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Paradoxes and Technology Adoption: A Retail Banking Analysis

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ABSTRACT

The study reported in this paper explores consumers' experiences with technology-assisted service encounters by investigating the applicability of Mick and Fournier's paradoxes of technology adoption to the electronic banking scenario. In-depth interviews were conducted to explore consumers' experiences when using electronic banking and the results were compared to those of Mick and Fournier. The findings are similar, suggesting that when consumers adopt technology they can simultaneously develop positive and negative attitudes. The findings of this study also suggest that the nature of some of the paradoxes experienced by consumers may depend on the industry and the technology being investigated.

ARTICLE

Introduction

The ways consumers evaluate their service delivery outcomes significantly influence their satisfaction and/or dissatisfaction with a particular service encounter and their overall views of a firm's service quality (Lehtinen and Lehtinen, 1982; Gronroos, 1998). The existing literature suggests that when evaluating the service delivery process, personal contact is the most significant determinant of customer satisfaction nd/or dissatisfaction because customers cannot clearly distinguish the service they receive from the employees who provide it (Schneider and Bowen, 1985;

Parasuraman, Zeithaml and Berry, 1988). This suggests that a change in the series of actions that reduces human contact would result in a change in how consumers evaluate the service encounter (Gronroos, 1984; Zeithaml, Parasuraman and Berry, 1990).

Technological advances have resulted in significant changes in how some service organisations deliver their services. In particular, services that were traditionally delivered through personal contact between an organisation's employees and its customers can now often be delivered electronically with minimal direct contact between the two parties. It appears likely that this change in the service delivery process has resulted in a change in the way consumers evaluate their service encounters. Researchers have begun to explore the impact of technology on service delivery processes with the general consensus being that more research is necessary for a greater understanding (Dabholkar, 1994; Bitner, Brown, and Meuter, 2000).

The aim of the study reported in this article is to explore consumers' experiences with technology-assisted service encounters in the retail-banking sector. This industry sector was selected because technological innovations have significantly changed how banks deliver their retailing services, providing consumers with electronic access to their transaction accounts through electronic funds transfer at point of sale (EFTPOS), automatic teller machines (ATM), telephone, Internet and home banking.

Literature Review

Numerous studies have explored how consumers adopt technology (Wilkie, 1994; Barczak, Ellen, and Pilling, 1997; Swanson, Kopecky, and Tucker, 1997; Wiefels, 1997; Aggarwal, Cha, Wilemon, 1998; Dover, 1998; Williams and Tao, 1998). These studies can be classified into four categories based on their overall perspectives. The first category includes studies that address the stages consumers go through from awareness of the new technology's existence to adoption (Aggarwal et al. 1998; Williams and Tao, 1998). The second category involves studies that explore the amount of time that elapses between the inception and the adoption of new technology (Wilkie, 1994; Wiefels, 1997). The third category consists of theories that focus on the impact of consumers' characteristics and stage in life cycle when adopting technology (Swanson et al. 1997; Barczak et al. 1997). Finally there are theories that address the nature of the technology being adopted (Wiefels, 1997; Dover, 1998). All these theories emphasise consumers' behaviours leading to the adoption of new technology.

Mick and Fournier's (1998) theory of technology adoption is the most pertinent to this study as it focuses on consumers' behaviours and attitudes once they have adopted a technology. Mick and Fournier studied consumers' perceptions of technology and the development of their attitudes once they had adopted a technology. Their data collection was a two-stage process done through in-depth interviews with 29 households. During the first stage they interviewed 16 informants seeking information on their general attitudes towards technology. During the second stage they interviewed 13 informants 24 hours, six to eight weeks and six to eight months after buying and using their new technologies. The authors found that consumers experience eight paradoxes of technology: control/chaos, freedom/enslavement, new/obsolete, competence/incompetence, efficienc/inefficiency, fulfils/creates needs, assimilation/isolation and engaging/disengaging. These paradoxes are briefly discussed below.

