UNDERSTANDING CONSUMER ADOPTION OF INTERNET BANKING: AN INTERPRETIVE STUDY IN THE AUSTRALIAN BANKING CONTEXT

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ABSTRACT

This paper reports key findings from an interpretive study of Australian banking consumer experiences with the adoption of internet banking. The paper provides an understanding of how and why specific factors affect the consumer decision whether or not to bank on the internet, in the Australian context. A theoretical framework is provided that conceptualizes and links consumer-oriented issues influencing adoption of internet banking. The paper also provides a set of recommendations for Australian banks. Specifically, the findings suggest that convenience is the main motivator for consumers to bank on the internet, while there is a range of other influential factors that may be modulated by banks. The findings also highlight increasing risk acceptance by consumers in regard to internet-based services and the growing importance of offering deep levels of consumer support for such services. Gender differences are also highlighted. Finally, the paper suggests that banks will be better able to manage consumer experiences with moving to internet banking if they understand that such experiences involve a process of adjustment and learning over time, and not merely the adoption of a new technology.

Keywords: Internet Banking, Electronic Commerce, Online Service Adoption

1. Introduction

Global internet access exceeded 1018 million people in December 2005 (IWS, 2006), offering new markets for internet-based services such as internet banking. Since the new millennium, internet banking has experienced explosive growth in many countries and has transformed traditional banking practice. By offering internet banking services, traditional financial institutions seek to lower operational costs, improve consumer banking services, retain consumers and expand share of customer. Recent evidence suggests that an internet-based consumer banking strategy may be effective, with reports of more profitable, loyal and committed consumers compared with traditional banking consumers (ABA, 2004; Fox, 2005). Thus, contemporary banks now regard the internet channel as equally important to traditional channels of branches, automated teller machines (ATM), telephone banking and call centres (Gartner 2003a). In the new banking environment, internet banking is increasingly managed as an operational activity and an important component of a multi-channel strategy (Black et al., 2002).

Despite the considerable diffusion of consumer internet banking in many countries to date, banks seek further market expansion. Currently, market growth trends are uncertain. For instance, consumer demand for internet banking services in North America stalled in 2005, possibly due to increased security concerns linked to rising identity fraud, phishing and online scams (ZDNet, 2005). By contrast, in Australia, internet banking growth continued apace despite similar consumer security fears, with a 26 per cent increase in the internet banking consumer population to 5.5 million users (approximately 34 per cent of the adult population) taking place over the twelve months to May 2005 (ACNielsen, 2005). In the US, Australia, and other countries, consumer markets of "prospective adopters" remain to be tapped (Lee et al., 2005).

Clearly, in order to grow consumer internet banking demand, banks must make key improvements that address consumer concerns. Thus, it would behoove financial institutions to gain an understanding of the key factors that influence consumer internet banking adoption. This paper investigates the critical elements that shape the consumer decision to adopt internet banking.

On searching the literature on internet banking, we found several motivations for a fresh investigation of the key factors influencing banking consumer adoption of the internet channel. First, existing studies are largely based on

surveys that, as positivist approaches, are unable to uncover the deeper issues identified by interpretivist methods, or the real issues that emerge from grounding the research in data (Strauss and Corbin, 1990). In one of the few interpretive studies of internet banking adoption in existence, experts suggest a need for further in depth investigations of not only the adoption issues but also the relationships between them (Black et al., 2002). Second, we are seeing the emergence of a society of individuals, individuated consumption and new markets seeking deep levels of consumer support (Zuboff and Maxmin, 2003) whose provision relies on new strategies of customer relationship management and knowledge management (Gebert et al., 2003), and attention to the customer experience (O'Loughlin et al., 2004). Such findings suggest the possibility that new influences on internet banking adoption may be at play. Third, as the study of Lee and colleagues (2005) highlighted, there is a need to investigate consumer decision-making in ínternet banking adoption across a wide range of demographics, rather than focusing only on the segment thought most likely to adopt – namely, the upper income demographic (Gartner, 2003b).

As the researchers resided in Australia at the time of study (2002 – 2003) and had access to the Australian banking community – and Australian internet maturity was solid (according to DCITA (2002), 57% of Australians had internet access in late 2002) – we elected to study the topic in the Australian banking context. After a period of strong electronic banking market development between 1997 and 2002, 54 per cent of Australian adults were using telephone banking and an estimated 25 per cent employed internet banking (Barker, 2002; ZDNet.com, 2002).

The remainder of the paper is set out in five sections. First, we synthesize earlier studies that suggest potential influences on consumer internet banking adoption. Second, we review the research methodology that was employed. Third, we provide empirical findings including a conceptual framework depicting consumer-perceived factors in the adoption of internet banking. Fourth, we discuss the main findings and draw implications for theory and practice. Fifth and finally, we suggest future research directions and offer some final remarks.

For the purposes of this paper, internet banking includes monitoring accounts, paying bills and transferring money between bank accounts, including third party accounts as well as those held at other banks.

2. Influences on Consumer Adoption of Internet Banking

Several converging reference domains and theories suggest numerous potential influences on consumer adoption of internet banking, including theories of consumer behaviour in mass media choice and use, gratification theories, innovation diffusion, technology acceptance, online consumer behaviour, online service adoption, service switching costs and the adoption of internet banking. We summarize in Table 1, and briefly review below, a representative sample of existing theories, approaches and influences that contribute to an understanding of the factors influencing consumer adoption of internet banking.

First, the initial personal choice of the internet as a medium for information consumption underpins consumer adoption of internet banking. As the internet is a mass medium, mass media theories may be helpful in explaining why people choose the internet for general message consumption. Indeed, Lin (1999) found significant empirical correlations between motives for accessing television and online media.

Of mass media theories, reception approaches (Cunningham and Finn, 1996) offer the most explanatory promise for understanding why people prefer certain media. According to standard 'uses and gratification' reception theory, media audiences are aware of their needs and meet them where possible by choosing appropriate media (Korgaonkar and Wolin, 1999; Ruggiero, 2000). Korgaonkar and Wolin identified the main individual needs for using the internet as social escapism, information, interactive control, and socialisation and economic motivations. Concerns about security, privacy and trust as disincentives were also highlighted. Interestingly, a recent survey in developed countries suggests that many more people than generally recognized believe they do not need the internet (The Guardian, 2003).

