

## PROSPECTS AND CHALLENGES OF E-BANKING IN MALAYSIA

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### ABSTRACT

The advent of the Internet has revolutionized the way banking is done. Realizing the importance of what is popularly known as e-banking, in June 2000, the Central Bank of Malaysia allowed banks to conduct banking activities via the Internet. Four years later, almost all major local banks are providing e-banking services. The aim of this paper is to provide an overview of e-banking adoption in Malaysia. It begins by analyzing the local bank websites using a model introduced by Chung and Payter (2002). The study then examines the different types of e-banking products used by adopters before finally describing the characteristics of e-banking adopters. Five hundred and forty two usable questionnaire responses were received to a survey, of which fifty four percent were from e-banking adopters. Most of the adopters took advantage of the service to carry out basic activities like viewing balance inquiries, obtaining summary reports of their transactions and using savings and current account facilities. A large number of the adopters used the e-banking services when necessary, i.e. once a month to pay utility bills and accessed the facilities either from home or the office. Many were encouraged by friends and family members to use e-banking. The study also illustrates that there were more adopters among the younger age groups, among those with higher salaries and those holding higher positions.

### Keywords

Internet banking, banks websites, Internet banking adopters

### 1. INTRODUCTION

In the information age, it is difficult to deny the presence of many technological inventions that science has brought into our lives. One of the advanced technologies that have been introduced is electronic-banking or e-banking. Traditional banking is characterized by physical decentralization, with branches scattered around populated areas to give customers easy geographic access. The physical banks also serve to assure customers that their bank has substantial resources and can guarantee the security of their savings (Lockett and Littler, 1997). E-banking, on the other hand, does away with the need for most visits to the bank. It is a state-of-the-art service that is just beginning to take off among banking customers. Indeed, it has major potential for future development as allows customers to do most of the things they do at banks like make balance enquiries, transfer funds and pay bills over the Internet.

E-banking has become increasingly prevalent, employed by many financial institutions to reduce costs associated with having personnel serve customers physically, shorten processing periods, increase speed, improve the flexibility of business transactions and provide better service overall (Shih and Fang, 2004). Also, with the rapid growth of other types of electronic, largely Internet based services, there has been increased interest in e-banking services. Both the academic and popular literature forecasted the rapid growth and significant impact of e-banking on all types of markets (Nielsen, 2002).

Recently, many banks have launched and developed such services. (Booz Allen and Hamilton, 1996; Daniel, 1998). Ebanking is not only gaining ground in Europe (Forrester Research Europe, 2002) and in the United States (Diniz 1998), but also in developing countries such as Thailand (Ongkasuwan and Tantichattanon, 2000), Oman (Al Sabbagh and Molla 2004), India (Singh and Malhotra 2004) and South Africa (Hoppe et al., 2001). Malaysian banks for instance, have been offering e-banking since 1<sup>st</sup> June 2000 when domestic banking institutions were allowed to provide a full range of banking products and services over the Internet. Locally incorporated foreign banks were allowed to set up communication websites with effect from 1 January 2001 and transactional websites from 1 January 2002 (BNM, 2000).

Four years after implementation, a study of e-banking among Malaysians is timely. This study will 1) analyze the banks' websites 2) identify e-banking service usage among e-banking adopters, 3) describe characteristics of e-banking adopters. This paper is divided into five main sections including the introduction. In the second section, literature pertaining to e-banking will be discussed while the methodology used to carry out the study will be elaborated in Section 3. The findings of the study are detailed in Section 4 and conclusions will be drawn in Section 5.

## 2. REVIEW OF LITERATURE

E-banking services are increasingly becoming part and parcel of the business environment. The development of information technology, the ever changing consumer lifestyle and preferences, and liberalization of the financial sector have served to foster stiff competition among financial institutions. To fully utilise the potential of e-banking services, banks should be able to appreciate all possible benefits that may derive from the introduction of e-banking facilities. Information pertaining to the facilities provided by the banks are normally posted on their websites (Balachandhler et al., 2003; Diniz, 1998) which can be described as informational, transactional, or beyond transactional.