The control/chaos paradox was found to be the most prevalent among their informants. The finding was that technology evokes feelings of control when it dictates consumers' activities and feelings of chaos when it interferes with their activities resulting in confusion. Feelings of freedom are experienced when technology provides minimal restrictions and independence. By comparison enslavement results when activities are restricted by dependence on technology.

The new/obsolete paradox was found to result from new knowledge and innovations generated by science that constantly supersede previous existing knowledge. This is the case where continuous technological innovations constantly make existing technologies obsolete. Technology also evokes feelings of competence and incompetence. Competence results when consumers understand how a particular technology works and incompetence results when they are ignorant of how to use a particular technology.

Technology can be considered efficient when tasks can be completed in less time and with less effort. However, inefficiency may result when the same tasks require more time and effort, such as when the technology does not work like it is expected to. Mick and Fournier's informants stated that technology can fulfil some needs but it can also identify unrealised needs. The fulfils/creates needs paradox appeared to be subtle and was discussed in relation to the ownership and use of computers. For instance, some informants indicated that the computers they own fulfil various needs whilst others felt the need to own computers and/or acquire the knowledge to utilise them.

Technology can also result in human separation and/or human togetherness. It facilitates assimilation when consumers engage in activities such as watching sports and movies on television and communicating through the use of telephones and computers. By comparison, isolation results when the time consumers spend watching television and playing video games erodes the time they spend socialising. Mick and Fournier also found that the use of technology could be engaging and/or disengaging. It is engaging when Ait facilitates the flow of activities and disengaging when it leads to disruption and passivity (1998; p126).

Mick and Fournier's study addressed the use of technologies such as computers, answering machines, caller identification kits and video cameras. These are products that consumers typically purchase and own for leisure-related outcomes. This study investigates the generalisability of Mick and Fournier's eight paradoxes to the Australian banking industry. The emphasis is thus on forms of technology that are often not owned by the consumer and that are used to facilitate commercial transactions rather than leisure pastimes.

Methodology

A sample of 20 informants was selected from the population of Western Australians who currently use electronic banking via a snowballing technique. Researchers recommend the use of snowballing when sampling frames and information on the target populations are unavailable (Minichiello, Aroni, Timewell and Alexander, 1995; Sarantakos, 1998), as was the case in this study. The snowballing process began by asking colleagues to introduce the researcher to consumers who use Internet banking. These informants were in turn asked to introduce the researcher to other users of electronic banking.

While snowballing provides access to members of the targeted population it increases the risk of non-representative samples because the characteristics of the resulting sample may be different from those of the target population (Strangor, 1998; Sarantakos, 1998). Thus, although the resulting sample provided valuable insights into consumers' experiences with electronic banking, it is not representative of the targeted population and its small size means that the results are not generalisable. Instead, the objective was to provide initial insights into an area of consumer behaviour that has received little attention in the past. The results provide a starting point for future validating research.

Data collection was done through semi-structured in-depth interviews, which are ideal in scenarios such as this where the

available secondary data is limited and it is necessary to probe interviewees to gain a thorough understanding of their behaviours and attitudes (Denzin and Lincoln, 1994; Fontana and Frey, 1994; Minichiello et al. 1995). The interviews were conducted using a funnelling approach so as to establish rapport between the interviewer and the interviewees (Kidder, Judd and Smith, 1986; Fontana and Frey, 1994; Minichiello et al. 1995). Thus, interviews began with a general discussion of the interviewees' overall attitudes towards banks, followed by questions relating specifically to each of the four electronic banking modes and informants' experiences when using them.

The in-depth interviews were tape-recorded and transcribed with the resulting data imported into N.U.D.I.S.T. (Non-Numerical Unstructured Data Information Searching, Indexing and Theorizing) software. N.U.D.I.S.T. was selected as it facilitates analysis by allowing easy identification and classification of themes (Weitzman and Miles, 1995). The data were analysed using line-by-line coding in order to identify and note emerging themes and categories regarding the use of electronic banking (Strauss, 1990; Huberman and Miles, 1994). Some of the codes were developed deductively on the basis of Mick and Fournier's (1998) paradoxes of technology adoption (Miles and Huberman, 1984; Strauss 1990) while others were developed inductively based upon the issues raised by interviewees.