Possibly explaining such disinterest is the theory of 'prospective gratification' (LaRose et al., 2001). Applied to internet attendance, this theory highlights the role of anticipated positive or negative outcomes in motivating internet usage. LaRose and colleagues identified influences of habit strength, deficient self-regulation (when habit repeatedly leads to negative self-perception) and self-efficacy (the belief in one's capacity to organise and execute a particular course of action – Bandura, 1997) in an individual's decision to use the internet.

As internet banking is a relatively new concept in banking service delivery, another theory that may explain operative forces in consumer internet banking adoption is Rogers' theory of innovation diffusion (Rogers, 1995). Rogers describes five innovation attributes that help explain innovation adoption rates: relative advantage; compatibility (degree to which the service is consistent with the consumer's values, experiences and needs), complexity, trialability (degree to which the service can be experimented with prior to making the decision whether to adopt) and observability (degree to which the service can be observed being successfully used).

The technology acceptance model (TAM) developed by Davis (1989) may also be relevant to consumer choices in internet banking adoption. In this model, 'perceived usefulness' and 'perceived ease of use' are the two main

influences in user adoption of technologies. More recent studies employing a TAM-base theoretical lens have identified additional constructs that may be influential in internet service adoption. For example, a holistic framework incorporating complex social, psychological and economic elements was recently proposed (Konana and Balasubramanian, 2005).

Table 1: Potential influences on consumer adoption of internet banking

Approach	**Influences**	**Source**
Reception to mass media use: *Uses and gratification*s	- Social escapism, information seeking, interactive control, socialisation and economic motivations - Security, privacy and trust	Cunningham and Finn, 1996; Korgaonkar and Wolin, 1999; Lin, 1999; Ruggiero, 2000.
Reception to mass media use: *Prospective gratification*	- Habit strength, deficient self-regulation, self-efficacy	Bandura, 1997; LaRose et al. 2001; Limayem and Hurt, 2003.
Diffusion of innovation	- Relative advantage, compatibility, complexity, trialability, observability	Rogers, 1995.
Technology acceptance	- Perceived usefulness, perceived ease of use	Davis (1989)
Online consumer behaviour and online service adoption	- Channel knowledge, convenience, experience, perceived accessibility and perceived utility - Time savings - Site waiting time - Security, privacy and trust - Cost - Service quality	Li et al., 1999; Bellman et al., 1999; Dellaert and Kahn, 1999; Huang, 2002; Miyazaki and Fernandez, 2001; Nissenbaum, 2004; Pew, 2005; Gefen et al., 2003; Meuter et al., 2000.
Service switching costs	- Procedural, financial and relational	Burnham et al., 2003
Adoption of internet banking	- Convenience - Service quality - Perceived relative advantage, compatibility, trialability, complexity (after Rogers, 1995) - Demographics, consumer attitudes and beliefs - Security, privacy, trust, risk - Needs already satisfied, familiarity, habit - Lack of awareness - Consumer, product, organisation, channel characteristics - Convenience, adaptability, computer and technology confidence, knowledge - High levels of internet use at work - Gender	ACNielsen, 2005; Tan and Teo, 2000; Chung and Paynter, 2002; Gartner Group, 2003b; Pew, 2003; Kolodinsky et al., 2000; Sathye, 1999; Black et al., 2002; Ramsay and Smith, 1999; Thornton and White, 2001; Durkin (2004); Suh and Han, 2002; Zhu et al., 2002; Shergill and Li, 2005; Ilett, 2005; Perumal and Shanmugam, 2005; Siu and Mou, 2005; Wan et al., 2005; Waite and Harrison, 2004

Consumer behaviour in the adoption of internet banking may parallel aspects of online consumer behaviour in general. Li et al. (1999) found that knowledge of the internet channel, convenience, experience, perceived accessibility and utility are key influences on online consumer behaviour. Of these, convenience has increasingly been linked to online consumer choices. For example, in a recent survey, convenience was found the main reason why US consumers selected the internet channel for news services (Pew, 2005). Time savings appears an important aspect of the convenience of online services (Bellman et al., 1999; Dellaert and Kahn, 1999). Consumer concerns about internet security, privacy and trust have also been noted by many experts (e.g. Miyazaki and Fernandez, 2001; Gefen et al., 2003; Nissenbaum, 2004). Finally, transaction cost economics theory suggests people will choose the cheaper method to transact when choosing between electronic or traditional services (Huang, 2002). We note that all the above influences have been linked to consumer perceptions of online service quality and factor into the adoption of self-service technologies (Meuter et al., 2000).

A review of switching cost theory may prove valuable for understanding a change of service delivery channels. One study found that service switching costs strongly influence consumer retention (Burnham et al., 2003). The researchers identified three types of influential costs – procedural, financial and relational, further divided into categories of: economic risk, evaluation, learning, set-up, benefit, monetary loss, personal relationship loss, brand relationship loss, complexity, heterogeneity, breadth of service use, personal modification, alternative experience and switching experience.

Finally, turning to the literature dealing directly with influences on consumer adoption of internet banking services, we discovered a fragmented and inconclusive theoretical base:

- Demographics may be relevant. In the uptake of electronic banking – which includes ATMs, phone banking, internet banking and other electronic banking forms – Kolodinsky, Hogarth and Shue (2000) found that the likelihood of adoption rose with higher levels of financial assets and education, but that individual consumer attitudes and beliefs were stronger influences than demographics. In addition, recent studies confirm earlier reports of difficulties attracting the 65+ age group to internet banking (Ilett, 2005; Perumal and Shanmugam, 2005). Gender issues may also be relevant. Shergill and Li's (2005) study of internet banking consumers found that women regarded privacy protection and ethical standards more seriously than did men. Nevertheless, in some countries such as the UK, women now equal men in numbers using internet banking (Ilett, 2005) raising new questions about the nature of gender differences found in internet banking adoption.
- Convenience has been identified by a number of studies as an important adoption factor (ACNielsen, 2005; Pew, 2003; Ramsay and Smith, 1999; Thornton and White, 2001). A US survey found the main motivator for internet banking to be convenience in terms of 24/7 access and time savings (Pew, 2003). Interestingly, Chung and Paynter (2002) found that many people who did not use internet banking believed they did not need high levels of convenience. Accessibility, which may be related to convenience, has been found important (Ramsay and Smith, 1999). High levels of workplace internet use have also been associated with the uptake of internet banking (Durkin, 2004).
- The relevance of internet banking as an innovation has been found significant. Tan and Teo's (2000) survey of (mostly male) internet users employed Ajzen's (1985) theory of planned behaviour and Rogers' theory of innovation diffusion and identified the main influences as: perceptions of relative advantage, compatibility, trialability and risk. All but risk are known constructs in Rogers' theory of innovations diffusion. Also supporting the importance of trialability, Chung and Paynter (2002) found that lack of prior use of internet banking inhibited consumer adoption. Their survey further found that consumers who did not use the internet channel did not feel a need to do so, suggesting the importance of relative advantage. In a related finding, Sathye's (1999) study highlighted that many consumers were simply unaware of internet banking and its unique benefits.
- Adaptability, technical self-efficacy and knowledge of the internet banking application have been found influential, suggesting that individual characteristics affect the adoption decision (Thornton and White, 2001). The desire for control of service delivery was found important by Ramsay and Smith (1999) while habit may also play a role (Wan *et al*., 2005). The information provided on the banking web site may help provide needed knowledge and thus help to motivate adoption (Waite and Harrison, 2004).
- Security, privacy, trust and risk concerns may impact consumer internet banking choices. It was found that 80% of global phishing attacks in the first quarter of 2005 targeted the financial services sector (IDC, 2005). One survey by Chung and Paynter (2002) identified consumer fears regarding transaction security as an inhibitor to the adoption of internet banking. Security has also been identified as a key consumer concern in other internet banking adoption studies (e.g. Black *et al*., 2002; Siu and Mou, 2005). In Australia, Sathye's (1999) study highlighted consumer security fears while Ramsay and Smith (1999) found privacy to be a key consumer concern. Hain et al (2003) observed that non-internet banking consumers were more concerned about security and privacy issues than internet banking consumers. The security concern has also been recently associated more with female than male non-users (ACNielsen, 2005). Trust in the internet gained through long-term internet usage has been found an important factor in the adoption decision (Gartner, 2003b). In the context of consumer attitudes toward internet banking systems, trust may be related to consumer judgement on security and privacy issues (Wang *et al*., 2003). Suh and Han (2002) found trust an important factor in consumer adoption of internet banking using a Web-based survey, while Rexha et al (2003) obtained similar results in Singapore.
- Some researchers have organised internet banking adoption factors into categories (e.g. consumer, product, organisation and channel, Black *et al*., 2002).

Given the wide range of contributing theories and factors identified in the literature, we felt that existing theory on consumer adoption of internet banking was insufficiently mature for there to exist a solid foundational basis from which to explore our topic, especially given the changed parameters of a support economy (Zuboff and Maxmin, 2003) and an increased need for service-oriented knowledge management (Romano and Fjermestad, 2003). Therefore, we elected to draw on new data and use an interpretive approach based on grounded theory (Strauss and Corbin, 1990; Charmaz, 2003) while yet heeding the theories reviewed in this section.

3. Methodology

Following, we describe the methodology used. We first describe the selection of sample based on the grounded theory approach and second, examine the data collection and analysis.

3.1 Sample and Demographics

Grounded theorists select purposive samples using an approach termed 'theoretical sampling'. For theoretical sampling, participants who represent the major categories of people relevant to the research are selected. There is no compunction to sample multiple cases that do not '…extend or modify emerging theory' (Henwood and Pidgeon, 1993, p.25). We used a limited form of theoretical sampling that did not extend, due to time constraints, to returning to the field to fill conceptual gaps and holes (Charmaz, 2003, p. 265).

Table 2: Sample statistics for participant demographics

Characteristic	Descriptive statistics
Gender	10 males (31.2%) ; 22 females (68.8%).
Age	Overall range: 20 - 60+ years; majority < 50 years; largest group 40 – 49 years; 25% aged 50+.
Employment	27.6% full-time; 41.4% part-time; 17.2% unemployed; 13.8% retired.
Education	18.8% postgraduate qualifications; 43.8% undergraduate degree; 18.8% non-university tertiary education; 18.8% High school.
Income level	32.3% < $20,000 per annum; 19.4% $20,000 - $40,000; 25.8% $40,000 - $60,000; and 22.6% earned > $60,000.
Place of residence	31.25% rural; 68.75% city.
Computer ownership	90.6% had home computer with: 71% using it very frequently; 12.9% frequently; 16.2% rarely or never.
Home internet access	A third did not have internet access at home.
Internet banking	40.6% used at least one internet banking service, mostly from home (9.4% from work). Remaining 59.4% found internet banking not applicable to their circumstances.

Because we were interested in reasons why some groups, such as older people and those on lower incomes, are slow to adopt internet banking, our purposive sampling placed an emphasis on those groups. It included internet and non-internet as well as internet banking and non-internet banking users, a range of age and income groups, people from rural and city areas, and males and females. Because we were keen to represent lower income groups significantly, we included more women than men as the former often tend to be in lower income groups. Thirty-two (32) participants were recruited through community groups and libraries. Sample statistics are summarised in Table 2.

Although the sample was mainly very well educated, income levels were, on the whole, not very high. Participants with higher incomes were found more likely to bank on the internet (64% of those earning $40,000 or more, compared with 36% of those earning less than this amount), a tentative finding supporting claims that internet banking is most attractive to those in higher income brackets (Kolodinsky et al., 2000; Gartner, 2003b).

3.2 Data Collection and Analysis

To collect the data, the researchers used a combination of individual and focus group interviews (Williamson, 2002). Consumer intentions to use self-service technologies (such as internet banking) have been shown to be influenced by multiple hierarchies of consumer attitudes (Curran et al., 2003) which we were interested in understanding. The strength of individual views can be tested through exposure to alternative perspectives in a natural way, uncovering new insights through the tensions created by group discussion, and we therefore opted for focus group interviews (Morgan, 1997) as our main source of data. A series of five individual interviews provided the opportunity to construct complete profiles for each interviewee, given that in group interviews, multiple views and opinions can gravitate to a group view as a result of social influences. All interviews were semi-structured, allowing new issues to emerge for exploration.

The semi-structured interview schedule was developed by the team and piloted with four participants. Because of difficulties with the questions concerning security, privacy and trust, changes were made to the schedule, thus necessitating re-piloting of the schedule. Once we were happy with the questions, the study interviews proceeded. These interviews, of approximately one and a half hours' duration for focus groups and one hour for individual interviews, took place between July 2002 and February 2003. Interview questions covered demographics and banking method choices, as well as key motivators and inhibitors in the use of internet banking as suggested by literature (examples of non-demographic questions are listed in the Appendix). Deeper issues were explored as they emerged.