E-banking offers banking services outside of the normal opening hours (Rubino 2000). In fact, it has effectively "opened" banks for business twenty-four hours a day, seven days a week. Customers can do their daily banking activities without having to wait in line or wait on hold for telephone banking services. It is especially appealing to customers who have a hard time keeping track of their finances (Deitel et al., 2001). In addition, many banks offer PC-based home banking products and services to perform a variety of e-banking services at home. E-banking offers electronic services that allow consumers to check the balances in their accounts, transfer funds among accounts, pay bills electronically as well as apply for loans, download information about accounts into their own computers, trade stocks or mutual funds, look at images of their cheques and deposit slips (Turban et al., 2004).

Singh and Malhotra (2004) found that most banks in India provide customer correspondence and balance enquiry whereas in Oman, most of the bank customers indicated that they used e-banking facilities to make statement enquiries and to make utility payments (Al Sabbagh and Molla 2004). Sweeney et al. (2000) revealed that in the US, e-banking grew significantly between 1998 and 2000 when approximately eight percent of all households were reportedly using e-banking services. Households rated the ability to view cheque clearings and account balance information as the two most valued features of e-banking.

Bank customer willingness and motivation to adopt e-banking may be viewed using the technology acceptance model (Suh and Han 2002). The model is based on the theory of reasoned action (Fishbein and Ajzen, 1975). Liao et al. (1999) and Tan and Teo (2000) used the theory of planned behaviour (TPB) and innovation diffusion while Shih and Fang (2004) used the decomposed TPB model based on the diffusion of innovation theory to discuss consumer intention to adopt e-banking. Chang (2004) found that the adoption of e-banking is

influenced by gender, age, marital status and the degree of exposure to e-banking as well as by the characteristics of the bank.

### 3. METHODOLOGY

The data for this research was collected between January and April 2004. In the first section, we evaluate the electronic banking websites and services offered by local banks. It is not our intention to make comparisons between local and foreign banks in this paper, as foreign banks are set to be the subject of a future study. We adopted the model used by Chung and Payter (2002) who evaluated the websites of New Zealand banks. According to them the websites can be used to study the effectiveness, functionalities and Internet strategies of these banks. The evaluation instrument consists of 32 elements (Table 1). The evaluator is required to record the absence or presence of each element.

**Table 1: Evaluation of Website**

<i>Components</i>	<i>Elements</i>
Information	Company Information Customer Information Product Information
Legal Statement	Legal disclaimer/ Terms and Conditions Privacy policy Security policy
Order	Check account balance Transfer funds between accounts Check bank statement Purchase bank product (e.g. open an account) Download account information Make payment Order cheque or deposit book Request loan changes Cheque reconciliation Make IRD payment Change password After sales services (e.g. email enquires)
Ease of use	Frequent Asked Question (FAQ) Tutorial/Demonstration Search function
Ease of use	Help function Navigation menu/buttons
Aesthetic effects	Graphics Animations
Performance	Update frequency (daily) Response time (within 5 seconds) Download time (within 10 seconds) Technical problems
Others	Innovation features Competitions or rewards Community contribution

**Source:** Chung and Payter (2002).

In the second part of the study, a survey was conducted to obtain customer perspectives of electronic banking in Malaysia. The items in the questionnaire were

developed based on the studies of Chang (2004), Shih and Fang (2004), Al Sabbagh and Molla (2004) and Singh and Malhotra (2004) among others. The questions included: how frequently the respondents used e-banking services; the types of banking products and services that they currently use; where they conducted their e-banking activities; how long they had been using e-banking and who motivated them to use it.

In the third part of the study, a 5 point Likert-scale design was used to collect data from respondents with respect to their perceptions of the usefulness of e-banking as well as their perceptions on e-banking in general. They were also required to fill in their demographics such as gender, age, marital status, ethnicity, job level, gross personal income and education level. Previous studies by Chang (2004), Shih and Fang (2004), Al Sabbagh and Molla (2004) and Singh (2004) did not include ethnicity, however it was included here as Malaysia is a multi-racial country and differences in the adoption patterns along ethnic lines may be of interest.

Data was collected through self-administered questionnaires distributed during an Information Technology exhibition held at a shopping mall in the Klang Valley on a weekend in early 2004. Convenient, non-probability sampling was chosen in lieu of probability sampling due to time and resources limitations. In order to ensure a positive response from each person approached to fill out the questionnaire, a token was given as an incentive. Six hundred questionnaires were filled in, of which 542 questionnaires were usable. The others were found to be incomplete.