Findings

Control/Chaos

Mick and Fournier's informants indicated that they experience feelings of control when technology seems to direct their affairs and chaos when it seems to disrupt their activities. The interviewees to this study alluded to this paradox. They indicated that using banking technology makes them feel like they are in control because they can conduct many transactions at their convenience. However, chaos can result when they cannot initiate or successfully complete a transaction:

Control - Simon: The banks let you do what you want to do. You can pay, can transfer money, pay a loan, or try and pay some bills. Chaos - Simon: The biggest disdain is when you go there (to an EFTPOS/ATM) and it is being serviced or it has been shut down... all of a sudden you have to deal with having no money and you do not know what to do.

The interviewees reported feelings of control when there are minimal restrictions and they can conduct any of their banking transactions with the use of technology. Once they are accustomed

to conducting their own transactions chaos can result when they expect to use the technology and it is unavailable. The meaning of control appears to differ between the studies. Mick and Fournier's informants suggested that technology controls them, directing them and their activities. Their informants gave an example of a computer that could wake them up and answering machines that needed constant checking (Mick and Fournier, 1998). The interviewees to this study indicated that by using technology they could control their own activities. Specifically, they can conduct their banking transactions when, where and how they choose. The significance of control is consistent with existing literature which suggests that the more control consumers feel they have during the service encounter the more positive their attitudes (Bateson, 1985; Dabholkar, 1996).

Freedom/Enslavement

In this study the perception of control was related to that of freedom. The interviewees indicated that banking technology gives them freedom to conduct their transactions whenever and wherever they choose. They can pay bills, transfer funds and perform other transactions at their own convenience. In years gone by consumers could only pay bills and make account transfers during office hours when their banks and/or agents were open. Technology evokes feelings of freedom because it has reduced these restrictions by allowing consumers to pay bills directly from their accounts at their convenience.

Freedom - Kevin: You can do your deposits and withdrawals without having to go to the counter. If you do online trading you can monitor it through the Internet whenever you like.

However, some interviewees indicated that though they do most of the banking electronically there are limits to what they can achieve. In particular, they discussed restrictions imposed on the number of transactions and the nature of transactions they can conduct.

Enslavement -
Kevin: I mean for simple services it works. But if you have a particular question it is not very good because they have limited services on it.
Timothy: They say you are allowed 8 withdrawals from an ATM without charges. That is what I do.

The perceptions of enslavement appear to differ between the two studies. Mick and Fournier's informants indicated that technology results in feelings of enslavement when they become dependent on it, indicating that they feel like slaves to technology. Interviewees in the present study alluded to feelings of enslavement as a result of

the limitations of electronic banking, such as limitations on the number of free transactions consumers can conduct and the limitations that result from the nature of the electronic banking modes. For example EFTPOS and ATMs cannot facilitate account transfers and telephone and Internet banking cannot facilitate cash withdrawals.

New/Obsolete

Continuous technological innovations constantly make existing technologies obsolete. In an electronic banking scenario this would result from an increase in new banking technologies that make existing ones obsolete. Some informants made reference to this paradox, referring to the rate at which electronic banking is changing and the implications for customers having to continually learn new banking procedures.

Ronnie: I started using teller machines and by the time I got accustomed to them I was getting pushed into Internet banking.

One informant conceived of a situation in the future where a box (similar to a VCR) will be owned by consumers that facilitates all banking activities. Other informants visualised a cashless society.

George: Well next there will be a new box similar to the Foxtel one that gets hooked up to your telephone line, that can allow you to do all your banking from home.