The research project was conducted in two phases. In the first phase, data were collected from interviews of Australian banking consumers and analyzed using only a grounded theory approach. The results were then interpreted using Rogers' theory of innovations and a theory of the digital divide in order to highlight related issues (this phase is reported in detail in Williamson et al, forthcoming). In the second phase, a comprehensive literature review was conducted, summarized in the previous section, and this provided extensive theoretical understandings that helped inform the second data analysis, as we now describe.

The data were analysed by qualitative content analysis (Mayring, 2000) where coded categories discovered in the interview transcripts were inductively developed according to grounded theory techniques but also drawing on the theoretical concepts summarised in Table 1, wherever they appeared in the data. The categories evolved to conclusive states over iterative readings and were grouped into themes at the end of analysis. The themes were then reviewed and key findings developed including findings regarding major influences and new trends and a theoretical framework conceptualising key factors in consumer internet banking adoption (figure 1).

4. Factors in Consumer Adoption of Internet Banking

In this section, we first describe the theoretical framework and second, provide findings relating to some important gender differences discovered. The theoretical framework was developed from the themes identified in the analysis results, as follows. We first observed that some themes were deemed more important than others by participants when making their banking service delivery channel choices and selected these as factors in the model. Second, we noted that several of these factors appeared interrelated. Third, a temporal sequence for some factors was suggested by the way participants linked these factors in the data. A summary of the framework follows, with more important factors as indicated by the analysis noted in the relevant descriptions.

At the top of figure 1, the framework shows that a bank must first attract banking consumer *attention* to the internet banking service before the consumer will consider internet banking. However, unless the consumer has a high level of internet *accessibility* at home or at work, she is unlikely to consider using internet banking. The consumer also assesses whether it is convenient to conduct her banking that way (*convenience*), how usable the application appears (*usability*), and her perceived competence at internet use and banking application use (*self-efficacy*). The four factors of accessibility, self-efficacy, convenience and usability are interrelated, as will be shown later. The consumer also considers whether the perceived relative advantages of internet banking compared with other banking forms outweigh perceived risks and costs. In addition, the availability of sufficient support and in depth knowledge from the bank and its employees contribute significantly to the adoption decision.

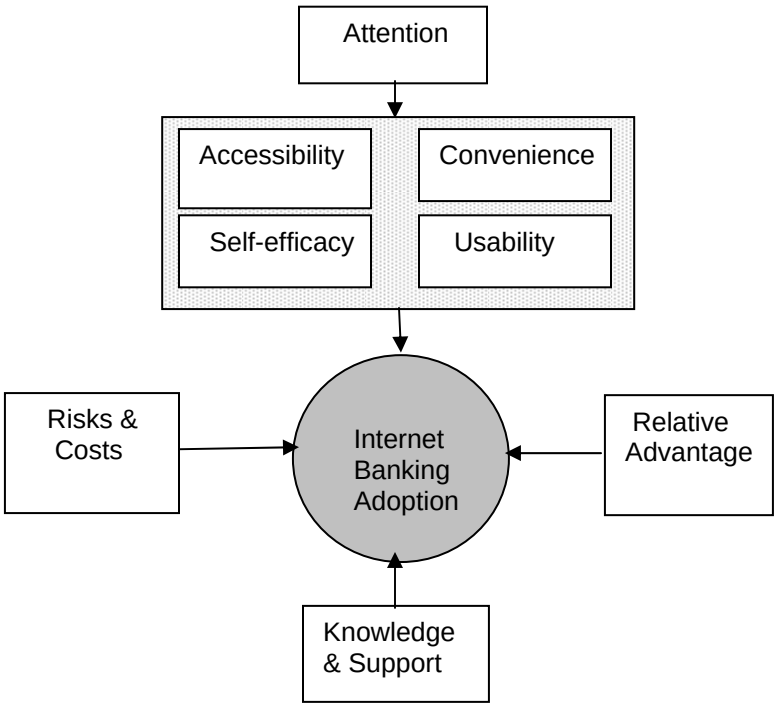

Figure 1. Key factors in consumer adoption of internet banking

Next, we discuss each component of the framework in detail from the top of the framework to the bottom, showing how the interview data supported the identification of each component. We employ the term *user* to denote participants who used internet banking and *non-user* to denote participants who did not use internet banking. Finally, the order in which components are presented is top-down rather than order of importance as several components are interrelated and temporally connected.

4.1 Attention

> *"I don't see them advertising the benefits of online banking, or giving instructions for it… You never hear about it on television or radio, about how to use it, or how easy it is to use online. You don't really hear about it."*

The above comment from a non-user is illustrative of non-user remarks highlighting the theme of attention. It appears that the marketing of internet banking has eluded the attention of many banking consumers who may be prospective adopters.

Many non-users mentioned not having known or thought about internet banking previously, nor having seen it advertised. Several non-users highlighted the usefulness of the research interviews as information sessions on internet banking. One non-user who owned a brochure business alluded to the ineffectiveness of internet banking marketing methods in which relevant materials were hidden inside standard bank mailings and subsequently discarded without having been read. Some participants remarked that they did not bank on the internet because they had not attempted it, believing it to be too complicated or of little interest – suggesting the need for banks to motivate interest, perhaps through an aggressive marketing campaign or incentives scheme. Importantly, our older participants (that is, those over 50 years) did not appear to have been reached by bank marketing. In summary, the results suggest that gaining consumer attention is influential in the adoption of internet banking and that this must be achieved before any other factors are considered. Once such attention is gained, internet accessibility, the convenience of the internet channel, usability and self-efficacy factors may be considered, as discussed next.

4.2 Accessibility

> *"Access to computers is not the issue, but access to the internet is. We've all got computers at home, but not access to the internet at home."*

This comment from a non-user is illustrative of non-user comments suggesting that missing or inadequate internet accessibility is a key influence on the adoption decision. Some participants with home internet connection utilised service provision with limited access hours, for cost-based reasons. They noted that this access time was used, however, for separate purposes such as finding children's homework references. An emerging issue is restrictive workplace internet practices and policy, with several non-users relaying stories of limited hours for internet use at work, and the need to perform work within this timeframe rather than utilising personal utility applications such as internet banking. Several users pointed to the high level of internet accessibility at their workplace when their dedicated, personal computer was connected to the internet all day, and was therefore readily available. They mentioned the importance of this level of workplace access in making their banking channel choice. Overall, we found perceptions of adequate internet accessibility to be fine-grained, with the need to have *dedicated and unchallenged access* held to be highly significant. As one user commented:

> *"I think, actually, [I use internet banking rather than other methods] because my computer is more accessible than the phone in the office. Because in the office, the phone is in the next cubicle, and I have to share it with someone. So I can access the internet more easily than the phone."*

In addition to accessibility, the study identified three related factors – *self-efficacy*, *convenience* and *usability*. It was found that when participants spoke about convenience, they would sometimes refer to the internet's accessibility, whether they felt confident about internet and internet banking use, and whether the application was user-friendly (usability). The four concepts were therefore grouped in a box in the framework in order to portray the close association.