## **4. FINDINGS**

### **4.1 Evaluation of Bank Websites**

The results of the evaluation are discussed in detail in the following paragraphs. The presence and absence of each element was checked against information published on the bank websites, specifically on the site maps that list what is available. The “demo” option provided by the banks was also useful for evaluating of the presence and absence of specific elements as the authors were able to experience on-line the facilities provided. As this was meant to be purely a website evaluation, no contact was made with the bank for additional information.

The evaluation was carried out in April 2004. The score for each bank was calculated in percentage terms by dividing the total number of elements present by the maximum score of 32. The scores provide an indication of the performance differences that exist among the ten anchor banks and also denote the e-banking capabilities/offerings of each bank (Table 2).

Our findings appear consistent with those of Balachandher, Shanmugam, Alam and Perera, (2003). Using a model similar to the model proposed by Diniz (1998), they found that most of the Malaysian banks offering e-banking facilities had high overall scores, indicating that their websites were of high quality at all three functional and interactivity levels.

All of the ten anchor banks in Malaysia scored full marks on the information components. At the time of study, only two banks, Alliance Bank and Southern Bank were equipped to allow customers to download account information. None of the banks provided the facility to make tax payments to the Inland Revenue Department (IRD) via e-banking. Surprising, only three banks, Perwira Affin Bank, Alliance Bank and Southern Bank provided a search function. Only Maybank, Alliance Bank and Southern Bank provided a help function and only Alliance Bank published community contribution information. Perwira Affin Bank and EON Bank scored zero in the order components. This mean that Perwira Affin Bank and EON Bank are not providing features that allow customers to check their account balances, transfer funds between accounts and make payments, just to name a few. Alliance Bank and Southern Bank scored full marks on the ease of use component, which requires the inclusion of frequently asked questions, tutorials/demonstrations for new

users, a help function and a navigation menu. EON Bank on the other hand, scored zero on all these components.

**Table 2: Website Evaluation Results**

Components	Elements	MBB	BCB	RHB	PBB	AMB	HLB	PAB	AB	SBB	EB
Information	Company Information	1	1	1	1	1	1	1	1	1	1
	Customer Information	1	1	1	1	1	1	1	1	1	1
	Product Information	1	1	1	1	1	1	1	1	1	1
Legal Statement	Legal Disclaimer/ Terms and Conditions	1	1	1	1	1	1	1	1	1	0
	Privacy policy	1	1	1	1	1	0	0	1	1	0
	Security policy	1	1	0	1	1	0	0	0	1	0
Order	Check account balance	1	1	1	1	1	1	0	1	1	0
	Transfer funds between accounts	1	1	1	1	1	1	0	1	1	0
	Check bank statement	1	1	0	1	1	1	0	1	1	0
	Purchase bank product (e.g. open an account)	1	0	1	1	0	0	0	1	1	0
	Download account information	0	0	0	0	0	0	0	1	1	0
	Make payment	1	1	1	1	1	1	0	1	1	0
	Order cheque or deposit book	1	0	1	1	1	1	0	1	0	0
	Request loan changes	0	0	0	0	0	0	0	0	0	0
	Cheque reconciliation/Stop cheque	1	0	1	1	1	1	0	1	0	0
	Make IRD payment	0	0	0	0	0	0	0	0	0	0
	Change password	1	1	1	1	0	1	0	1	1	0
	After sales services (e.g. email enquires)	1	1	1	1	0	1	0	1	1	0
	Ease of use	Frequent Asked Question (FAQ)	1	1	1	0	1	1	0	1	1
Tutorial/Demonstration		1	0	1	1	1	1	0	1	1	0
Search function		0	0	0	0	1	0	1	1	1	0
Help function		1	0	0	0	0	0	0	1	1	0
Navigation menu/buttons		1	1	1	1	1	1	1	1	1	0
Aesthetic effects	Graphics	1	1	1	1	1	1	1	1	1	1
	Animations	1	0	1	1	1	1	0	1	0	1
Performance	Update frequency (daily)	1	1	1	1	1	1	1	1	1	1
	Response time (within 5 seconds)	1	1	1	1	1	1	1	1	1	1
	Download time (within 10 seconds)	1	1	1	1	1	1	1	1	1	1
	Technical problems	1	0	1	1	1	1	1	1	1	0
Others	Innovation features	1	1	1	1	1	1	0	1	1	0
	Competitions or rewards	1	0	1	1	0	0	0	1	1	0
	Community contribution	0	0	0	0	0	0	0	1	0	0
<b>Total Number of presence</b>		<b>27</b>	<b>19</b>	<b>24</b>	<b>25</b>	<b>23</b>	<b>22</b>	<b>11</b>	<b>28</b>	<b>26</b>	<b>8</b>
<b>Score for each bank in percentage (5)</b>		<b>84.4</b>	<b>59.4</b>	<b>75.0</b>	<b>78.1</b>	<b>71.9</b>	<b>68.8</b>	<b>34.4</b>	<b>87.5</b>	<b>81.3</b>	<b>25.0</b>