While some interviewees noted the tendency for banking technologies to change over time, the new/obsolete paradox was not as salient to the interviewees in this study as for those in Mick and Fournier's study. The difference may result from the nature of the technologies being discussed in both studies. Mick and Fournier's informants discussed products such as computers, music records, and answering machines that are normally purchased for recreational use and become regularly outdated. Interviewees to this study discussed banking technology, which is used for service delivery processes. Banking institutions purchase the software necessary for the service delivery process and it is therefore likely that the technological innovation and their obsolescence would have a greater impact on the institutions than on consumers.

Competence/Incompetence

The interviewees indicated they feel competent when they feel they have the ability to complete their own transactions successfully. However, their ignorance of how some electronic banking modes work and their inability to comprehend the full capabilities of some electronic banking modes can make them feel incompetent.

Competence - Esther: I find Internet banking easy to use. I have mastered the bill paying system, which is good. I also use the broking service and I have had no problems with it.
IncompetenceBAndrew: So I went round to the ATM and I thought I do not know how to do this I know that you can put money in the ATM but I do not know how...I do not always trust myself with ATMs because I am not totally familiar with them.

Mick and Fournier's informants made reference to technologies that are normally accompanied by operational manuals. They indicated that after using the manuals if they understood how and why a technology works like it does they felt competent. If they still did not understand how the particular technology works they felt incompetent. The electronic banking modes have no equivalent to operational manuals that can assist consumers with their transactions. Thus, consumers who require assistance with the different banking modes have to directly access their institutions. This perceived lack of resources and training may influence their feelings of incompetence.

Efficiency/Inefficiency
The use of technology may result in some tasks taking less time and effort. It can also result in inefficiency when tasks require more time and effort:

Efficiency - Brenda: (Internet banking) is straight forward straight through. You are not waiting for somebody to pick up the phone, and you are not listening to music.
Inefficiency -Brenda: For me I just hate to waste my time. It is just aimless siting there on the phone with a mechanical voice saying 'press this here, press this after that'.

This paradox was discussed relative to electronic banking transactions and transactions conducted in the bank with human tellers, with electronic banking generally felt by interviewees to be more efficient than dealing with an employee. Electronic banking transactions are considered efficient when consumers can access their accounts and complete their transactions without going through numerous voice and visual cues provided by the banking modes, and without visiting a bank branch. However, these transactions are perceived to sometimes result in inefficiency when consumers have to follow each of the cues provided by both banking modes in order to perform their transactions or when the failure of an electronic banking mode results in the consumer having to visit a bank branch.

Fulfils/Creates
Mick and Fournier found this paradox to be subtle and only

discussed in relation to the ownership and use of computers. Some of their informants indicated that the computers they own help fulfil various needs, whilst others felt pressure to own computers and/or acquire the knowledge required to utilise them. Similarly, the interviewees in this study indicated that banking technology has led to the fulfilment of many of their banking needs, such as the easy payment of bills and access to and transfer of funds. However, for some interviewees the advent of electronic banking has resulted in the identification of previously unrealised needs. Examples of such needs are the desire to own computers for online banking and the need to learn and understand how to conduct electronic banking transactions.

Fulfils needs -Sarah: I find EFTPOS and ATM machines are good. They are very good when I want to get some money out.
Creates needs - Sarah: I would like to do it (Internet banking). But, I haven't got a computer at home and I haven't got access to a computer.

The most salient need amongst the interviewees that related to this paradox seemed to be the need to own and/or understand how to use computers. They implied that if they owned computers and fully understood how they work and how to use them, they would be more inclined to use Internet banking.

Assimilation/Isolation
The interviewees made no direct or implicit references to electronic banking fostering human togetherness, however they indicated that it can result in isolation. Forman and Sriram (1991) state that for lonely consumers the purpose of shopping is not only to gain goods and services but also to gain and maintain social contacts. Similarly, some interviewees enjoyed personal interaction with bank tellers, viewing their banking activities as social events. For these interviewees, electronic banking is creating isolation by destroying their interaction and relationships with bank tellers and managers.