4.3 Self-efficacy

> *"I find the internet quite familiar, and it was no big deal for me to do internet banking."*

This comment is representative of many others suggesting that a person's internet self-efficacy affects the decision whether or not to adopt internet banking. Users generally expressed confidence in their ability to use the internet - a confidence acquired from multiple positive experiences and acquired familiarity with the internet channel. Moreover, self-efficacy with the internet banking application was also found motivational for some users with one non-user nominating lack of familiarity with the application as the sole rationale for non-adoption. By contrast, several non-users commented on how their lack of confidence in internet usage had led to non-adoption. The main reasons cited for low internet self-efficacy were fear of new technology, lack of access, lack of experience, and the perception that the internet was unnecessary to people's lives.

4.4 Convenience

"I choose to use online banking because of the convenience".

Our findings reveal that convenience is the most important factor in making the decision to bank using the internet, supporting the recent findings in Australia of ACNielsen (2005). New findings in our study suggest, however, that convenience means much more to consumers than simply 24/7 access and 'saved time'. Some users saw internet banking convenience as an extension of overall internet convenience – that is, they had obtained internet access in the expectation that many services and other needs fulfilment would be more convenient through its use. Convenience was mostly described in terms of lifestyle, workplace use, housebound use, not having to travel, personal safety, not having to wait - and also, as found in the (Pew, 2003) study, 'saved time' and 24/7 access. As one user commented:

"I found banking online very good, because of not having to travel to a local branch, or anything like that. I can do it twenty-four hours a day"

Relative time savings dominated banking channel convenience perceptions. An interesting finding was that internet banking users believed internet banking to be faster than phone banking, while phone banking aficionados held the opposite view. Also of interest was that although slowness of site access and download was mentioned by several users, this issue did not unduly worry people once they had commenced internet banking. These findings suggest the influence of habit and channel self-efficacy in perceptions of convenience. Not surprisingly, the younger users in our sample commented more on the importance of speed in their choice of internet banking than did older users. Also highlighting the speed issue, several users and non-users referred to the unpleasantness of waiting in line at bank branches.

Phone bankers perceived phone banking as convenient. According to one such participant, an important convenience advantage of phone banking is its ubiquity compared with inadequate internet access in hotel rooms when travelling.

The study also emphasised the different nature of internet banking convenience for females compared with males, with two-thirds of the sample interviewed being female – in particular, the ability to bank at home, 24/7. We present these gender differences later in this section, following the description of framework.

4.5 Usability

"The banks and financial institutions want everyone to go online, but they haven't actually set up their system so that people can actually use it."

'Ease of use' – or usability – was frequently cited and found closely linked to individual perceptions of complexity, web site design and integratability/interoperability. Interestingly, some non-users had formed views of complexity and site design usability issues without having sighted internet banking applications. Complexity concerns centred on registering and setting up the system. Web site design – in respect of aesthetics and other recognised site usability issues – affected consumer choices. Other site design concerns related to information overload and complexity, and often resulted in confusion and a lack of understanding of the available options:

"I think online banking allows you to do fifty different things, and if you only need only a couple of different things, it can throw you."

Some users noted that web site design was improving. In several cases, complexity and design issues had discouraged participants from pursuing internet banking. Slowness of downloading was also mentioned.

Finally, integratability and interoperability issues were considered important. In an internet banking environment, such issues include the ability to plug-and-play key components of the internet banking service infrastructure when needed, and the ability for key components to operate together as a single networked system. Indeed, one user rated integratability as the most important usability issue. He described how his credit union account was part of a legacy system that was inaccessible from a modern internet banking system. Reports suggest that banks may now be taking action on such concerns. For example, a prominent bank's e-commerce Vice President commented recently: "At one time, the internet banking platform had its own database; we now operate a single integrated database for all retail channels. Whenever or wherever a transaction takes place, it hits the core processing system in real time. Consumers expect those things" (Marlin, 2005).

Four other factors had an important, though lesser effect on the adoption of internet banking, as revealed by the data. The factors are: risks, costs, relative advantage, and knowledge and support.

4.6 Risks

Participants considered internet-based risks in making banking channel choices. However, the findings also suggest that Australian banking consumers have adjusted to the presence of internet-based risks and are increasingly prepared to accept risks. To users in the sample, the convenience factor of banking methods was seen as more important than risk. Supporting this finding, a recent survey found that many Australian Internet users overlook risk in favour of the convenience of internet banking (ACNielsen, 2005). In our study, users took the view that the risks,

while present, are manageable through a strategy of personal belief in improved institutional and technological information security levels, a sense of hope and risk acceptance, and a carefully developed personal protection strategy including vigilance and taking some responsibility for information security. Rogers' (1995) finding that more innovative, risk accepting people are 'early adopters' may explain why users in our sample were less risk averse than non-users.

Our questions about information security ("security"), information privacy ("privacy") and trust met with considerable discussion and also some confusion over terminology. Participants were offered lay definitions for each term however their interpretations of the terms sometimes strayed outside these definitions as is seen in the following discussion.

4.6.1 Trust

> *"I don't really trust the bank, in a sense. That's why I have all the safeguards to ensure that I am ok myself, so that no big surprises come up, suddenly."*

This statement highlights how the trust issue was often perceived by participants. The question put to participants was: "If we define trust as the ability to trust the bank and its personnel to 'do the right thing by you', do you trust the bank when banking online?" Responses demonstrated significant distrust of banks, banking staff and institutions, while trust played a minor role in internet banking adoption for most participants compared with convenience and other issues.

