesses and those less so. Some hotels were located in the metropolitan area and some were in the country. Some operated in competitive environments (with other hotels close by) and some were relatively isolated. Some hotels were sole operations and some hotels had owners who were involved in more than one hotel.

**Step 1: Measures**

The basis for developing a hotel services IC instrument was that developed and validated by Guan & Ma (2003). The original questionnaire was in Chinese and this was translated into English. The instrument contains 70 items addressing seven dimensions of IC: learning, research and development, resource management, manufacturing, marketing, organisation structure and systems, and strategy and leadership. The items are of the form “we systematically monitor technology development trends” and use single-ended Likert scales where “1 = Strongly Disagree” through to “7 = Strongly Agree”. On the original Guan & Ma (2003) scale, all Cronbach alpha values for the dimensions exceeded 0.93.

The first step in this study was to explore the applicability of the Guan & Ma (2003) IC dimensions to the hotel services sector. As a starting point, participants were asked to describe innovation in their own businesses and the manner in which these innovations were initiated, developed, and evaluated. Participants were then asked to describe impediments to, or constraints on, their innovation activities and to identify how their businesses could better support innovation activities. The duration of each interview was approximately one hour. Notes were taken by the researcher during the interview and the interview was audio recorded. Written transcripts of the interviews were made subsequently. The interviews were transcribed by a professional agency. The researcher then checked the transcriptions against the audio recordings.

Transcripts were analysed using nVivo software with statements being coded into categories (or nodes) corresponding to the dimensions developed by Guan & Ma (2003). Although all of these innovation capability dimensions could be identified in the comments made by the majority of hotel participants, it was evident that there were significant numbers of statements that could not easily be fitted into the Guan & Ma (2003) classification.

The hypothesis that firms within the service sector will exhibit the same innovation capability attributes of firms from the manufacturing sector was therefore not supported. Therefore, this deductive approach (i.e., moving from the theory to the data) failed to capture the innovation capability dimensions applicable to service industry firms.

The research then moved to adopt an inductive method by analysing data to form a new framework. The second step in the research borrowed from the "grounded theory" method described by Glaser & Strauss (1967) and Charmaz (2006).

**Step 2: Sample**

Interview data was again collected. This time it was collected from a different set of respondents – there were 36. These were hotel owner/managers in the other Australian cities (CBD and suburban). These interviews were organised with the support of the AHA branches in each State. This group represented a sample of hotels that were recognized to be innovative by the AHA. Thus, the interviews were obtained from innovation-oriented owners/managers who would provide a "rich" data source for analysis purposes.

**Step 2: Measures**

The interviews were open and exploratory and were less prescribed and directed than those in Step 1 but the same general protocol was followed as well as the same procedure for transcribing and checking interviews. All interviews were carried out at hotel premises where possible. This allowed the researcher to view the premises and identify aspects of the hotel that appeared to be different or worth exploring.
Transcripts were analysed using nVivo software. Statements were coded on a line by line basis to develop an array of new nodes in line with the "grounded theory" method. Nodes were developed at the same time as the statements were coded into those nodes. This approach resulted in the creation of 38 different nodes.

These nodes were then clustered and categorised into dimensions. Descriptors of each node were prepared by the researcher carrying out the coding. Examples of each code were provided to two different researchers with experience in the field. These latter two researchers used this information to develop nine separate dimensions that included the 38 nodes. This classification was then checked by the original researcher on the basis of the detailed examination of the extensive content of each node. This was then adjusted after discussion within the research team.

RESULTS

The hypothesis H1 that IC as defined as a manufacturing sector construct has a similar meaning in the services sector in general and the hotel sector specifically was not supported.

The "grounded theory" approach described in Step 2 resulted in the following dimensions of innovation capability (detailed in Table 2):

- alliances (with organisations such as external agencies, other hotels and suppliers)
- customer intelligence (including customer feedback and customer knowledge)
- environmental awareness (including awareness of constant change, and awareness of competition, regulations, business trends, market position, technology changes, foresight)
- entrepreneur characteristics (including the manager’s personal knowledge, knowledge about the business, leadership and lifestyle)
- experimentation (including proactiveness)
- human resources and human capital (including having good operations, good staff, job design, staff incentives and motivation, team culture, team knowledge, formal education, formal skills training, in-house training, and organisation structure)
- operations (including management systems and quality control)
- resource awareness (including financial investment and resource management), and
- strategy and planning (including planning, vision, strategic view of the business and portfolio management).

It can be seen in Table 2 that these dimensions include the broad descriptors used by Guan and Ma (2003), and Terziovski and Sansom (2007).

DISCUSSION

The first step of this study indicates that the dimensions of innovation capability developed for the manufacturing sector did not appear relevant for the hotels services sector. This is to be expected on account of the special nature of service sector businesses and because hotels are unusual businesses. Even small hotels include several different types of revenue streams or business units such as accommodation, functions, meals, bar, entertainment, take away alcohol, and gaming (in some hotels). This means that innovation can occur in each of these several areas as well as in the operating systems and methods of the whole organisation. This finding applies across hotels that differ in terms of the size of their group, their location, and the research team’s perception of their level of innovation, and the number and range of innovations identified by participants.

The second step of this research has yielded a set of IC dimensions associated with hotels and possibly those related to service-based firms generally. Certainly, the IC dimensions developed in this research will be more closely aligned to services-sector businesses generally than the IC dimensions developed for manufacturing sectors.

The implication of this research is that the factors that influence innovation capability within firms cannot be considered constant across different industry sectors. The results of this research will undergo further testing and will assist the hotel industry in Australia specifically to address training and development needs for firms seeking to develop innovative capabilities. The research will also

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provide a method template for investigating other industry sectors. This will, in turn, expand the knowledge base about the different dynamics that surround the concept of innovation in other service industry sectors. It is expected that the service industry innovation questionnaire will become a tool to be subjected to further development for increased applicability in other service industry sectors.

The next step in this research is to develop the individual question items that underpin the specific IC dimensions. This will be carried out by using follow-up in-depth interviews with hotel owner/managers. Their purpose will be to check that the modified items are clear and understandable and are interpreted by participants in a way that is consistent with their conceptualisation. The following stage of the larger research project involves administering the modified measures to another group of participants in the hotel sector as a quantitative study. Factor analyses will be conducted, items removed, and new items inserted where appropriate to produce a reliable and valid IC scale for the hotel services sector.

**Research Contributions**

The research makes a contribution at two levels. At a scholarly level, the information collected from this research will be used to better understand the extent to which IC is similar to and different across manufacturing and services sectors, and how it can be applied effectively to smaller service enterprises such as the “typical” hotel. In this regard, the research contributes toward the development of a more holistic IC theory. From a practical perspective, the results provide the basis for profiling individual hotels over time and against other hotels of a similar size in terms of IC. This will help individual operators to evaluate their positioning against the industry and consider how to take corrective action where appropriate. In addition, the research results will provide the basis for developing a hands-on hotel training program to improve the ability of hotel operators to innovate, and to improve their hotel performance.

**SUMMARY**

This research adopted a two-fold approach to capture the underlying IC dimensions associated with the hotel services sector. It first examined IC measures developed for the manufacturing sector and empirically assessed whether these were relevant to the hotel services sector. The mapping to the hotel services sector was not ideal. This resulted in a modified empirical grounded theory approach. This approach was fruitful in identify the underlying IC dimensions associated with the hotel services sector.

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### Table 1: Participant Demographics

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### Table 2: Innovation Capability Dimensions

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