ABSTRACT
The Self-Management and Recovery Technology (SMART) project is a Victorian government-funded research program being conducted at the National eTherapy Centre in conjunction with five mental health organisations in Victoria. This is a research program to develop and trial therapeutic resources for use across clinical and community managed mental health sectors. It involves developing an online portal with materials promoting self-management skills and personal recovery, which can be used by mental health workers in their interactions with consumers, and directly accessed by consumers themselves. These materials will make particular use of videos featuring peers talking about their own recovery, together with information and online exercises, organised into modules on recovery-related topics. The system will also facilitate connection between different users of the system through commenting functions and a consumer-moderated forum. The development phase of the project has involved focus group consultations with mental health service consumers and workers on the potential use of technology within mental health services and collaborative development and pilot of materials. We describe this research program and report on the development phase.

BACKGROUND
The Internet is increasingly being utilised as a means of providing information, facilitating communication and delivering therapeutic interventions in mental health. Australia has been an international leader in this area, with a number of Australian websites providing online mental health interventions (see Kyrios & Thomas, 2014, for a review). In addition to websites that provide mental health information, websites have been developed which include self-guided therapy programs (e.g. mentalhealthonline.org.au, mindspot.org.au, moodgym.anu.edu.au, mycompass.org.au, ontrack.org.au, shadetreatment.com, thiswayup.org.au), therapist support via online chat (e.g. eheadspace.org.au, lifeline.org.au) and peer support forums (e.g. blueboard.anu.edu.au).

Most of these online developments have been designed to provide mental health support that operates in parallel to traditional face-to-face mental health services, focused mainly on delivery to people with mild-to-moderate anxiety and depression. This has been valuable in increasing access to mental health interventions in a large number of people, particularly those who would not otherwise access face-to-face services. Hence, for people with mild-to-moderate mental health problems, the Internet allows wholly-online mental health services to be provided as part of an overall system of mental health provision (Christensen et al., 2014).

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However, to date there has been comparatively little examination of how the Internet might be used in conjunction with specialist mental health services for people with serious mental illness. In this context, there are different needs, one being a strong need for integration of resources with face-to-face modes of provision, and another being a need to develop materials tailored towards problems such as persisting psychosis. Online interventions are beginning to be applied, both for use as part of specialist mental health service delivery (e.g. Deegan, 2010), and targeting issues specific to psychosis (e.g. Gottlieb et al., 2013), but these are at an early stage.

THE SMART RESEARCH PROGRAM
Swinburne University of Technology runs the National eTherapy Centre, which provides one of the Commonwealth Government-supported online mental health services, Mental Health Online (mentalhealthonline.org.au; previously Anxiety Online; Klein et al., 2009). In partnership with a number of specialist mental health services in Victoria, La Trobe University and Deakin Health Economics, Swinburne was successful in securing research funding from the Victorian Department of Health in order to conduct a research program addressing the broad question of how Internet-based resources could be developed for use within mental health services. Funded from mid-2013 to mid-2017, the first phase of this program has involved a development phase including consultation with consumers, mental health workers and families to inform development of a set of online resources. In the following phases of the program, these will then be systematically researched in order to determine their utility, and derive broader learnings about the potential integration of online resources into mental health service provision, and for people with serious mental illness. Our service partners include Mental Illness Fellowship of Victoria, Alfred Health, Mind Australia, North Western Mental Health and St Vincent’s Hospital Melbourne.

In considering how to develop online resources for specialist mental health services we had a number of considerations. First, we wanted to develop resources that would integrate with the practice of mental health staff. Rather than being focused primarily on self-help, and reliant upon independent access by consumers, we wanted to have resources that would be integrated with service provision: designed to be used by workers together with consumers, as well as being accessible to consumers directly themselves. This would have advantages in being able to facilitate access to resources in people who did not have access to the Internet, or who would have motivational difficulties with self-guided materials; as well as providing evidence based resources to enhance skills of the mental health workforce. To do this, we saw resources that could be presented on tablet computers (e.g. iPads) being particularly suited to collaborative working between mental health consumers and workers. However, in order to ensure wide accessibility, we also wanted resources to be accessible by consumers directly via a range of devices, including home computers and mobile phones.