Distrust was largely couched in terms of banks distributing personal information to marketing companies, sending marketing literature to the consumer, or – of most concern to participants – not backing the consumer if something went wrong. However, participants had accepted such outcomes as a normal aspect of dealing with banks. Distrust of technology was also revealed by various comments made about the security and privacy of internet technologies, mostly gleaned from personal experiences, third hand stories and media reports. Some participants indicated that they *did* trust the bank to do the right thing by them and in handling their information.

4.6.2 Security

> *"When I do think about it, I realise that what I've been doing is waiting until I feel confident that any of my information or details would be secure."*

The question asked of participants was: "If we define security as relating to the transfer of data across the internet, do you think data corruption (due to viruses, noise, hacking, system crash etc.) is likely when you use online banking?" Thus this definition included both fraudulent and inadvertent issues and also issues of unreliability (eg, system crash). Although security issues were noted as a concern, particularly in regard to hacking of credit card details, the findings suggested that security matters less for internet banking adoption than other factors, particularly convenience.

The reliability of internet connections and internet banking applications was a concern. Participants cited incidents such as computers not working, attempting to use internet banking only to find pages that did not load, and logging on only to read a message stating that there was a problem and advising the user to try again later. Many users had formed opinions based on little evidence. For example, a non-user cited a friend who had relayed how easy it was to hack into a person's credit card details. Some people mentioned the influential role of media reports in spreading security concerns about internet banking. Confidentiality and privacy issues were often confused, with concerns expressed that data would be disclosed to others, but with a lack of differentiation between personal and other confidential information. While confidentiality was not part of the lay definition given them for security, participants viewed the confidentiality issue as a security concern in accordance with published definitions of information security that include protection of information confidentiality (as well as integrity and availability) (GAO, 2005).

Users had generally built up a certain risk tolerance, founded in several key beliefs. Interestingly, users who had a technical background and understood security technology had higher levels of confidence in internet security than others. Some users mentioned their faith in banks having strong security measures, such as virus checkers and recovery from system failure. Nevertheless, many users mentioned taking their own steps to check loss of data integrity by regularly checking balances and transactions, maintaining low amounts in online accounts, and printing out receipts and other evidence.

4.6.3 Privacy

> *"I am aware of the privacy issue – how, for example, my email address is given to other companies and so on. But overall, the convenience factor outweighs all of that."*

We asked participants the following question: "If we define privacy as the protection of personal information so it is not disclosed to or used by others, do you feel that your privacy is at risk through using online banking?" Participants were generally aware of the privacy issues, including whether their personal information would be used by the banks or third parties to market new services to them. For a few non-users, privacy had been an important

factor in the choice not to use internet banking. For example, one non-user had received poor advice from the bank, resulting in her account details ending up in non-bank hands. This had influenced her preparedness to take up internet banking.

4.7 Costs

"One of the reasons I have avoided this is being charged again for using what I consider to be a more sophisticated service - and because I don't need that sophistication, I try and avoid using it."

Consumers cited various types of costs which had inhibited their use of internet banking. Burnham et al. (2003) identified procedural, financial and relational costs considered by consumers when switching between various types of service offerings and such costs were cited by participants.

4.7.1 Procedural

"I think once you get onto it, it's really simple, and I think the getting onto it is the biggest stumbling block for most people."

Set-up and learning procedures were major hurdles for many non-users, while still not as significant to adoption as convenience issues. Inertia was cited with comments such as, "We've got the internet at home, but I don't do banking. It's partly the slackness of not getting around to working out how to do it." Plentiful comments were made by users about difficulties anticipated or experienced in getting set up, centred on changes to current accounts, paperwork, delays such as waiting for approval, and the learning involved. Users also saw the set up procedure as a key barrier that they had overcome. After set-up, procedures required to log on, access and download the banking site, and transact, were considered costly by users and non-users alike.

4.7.2 Financial

Computer purchase, internet access and internet banking transactions incur charges. Participants mentioned recent changes in the introduction of fees for internet banking where previously there were none. One non-user mentioned the lack of need for such a 'sophisticated service', thereby enabling him to avoid the cost. Some participants were highly aware of even small differences in transaction fees between alternative services.

4.7.3 Relational

While one user was pleased with the loss of contact with call-centre staff when moving from phone banking to internet banking, some users commented on the sadness of losing personal relationships with branch personnel. This suggests that for some people, there are relationship costs to be factored into the adoption decision.

4.8 Relative Advantage

"I don't really know what online banking has to offer me, so that's why I don't want to use it".

Participant perceptions of relative advantage had clearly influenced choices of banking method, as the above comment illustrates. We found that non-users were unaware of many of the relative advantages of internet banking such as the ability to print receipts (unavailable in phone banking) and the ability to store Bpay (Australian business account) identifiers for a range of companies to which bills would regularly be paid (for example, utilities, credit card payments). Some non-users cited the lack of awareness of benefits as the reason why they had not adopted internet banking. Benefits were regarded as relative and were compared to a 'satisfying' (or 'status quo') decision (Klein, 1999), with many non-users suggesting their banking needs were already being met. Several non-users felt that the claimed advantages of internet banking were for other types of people. For instance, one non-user suggested: "I'm a very organised person, and I would not need something like that", while another remarked that obtaining updated balances was not of much benefit to him, as his balance never fell below $10,000 and thus he did not need to check it constantly.

Users were easily able to cite advantages of internet banking such as the ability to visualise account data, access to timely account data, and the ability to make the most profitable use of available funds through fund transfer among multiple accounts displayed on screen.

4.9 Support and Knowledge

"Before I chose online banking, I phoned the bank and they told me a lot of things, and I went to see the Web site."

This comment highlights the role that responsive, personalised consumer support – combined with access to knowledge – played in influencing adoption for the study participants. Participants sought knowledge about internet banking features, relative advantages and benefits; costs; risks; how to sign up and how to use; how to obtain support; and general problem-solving.

However, many participants complained of inadequate access to required knowledge and to sources of assistance. Most participants believed this knowledge should be made available through immediate forms of interaction with banking personnel – face to face, online chat or telephone. Such media were preferred to e-mail, searchable internet-based knowledge repositories, web pages, or printed literature. Participants complained that many bank personnel knew very little about internet banking and, moreover, did not understand how it worked. In

particular, personnel in branches did not appear to have this understanding and this was taken as a discouraging sign of poor levels of consumer service and support. Participants' impatience about obtaining immediate assistance, together with their lack of confidence in respect of locating the information they needed quickly from documentation or online databases, was evident.