#### 4.2 Demographic Profile of Respondents

There were more female respondents compared to males and a majority of them were between 26 and 45 years old. Single persons of Chinese ethnicity made up a large proportion of the respondents. Most were tertiary educated and about 60 percent earned more than RM3000 a month. Please refer to Table 3 for details.

#### 4.3 E-Banking Usage

53.9 percent of those surveyed used e-banking. 292 of the 542 respondents went online to conduct banking transactions, compared to 250 who went to bank counters or ATM machines to bank the conventional way.

Out of the 53.9 percent who used e-banking, 85 percent used the saving account facility and 55.8 percent use the current account facility. The next most popular items were bill payments (37 percent), follow by visa/master cards with (35.3 percent) and third party fund transfers (30.8 percent) (Table 4).

**Table 3: Demographic Profile of Respondents**

Profile	Category	Frequency	%
Gender	Male	254	46.9
	Female	288	53.1
Age	Below 25 years old	144	26.5
	26 – 35 years old	212	39.1
	36 – 45 year old	119	22
	46 – 55 year old	41	7.6
	56 and above	26	4.8
Ethnic group	Malay	162	29.9
	Chinese	329	60.7
	Indian	45	8.3
	Others	6	1.1
Marital status	Single	341	62.9
	Married with children	133	24.5
	Married without children	66	12.2
	Divorced	2	0.4
Education Level	Master degree	57	10.5
	Degree	255	47
	Diploma	128	23.6
	Secondary/Primary	102	18.9
Income	Less than RM3000	219	40.4
	RM3001 to RM6000	180	33.2
	RM6001 and above	45	8.3
	Not applicable	98	18.1
Job Level	Top management	185	34.1
	Middle management	104	19.2
	Lower management	87	16.1
	Non managerial	166	30.6

**Table 4: Banking Products Currently Being Used**

Products/Services	Used		Not used	
	number	%	number	%
Savings account	249	85.3	43	14.7
Current account	163	55.8	429	44.2
Fixed deposit	77	26.4	215	73.6
Personal loan	21	7.2	271	92.8
Car/hose loan	87	29.8	205	70.2
Phone banking	51	17.5	241	82.5
Third party transfer	90	30.8	202	69.2
Overdraft account	10	3.4	282	96.6
Housing mortgage	43	14.7	249	85.3
Personal investment	50	17.1	242	82.9
Unit trust	50	17.1	242	82.9
Pay bills	108	37	184	63
PC banking	44	15.1	248	84.9
Visa/Master card	103	35.3	189	64.7