Jane: I want the service across the counter. I want the community bank. I want to go to a teller who knows me and to a bank manager who lives in this area. They have closed the banks that bring in the trade to all these shops.

The quote suggests that the traditional banking methods encouraged human togetherness as a result of the interactions between customers and bank staff and interaction of consumers at shopping centres. The quote implies that electronic banking facilitates isolation because it leads to the closure of the brick and mortar branches consequently reducing the traffic in shopping and business centres Engaging/Disengaging Mick and Fournier found

that technology is engaging when it facilitates certain tasks and disengaging when it results in confusion and chaos. Electronic banking is engaging when it facilitates the flow of activities such as easy access to accounts, bill payments, funds transfers and financial markets. However, it is disengaging when the electronic banking mode does not facilitate the transactions required by the respondent.

Engaging - Mathew: I think the biggest benefit of it is that you have got access to not just the banks but to people that charge you bills, like Western Power and gas. You can access your account and transfer money from your account and pay bills.
Disengaging - Mathew: The most annoying thing I have had on Internet is something happened to my certificate on my machines. It meant using all that time and going into the bank and starting from scratch again.

Mick and Fournier found this paradox to be hypothetical, stating that it is a noteworthy paradox even though their informants rarely alluded to it. The paradox was more prevalent in this study with informants suggesting that they are motivated to use electronic banking technology because it facilitates their banking. It allows them to withdraw money, pay bills, make account enquiries, enact transfers and participate in brokerage services. The difference in perception of this paradox may be a result of the technologies being discussed. The processual (as opposed to recreational) use of banking technologies may lead consumers to place particular emphasis on their engaging aspects.

Conclusions and Future Research

This study sought to explore consumers' experiences with technology -assisted service encounters by investigating the applicability of Mick and Fournier's paradoxes of technology adoption to the Australian banking industry.

The findings support those of existing research which suggests that consumers can develop multiple attitudes towards certain source elements, resulting in existence of contradictory views and attitudes (Kidder et al., 1986; Minichiello et al., 1995; Mick and Fournier, 1998). In terms of Mick and Fournier's paradoxes, the findings of this study indicate that when consumers use technology assisted service encounters for retail banking services they are most likely to experience control/chaos, freedom/enslavement, competence/incompetence, efficiency/ inefficiency, engaging/disengaging, assimilation/isolation paradoxes and least likely to experience the new/obsolete paradox.

While most of the discussions of the paradoxes were similar between the two studies, there were areas of difference in the control/chaos, freedom/enslavement, new/obsolete and engaging/ disengaging paradoxes. It appears likely that a central cause of these differences was the types of technologies investigated. In terms of the new/obsolete paradox, while consumers can own telephones and computers they typically own these items for purposes beyond electronic banking. They cannot own ATMs and EfTPOS machines. nor are they responsible for the banking software programs that require constant innovation. As such, the notions of new and obsolete appear to have less relevance to users of electronic banking.

In regards to the control/chaos paradox, perceptions of control differed markedly between the two studies. Mick and Fournier's informants indicated that technology is powerful and it controls them and directs their activities. The interviewees of this study suggested that banking technology gives them the power to control their banking activities. In terms of the freedom/enslavement paradox, Mick and Fournier's informants indicated that they sometimes feel like slaves to technology, while the interviewees in this study did not feel like slaves. Instead, they felt that their activities are limited by the nature of the electronic banking technologies and the penalties imposed if they exceed the number of free transactions they are allowed. Finally, Mick and Fournier did not find the engaging/disengaging as paradox prevalent as it was in this study. This again may be because of the products used in the analyses.

This study has several limitations. The generalisability of these findings is limited by the small sample of 20 interviewees used. It is not known the extent to which factors such as the nature of the technologies selected and the demographic characteristics of those sampled influenced the interpretation. Further research is required to assess the extent to which these findings are representative of Australians in general and the applicability of these paradoxes to technology -assisted service encounters in other industries.

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