Support was needed even prior to registration in the form of a demonstration or tutorial, so that a prospective user could assess how internet banking worked, with suggestions including having training running continuously at branches. As an example of the need for initial support, one participant commented on the difficulties of trying to arrange for banking personnel to visit a rural area to conduct an awareness and training class for potential internet bankers. Support was also needed for initial registration and set up, followed by responsiveness to ongoing concerns. One user observed that when banking staff were summoned to assist internet bankers, they were often not as responsive as with other types of consumers.

4.10 Gender choices

Our findings (also in Williamson et al, forthcoming) revealed some interesting differences between gender choices. We found that female users were mostly doing internet banking at home rather than at work, even when they had part-time or full-time jobs outside the home. These women had busy lives with children, house duties or work, and mentioned valuing the convenience of 24/7 access, with the ability to get onto the internet late at night while their children slept or whenever there was a spare moment. Personal safety was also cited as a rationale for home internet banking.

Of interest, women with part-time jobs mentioned that they could not use valuable time at work for internet banking. The few women with full-time jobs either did internet banking at home - expressing concerns about the issues involved in workplace use - or had chosen phone banking. In general, women who had chosen phone banking also cited convenience reasons. However, this group either had fewer internet access opportunities than the female internet bankers or expressed various concerns about the technology, such as possible difficulty in use, and level of risk.

It has been reported by some experts that women have greater fear and less interest in new technologies such as the internet (Morahan-Martin, 2000). This was also suggested by our interviews. For example, one female non-user expressed her concern as "We're on the internet, but I don't dare touch the thing in case I spoil it." However, as Wilson and Howcroft highlighted, technology and gender mutually construct one another through social shaping, thereby paving the way for gender attitudes toward technology to be modified through social and societal change (Wilson and Howcroft, 2000). Male non-users interviewed did not express similar concerns as reasons for not using internet banking (although, of course, this does not prove that they had none). Most of the males with the internet at work used the internet there, citing convenience in terms of speed due to high speed dedicated access and having been trained in internet use through normal work activities.

5. Discussion

In this section, we first discuss key findings from the study emphasising those that are new and thus preliminary, followed by findings that confirm current literature. We also summarise (Table 2) the key issues and related recommendations for Australian banks and other financial institutions.

First, convenience – particularly in terms of time savings – is the main motivator for consumer adoption of internet banking. While this finding was also previously reported in a recent Australian ACNielsen (2005) survey, the Pew (2003) survey of American banking consumers, and several academic studies such as Ramsay and Smith (1999), the concept of convenience was found more granular by our study, in terms of accessibility, habit and ubiquity, and is therefore a new finding:

- Accessibility, particularly dedicated and unchallenged access, contributes to perceptions of convenience. Male perceptions of convenience may be associated with high levels of accessibility (particularly in the workplace) and internet self-efficacy, while for women, 24/7 home access may be important (as extensively discussed in the previous section). Durkin (2004) noted the role of workplace access in internet banking adoption but did not associate it with perceived convenience or the male gender. Banks can investigate the potential for promoting to businesses the goodwill benefits of allowing employees to do their banking online at work, and explore other solutions to this problem. In addition, to the best of our knowledge, the convenience of 24/7 banking from home has not been specifically linked to the female gender in previous studies of internet banking adoption. Clearly, banks need to address the access needs of each gender.
- Banking consumers who habitually use particular banking methods find their own form of banking convenient. While in one recent study, habit was found to play a key role in internet banking use (Wan et al., 2005), habit has not previously been linked to consumer perceptions of internet banking convenience. In Chung and Paynter's (2002) internet banking adoption study, it was found that non-users of internet

banking did not need high levels of convenience. However, quite possibly their study's participants found their own methods convenient enough, due to habit. Our finding suggests that methods that address the changing of habit are needed in order to persuade consumers to move to internet delivery.

Table 2: Internet banking – Key recommendations for banks

Consumer issue	**Recommendation**
Lack of awareness of internet banking and its benefits	- Attract consumer attention to internet services through better marketing - Inform consumers about features, advantages and benefits of internet banking, especially its convenience. - Allay consumer concerns about technology and support
Lack of dedicated unchallenged consumer internet access	- Establish facilities such as dedicated internet banking kiosks in banks and public places - Develop cheaper mobile alternative technologies * Both of the above would improve perceptions of convenience, shown to be a prime motivating factor in internet banking use.
Restrictive workplace access	- Offer incentives to businesses to facilitate internet banking
Lack of internet confidence	- Offer internet training
Competition with phone banking	- Offer training in internet banking - Market relative advantages of internet banking, especially the convenience factors
Difficult initial set up procedure	- Streamline set up procedures and provide set up support
Difficult to use	- Improve screen design and navigation - Integrate banking systems
Lack of trust; Security and privacy risks	- Provide consumer reassurance and information - Improve application security and privacy, and bank information security and privacy - Assist consumers in developing secure internet banking practices and risk management procedures
Inadequate knowledge and support	- Develop innovative consumer support solutions - Train branch staff in internet banking - Develop new knowledge management strategies
Women's concerns	- Develop targeted strategies to improve women's access and internet self-efficacy, and address their technological concerns

A second key finding is that while in earlier studies, security, privacy and trust concerns dominated consumer concerns about internet banking in Australia (e.g. Sathye, 1999), such concerns have now slipped below convenience issues in their importance to consumers in banking method choices. Munene et al (2002) and ACNielsen (2005) also found that Australian consumers place the convenience of internet banking ahead of risk concerns. However, our study has revealed a greater level of internet banking risk acceptance by Australians than previously recognised by internet banking adoption studies. We also discovered that Australian internet banking consumers have learned to live with a sketchy understanding of security, privacy and trust issues and ongoing doubts, by managing their own attitudes and implementing self-styled personal risk management strategies such as printing hard copies of electronic documents as evidence in the event of loss of integrity. We suggest that banks consider offering advice and support for internet banking consumers in establishing and implementing such strategies. Regarding non-users, it is worth noting that although they had greater security and privacy fears compared with users, perceptions of convenience governed their choices, rather than fears. Banks should of course continue to improve their security and privacy measures, reassure non-users (Rotchanakitumnuai and Speece, 2004) and act scrupulously (Harris & Spence, 2002) while our findings suggest banks should also examine ways by which to improve their public image.