Second, we wanted to develop resources which would be useful across clinical (hospital-run) and community-managed (non-government organisation-run) mental health sectors. Third, we did not merely want to produce an online translation of an existing face-to-face intervention or a self-help workbook. Rather, we wanted to develop resources that really capitalised on the potential that the Internet provides for new ways of doing things. One of these was the capacity to use multimedia, which is more engaging than text, and is ideally suited to presenting people talking about their lived experience, and featuring experts in their field (both through training and through lived experience) presenting concepts. Another is the potential for users to interact with other people who are using the resources. This has become a common feature of websites, with the posting of comments being popular on news websites and on video streaming sites such as YouTube, and with widespread community use of social networking sites such as Facebook which have social interaction as their primary function.
Fourth, we wanted to focus on using online tools to empower consumers, with a focus on promoting mental health self-management, and incorporating materials to promote processes associated with personal recovery. This influenced the research program name: Self-Management and Recovery Technology.

**Online technology as a vehicle for personal recovery**

As the research program progressed, the concept of personal recovery became increasingly central to resources developed as part of the SMART research program. The Recovery Movement has emphasised a shift away from services focusing on symptom amelioration as their primary aim, to promote personal recovery: living a satisfying meaningful life irrespective of periods of mental illness. The ideas associated with personal recovery have originated in advocacy for better services more sensitive to consumers’ experiences. However, the understanding of the processes involved in personal recovery have become increasingly refined through synthesis of literatures based upon consumers’ accounts of processes which contributed to their own recovery (Andresen, Oades & Caputi, 2003; Leamy et al., 2011).

One of the leading current models of personal recovery is known as the CHIME Model (Leamy et al., 2011). This refers to developing social (C)onnectionedness, (H)ope and optimism, transformation of (I)dentity beyond that of a passive and stigmatised psychiatric patient, finding new (M)eaning in life, and (E)mpowerment and responsibility in self-managing mental health. This model offers a framework that informs potential components of intervention targeting recovery, and consequently became valuable in influencing both the content and the design of our research program. Initial evidence of the feasibility of intervention targeting these dimensions comes from the MI Recovery program developed by Mental Illness Fellowship of Victoria: a peer-facilitated course designed to promote recovery, which in a baseline controlled trial we have found leads to sustained increases in empowerment, reductions in self-stigma, and increased social connectedness (Thomas et al, in preparation). This has been important in informing the content.

A further influence on the research program was our interest in the potential role of peer contact in promoting recovery. Consumers often talk about the importance of having had contact with people with similar lived experience as part of their own recovery, and peer leadership, advocacy and support roles have become important within services. A recent synthesis of the international literature recently reported that contact with peers may be particularly important in promoting hope and role-modelling recovery (Walker & Bryant, 2013). Peer modelling provides a particular function that multimedia could have, by using videos showing peers discussing their own recovery. Consequently, the potential for video modelling to promote social learning has become a core component of the SMART research program. To do this we planned peer videos organised around particular recovery themes, derived from the CHIME model.

In considering the communication potential offered by the Internet, we also saw possibilities to promote connectedness via interaction between consumers using the system, which we planned to build in with facilities to share comments about content, and via a broader discussion forum. We saw this as a potential means of compensating for the social isolation consumers can experience by promoting a community of users, but also considered that, through discussion of topics pertinent to recovery, that this may be helpful in promoting group identity, and further role modelling hope and empowerment.
OUR EXPERIENCES AND PROGRESS IN THE DEVELOPMENT PHASE

In practice, the development phase of the SMART research program has consisted of a number of parallel streams of work, which we consider in turn.

1. Consultation with end-users
Potential end-users for the SMART website included consumers, mental health workers and families. We established reference groups for each to inform the translation of our initial ideas into practice. In addition we conducted a series of focus groups with mental health workers within each of our partner services (Williams et al., in preparation), and conducted a survey of current Internet access and usage in specialist mental health service users. Overall, people felt it was needed to consider how technology could be integrated within services, and saw potential in this, as well as highlighting the value of establishing a trustworthy source for mental health information, given the potential to be overwhelmed by information on the Internet. Our consultations suggested particular interest in use of videos featuring lived experience, which was valued by consumers as a means of hearing from peers with shared experiences, and which workers also saw as valuable as a means of prompting discussion around personal recovery. One of the most pertinent design issues was demand for flexible access to resources rather than a sequence of modules to work through in a set order.