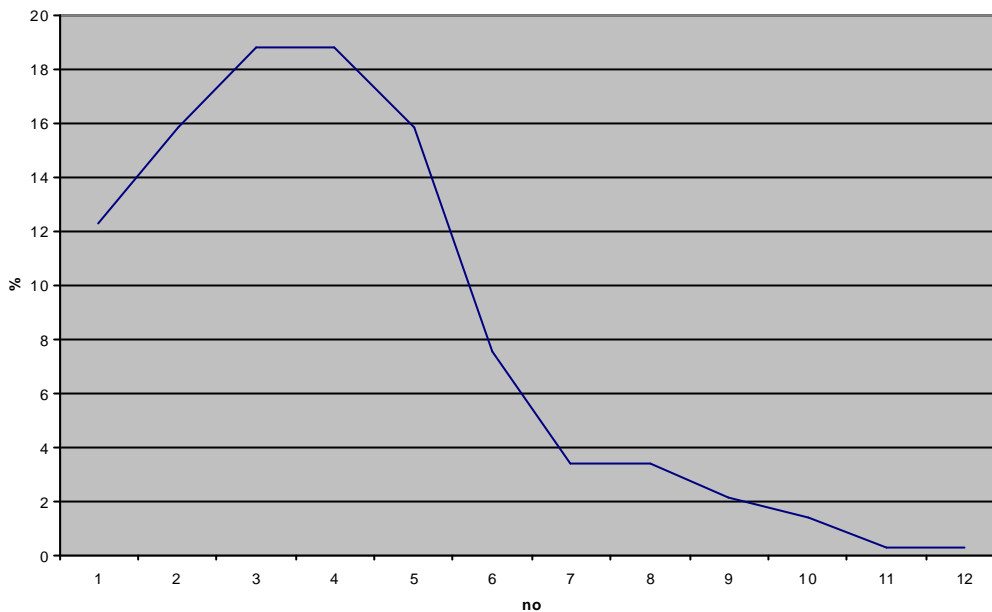
Among the e-banking products and services (Table 5), account balance inquiry was rated most useful by e-banking adopters. It had a mean of 3.07. The next in the line was the saving account with a mean of 3.06, follow by the current account with a mean of 2.99. The transaction summary report had a mean score of 2.98; electronic bill payments, 2.97; fund transfer, 2.93; credit card services, 2.87; cheque services, 2.78; fixed deposit, 2.70. Unit trust related services were ranked the lowest in terms of usefulness with a mean of just 2.40. The figures indicate that while most respondents find e-banking useful for basic banking services such as balance inquiry and saving accounts facility, They do not find services related to the purchase or monitoring of unit trusts and home mortgages useful. This may be because for these services, respondents prefer to receive face to face advice and consultation. This view is substantiated by the data from Table 4.

**Table 5: Usefulness of Banking Products/Services: Mean Scores**

No		Mean
1.	Saving account	3.06
2.	Current account	2.99
3.	Fixed deposit	2.70
4.	Balance inquiry	3.07
5.	Summary report of transaction	2.98
6.	Cheque services	2.78
7.	Funds transfer	2.93
8.	Electronic bill payments	2.97
9.	Credit card	2.87
10	Online insurance	2.58
11	Financial planning and analysis	2.51
12	Personal investment	2.46
13	Unit trust	2.40
14	Stock information	2.57
15	Market information	2.56
16	Personal loan	2.44
17	Car/house loan	2.53
18	Housing Mortgage	2.45

From Figure 1, it is apparent that about twelve percent of the adopters used one e-banking product while less than one percent used 12 e-banking products and no one used more than 12 products. Using the total number of products used among the respondents, we statistically categorised them into three groups using percentiles. It was illustrated that those using 3 products and below are considered as low users, those using 4 to 6 products are medium users while those using 7 e-banking products and above are considered as high users. From Figure 1, it can be seen that the majority of adopters in Malaysia (in this study) can be categorised as medium users.

Figure 1: Total Number of e-banking products used



The e-banking adopters' perceptions of e-banking appear to be very favourable (Table 6). On the whole, it can be seen that the adopters perceived e-banking to be useful, easy and better way to conduct banking transactions than more conventional means. The results also indicate that e-banking transactions do not require a lot of physical or mental effort. Still, some people remain concerned about the security of the transactions. Banks perhaps should be more aggressive in assuring their customers that it is safe to conduct banking transactions electronically.