Third, a major finding not previously reported is that there is a need for extensive and deep levels of consumer support from banks, especially in terms of the immediate availability of support-oriented knowledge provided by knowledgeable bank personnel using interactive channels. While recent studies have noted a need for information provision on banking web sites (Waite and Harris, 2004), this is the first study to observe the need for immediate, interactive, knowledgeable consumer support for internet banking, from the beginning of the set up procedure onwards. Such support should be available from all banking personnel encountered, including branch personnel. It is simply not acceptable nowadays for a bank employee who is asked for assistance at a branch or in a contact centre to know little or nothing about internet banking.

Evolving developments in strategic knowledge management, customer relationship management and new customer support technologies may help to enable this objective and the training of banking personnel would clearly be valuable. Costs of internet banking have been higher than expected, with consumer interactions increasing and adding to costs (Lund et al., 2003). Since the time of study, there have been moves to develop new value propositions in branches by adding services (Silva, 2002). New software solutions can provide contact records of all consumer activity including online activity, thereby enabling effective support to be personally brought by a bank staffing member to a consumer, no matter which banking channel has been used. Furthermore, consumers can register for internet banking via the package. These and other emerging support solutions (including chat facilities) should be considered by banks to help address consumer perception of inadequate support and knowledge. Walker et al (2000) suggest that organisations consider the right mixture of technology-enabled and personal service, and the above type of software may provide this blend. Knowledge management solutions of all kinds should be considered, and research into identifying the needs would be useful.

Fourth, a major finding is that some banking consumers may still be unaware of the existence, features, relative advantages and benefits of internet banking, as their attention has not yet been drawn to internet banking. The issue of attention has been vastly underrated in previous studies on this subject. We suggest that banks can do far more to bring people's attention to their internet services, and to provide the range and depth of knowledge needed to attract these markets. Marketing campaigns, attractive dedicated literature, and awareness sessions may prove valuable for this purpose, although having knowledgeable staff readily available at bank branches and contact centres would clearly be important in light of our findings about the importance of immediate access to banking employee knowledge.

Fifth, phone banking was the main method of banking used by people who might otherwise have attempted internet banking. Phone bankers believed their banking needs were currently being met in that they already had fast, immediate, convenient access and they already knew how to use the telephone which they also believed was easy to use. They exhibited significant resistance in changing this viewpoint. They believed convenience and usability were found in phone banking. We suggest there may be a potential market segment within current phone bankers – those with high levels of dedicated, unchallenged internet access and good internet self-efficacy – who are unaware of the features, relative advantages and benefits, and especially the convenience, of internet banking. We suggest that banks provide improved knowledge in this respect to this potential market.

Sixth, and a familiar finding in internet adoption studies, some people still do not feel confident about their ability to use the internet, and view using the internet for applications such as internet banking as too difficult. Eastin and LaRose (2000) found internet self-efficacy to be positively affected by prior internet experience, positive outcome expectancies and internet use, and negatively affected by Internet stress and internet self-disparagement. Banks can consider offering internet training for people with low internet self-efficacy.

Finally, for those people who are already aware of internet banking and its relative advantages, have high levels of internet access and self-efficacy, and enjoy the conveniences of internet services, a difficulty is the initial set up procedure, which is regarded as cumbersome, complicated, stressful and requiring significant effort. We suggest that banks investigate simplifying, streamlining and offering improved support for set up procedures.

Having reported the key findings regarding factors of importance, this study found that the key reasons for non-users not having adopted internet banking were: perceptions that their current banking method was convenient; lack of awareness of the relative advantages; low levels of accessibility, lack of proficiency in the technology, habituated preference for face-to-face or telephone banking services, security and privacy issues, and distrust of the internet banking channel. These issues have been extensively discussed above.

6. Conclusion

In this paper, we have reported findings from a series of in depth individual and group interviews that investigated Australian banking consumers' thinking in choice of banking methods, focusing on identifying key influences in consumer adoption of internet banking. We reviewed reference literature suggesting potential influences (summarised in Table 1) and described a framework (Figure 1) depicting key factors influencing

consumer adoption of internet banking, derived from our data. We also provided a set of key issues and recommendations for consideration by Australian banks (summarised in Table 2). This study has confirmed some of the existing research findings from the literature and has also uncovered some new insights.

While our results are derived from interviews of thirty-two people (Australians) over six months and are therefore not immediately generalizable, our findings are yet indicative of a range of factors that influence consumer adoption of internet banking in the Australian context. The synthesis of previous literature (Table 1), theory of consumer internet banking adoption (figure 1) and the theoretical understandings provided by relating the findings to the earlier literature have added to existing theory in this area. On a practical level, the recommendations provided in this paper may be useful to Australian banks and perhaps other countries' banks that are considering how to attract more consumers to their internet offerings. At a broader level, our results may prove useful to other service industries looking to increase the adoption of internet-based services, or in the process of developing such offerings.

Future research is needed to explore the issues identified and theory developed in this paper. The framework for consumer internet banking adoption can be explored by conducting further interpretive studies and may help in developing hypotheses for a survey of Australian banking consumers. It would be valuable also to conduct an interpretive study of financial institutions to better understand their concerns and capabilities regarding the issues raised in this paper. Studies in other countries would be useful as well to identify any differences in the adoption framework and in the recommendations for banks.

In closing, we observe that banking service convenience, cited by many participants as the dominant factor in banking method choices, appears to be a malleable construct. All participants found their own banking methods convenient. However, some participants were paying a price for this convenience in the form of the missed advantages and benefits available from internet banking – advantages which are likely to increase with time as banks add more services to their internet offerings. With careful planning and management as outlined in our recommendations, these perceptions of convenience may well be amenable to change. While improvements are certainly needed in the internet banking application and environments of use, this study suggests that organizations will better manage consumer attitudes to new internet service applications if they understand that such experiences involve a process of adjustment and learning over time, and not merely the adoption of a new technology.

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Appendix: Examples of Interview Questions Asked

(Note: By online banking we mean internet banking.)

1. What is your preferred method of banking and why?
2. How often and how long have you been doing online banking ?
3. Have any of the following factors influenced your decision regarding online banking? Access to computers; lack of familiarity with computers; lack of familiarity with online banking technology; difficulty in understanding and using online banking facilities; concerns about speed of download and/or reliability of technology; unfriendly web site design; and twenty-four hour access. (Where relevant, participants were also asked to explain why and how the factors were influential.)
4. Are security, privacy and trust a concern for you with online banking? (Lay definitions of these terms were given to participants.)
5. What kinds of people does online banking suit best? Why? What kinds of people does online banking not suit?