However, alongside this, there were concerns expressed about the extent of current Internet access among consumers of mental health services. To establish data on this we conducted a survey of Internet access and use in 100 participants attending for appointments at the continuing care teams of one of our partner mental health services. This established that, contrary to the concerns we were hearing, the majority of participants had access to the Internet either at home or via their mobile phone, and most browsed the Web at least weekly (Thomas et al., in preparation). This confirmed that there exists a sufficient number of people using services for people with serious mental illness who are online, making the development of online resources an important area for development.

2. Refining content framework and writing content
The content framework we developed was derived from a number of sources. These included the literature on recovery, broader psychological well-being literature, cognitive and behavioural models which have been applied to serious mental illness, our experience with programs such as MI Recovery in conjunction with continual feedback from our reference groups. In addition to an introductory module providing an overview of recovery, our resultant framework comprised the following domains:

(a) Managing stress, including awareness of one’s stressors and the effects of stress, and methods of coping
(b) Health, including awareness of the interaction between physical and mental health, and considering how to make changes to improve one’s health
(c) Me, including consideration of the impact of mental illness on identity, and how people have evolved their experience of who they are
(d) Empowerment, including discussion of the potential to feel disempowered in interactions with mental health services and consideration of how to get the most out of working with services
(e) Relationships, considering the spectrum of people in one’s life, how mental health problems can impact on interactions with others, and how to feel and become more connected with others
(f) Life, including consideration of personal values and meaning and making changes to experience a more satisfying life
In line with feedback from our end-user consultation we designed these to be completed in any order. For each module we developed a combination of written content, video recorded expert material and exercises, divided into subtopics, but designed them primarily to be based upon a series of peer videos discussing the themes. These were planned as a series of videos on a range of themes which each featured a number of peers discussing the theme in question. By capturing a number of people discussing a topic, this enabled us to promote a higher level message that there is diversity in how people approach recovery, whilst inspiring the user with ideas about how to consider their own recovery.

3. Filming and editing video material
To produce this video material we engaged 11 people with lived experience of psychosis willing to be filmed to produce the video segments, who we decided to refer to as peer educators in keeping with their role on the project. In identifying peer educators we attempted to capture diversity in gender, age, and ethnic background. Identifying peer educators through our service networks, and with the assistance of the Victorian Mental Illness Awareness Council, most peer educators we identified were accustomed to discussing their lived experience publicly and comfortable with being filmed, as well as having recordings of their discussion of their mental health uploaded onto the SMART website. We constructed a series of interview questions to guide discussion towards topics within our content framework, and filmed material with each person on a range of topics, planning to select the best fit of material to topic during an editing process. The content development team worked with professional editors to identify segments from a selection of 4-6 of the peer educators to form a 2-3 minute video for each theme. This process turned out to be successful, with a large quantity of really useful peer material being identified to produce nearly 30 of videos, suitable for nearly all of the themes we identified.

4. Developing specifications for software development
The fourth area of parallel work was to develop software. We engaged an external software developer with prior experience in developing e health programs, and with assistance from Swinburne University’s Information Technology Services Project Management Office developed specifications for the software system. In designing the system we considered design from a number of perspectives. As well as producing a functioning system, we wanted to design it to be user friendly, particularly for the scenario of quick use within the context of a consultation with a mental health worker, and for ease of navigation by persons who may have difficulties with concentration and memory. We incorporated design considerations highlighted by Rotondi et al. (2013) regarding navigation to have a shallow hierarchy organising the different pages so users are less likely to lose their way, with an easily accessible menu for the main features on the website. We also drew on the capacity for tablet computers to enable user-friendly scrolling to minimise the need to present information across multiple pages which need to be clicked through sequentially. Additionally, in designing the project we also paid particular attention to how the user may feel in response to using the system, and attempted to keep the concept of empowerment central to design of the software itself.

DISCUSSION AND CONCLUSIONS
The SMART research program has provided an opportunity to explore ways in which online technology can integrate within specialist mental health service provision. During the development phase of this project, our initial ideas appears to have been embraced by consumers and mental health workers, and we have been able to develop a credible online resource with a number of innovative features that are particularly suited to promoting personal recovery. However it is only with use of this system in practice that we will really find out about how this is received by consumers, how it integrates within mental health services, and about whether it is useful in promoting recovery. Our software system will next
be trialled within our partner mental health services as part of a series of research projects that will seek feedback from consumers and workers, examine outcomes, and conduct an economic analysis of the benefits of using such a system. We hope that this will prove informative, not solely in evaluating the particular system that we have developed, but in informing how information technology can be integrated into mental health provision internationally.

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