Table 6: Perceptions of E-banking

Items	Mean scores
Easy to conduct banking transactions	5.35
Greater control over finances	4.99
Able to manage finances more effectively and efficiently	5.15
Convenient way to manage finance	5.20
Useful for managing financial resources	4.97
Compatible with my lifestyle	5.08
Fits well with the way to manage finance	4.98
Fits into working style	4.95
Requires mental effort	4.14
Can be frustrating	4.30
Confident over security aspect	4.39
Concern information will be known to others	4.57
Faster Internet access speed	4.81

#### 4.4 Characteristics of E-banking Adopters

The adopters' e-banking activities are illustrated in Table 7. A large percentage of the adopters actually conduct their e-banking activities from their homes (47.3 percent) and offices (46.6 percent). Only 3.4 percent used Internet cafés while the remainder conduct their e-banking transactions from public libraries and community centres. 49 percent of the adopters have been using e-banking for between six months to two years. Nearly thirty seven

percent of the adopters do not conduct e-banking transactions with fixed regularity, using it as and when they find it necessary to do so. Further analysis showed that they do so to pay utility bills. 26 percent reported carrying out e-banking everyday while 24 percent used it once a week. Colleagues, friends and peers seem to be the main influence for e-banking adoption (53 percent) followed by family (18 percent) and advertisements (17 percent).

**Table 7: E-banking Activities of Adopters**

Items	Description	Freq (n=292)	Percentage
Access	Home	138	47.3
	Office	136	46.6
	Internet Café	10	3.4
	Others	8	2.7
Duration	Less than 6 months	94	32.2
	6 months to 1 year	71	24.3
	1.1 year – 2 years	72	24.7
	2.1 year – 3 years	34	11.6
	more than 3 years	21	7.2
Frequency	Every day	77	26.4
	Once a week	71	24.3
	Once a month	37	12.7
	When necessary	107	36.6
Influence	Family	51	17.5
	Friends/colleagues/peers	155	53
	Advertisements	49	16.8
	Others	37	12.7

The relationship (Table 8) between adopters and their demographic profile (gender, age, marital status, ethnic group, job level, education and salary) was tabulated and subjected to the Pearson's Chi-square test. The study found that no significant relationship between the use of e-banking and gender, marital status, ethnic group or education. However, age, job level and salary were found to have significant associations with e-banking. This implies that there are higher levels of adoption among younger persons, persons with higher salaries and those holding higher positions.

**Table 8: Relationship Between E-banking Adopters and Demographic Variables**

Relationship	Value	Asymp sig.	Significant.
e-banking and gender	1.528	0.216	No
e-banking and age	12.535	0.014	Yes
e-banking and marital status	3.177	0.365	No
e-banking and ethnic group	5.353	0.148	No
e-banking and level of education	0.606	0.895	No
e-banking and monthly gross income	6.580	0.087	Yes
e-banking and job level	9.542	0.023	Yes

## 5. CONCLUSIONS

It can be concluded here that the adopters perceive e-banking to be an easy and convenient way to conduct banking transactions. Most users studied claimed that it fits in with their lifestyles. The study has illustrated that e-banking adopters carry out their e-banking transactions either from their homes or offices and that most users have used e-banking for between six months to two years. It was also found that nearly thirty seven percent of the

adopters used e-banking only when necessary and fifty three percent of them were influenced to adopt e-banking by friends/colleagues/peers. This study also discovered that age, income and positions held influenced e-banking adoption. There are higher levels of adoption among younger persons, persons with higher salaries and those holding higher positions.

Despite the high percentage of ebanking adopters in this study, not everyone in Malaysia is ready and willing to do every banking transaction electronically. Customers may value the assurance of personal contact with a teller over time and location related conveniences. The study has illustrated that many e-banking adopters use the basic banking facilities such as balance inquiries, saving and current account facilities and view summaries of report transactions. Only a small percentage uses other facilities such as the personal investment, loan and housing mortgage related services. This perhaps because the respondents feel that these require more measured decision making and the reassurance of face to face interaction. It can be concluded here that when advice and measured decision making is involved, e-banking should give way to more traditional banking means.

The findings of this research however cannot be generalized to the general population as a convenient sample was used, and the respondents were of a specific group, mainly people who made the effort to attend an IT fair. Nevertheless, the results provide a fair indication of what services e-banking users find useful and which groups are more likely to use the service. The authors also realise that it is important to see how far ahead or behind, the ten-anchor bank compare to foreign banks in the e-banking capability and offering. The e-banking capabilities and offerings of foreign banks were not accessed, thus rendering the web evaluation incomprehensive and disallowing a meaningful comparison between local and foreign banks. Future research should incorporate foreign banks. In addition, besides evaluating the websites, interviews with banks should also be included which would allow us to get details about each facility and the services on offer.

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