CHAPTER 2
LITERATURE REVIEW

Electronic commerce is relatively new concept brought about only in the early 1990’s when the Internet as a universal medium started to emerge. The actual implementation began in mid 1990’s in developed countries like United States and Europe. Therefore, very few academic researches had been done particularly on electronic banking. In Malaysia, Teoh (1998) surveyed banks’ customers to compare cyber-banking and traditional banking users. In his study, he found that cyber-banking users were generally Chinese males below the age of thirty and still single or just married. They were privately employed with either a diploma or a degree and earning between RM3,000 to RM6,999. Most of the cyber-banking users were phone banking users but none from Internet banking. In the survey, Teoh also found that his respondents had used cyber-banking mainly for cash withdrawals, balance enquiries, interest rate enquiries, request cheque books and payment of bills. The respondents revealed that cyber-banking services were innovative, time-saving and efficient, but the non-users said that it was difficult to use, uncomfortable and no human attention was given.

2.1 DEFINING ELECTRONIC BANKING

The definition of electronic banking changes over time with technology unfolding new delivery channels for retail banking. Broadly speaking, electronic banking is a new way of doing banking business electronically without the presence of physical buildings. Banking services are provided to customers at their own convenience of time and location. A customer could practically do all the banking transaction 24-hour a day, well beyond the traditional banking hours. Also, banking services are obtainable at any place from Automated Teller Machines (ATMs) to the comfort of his home or office using telephones or personal computer.
According to Lewis Levin, General Manager at Microsoft Corporation, "Direct banking includes access channels such as phones, PCs, ATMs and kiosks, the Internet and anything else that does not involve interacting face-to-face with a person at a branch" (Klinkerman, 1996). Similarly, Allen (1996) elaborated further that the concept of a virtual bank will include delivery over open networks such as telephone lines or the Internet via consumer electronic such as PCs, interactive TVs, screen-based telephones and personal digital assistants like the Apple Newton and Sony Magic Link.

The Basle Committee on Banking Supervision provided a formal definition where electronic banking referred to the provision of retail and small value banking products and services through electronic channels (Basle, 1998). It explained that the common delivery channels where customers could gain access include “closed” and “open” networks. A closed networks restrict access to limited participants like financial institutions, consumers, merchants and third party service providers who are bonded by agreements on the term of membership. On the other hand, open networks provide electronic banking products and services through point-of-sale terminal, ATMs, telephone, personal computer, smart cards and other devices. This study will be focusing on ATMs, phone and PC banking in the open networks.

2.2 ELECTRONIC BANKING MEDIA

There are three main electronic delivery channels that are operating from a centralised database containing complete customer-relationship profile, namely the ATMs, telephone centre and home banking from personal computer (Redecki et. al., 1997).

2.2.1 Telephone Centre

A phone centre is a centralised customer service department that receives incoming call but may also make out-going sales calls. When a customer calls in, it will first reach an automated response system that utilises Automated Voice Response
(AVR) technology, but the customer can have a call routed to a service representative. The personalised voice will guide the users through their transaction step by step (Kasim, 1994). Most banks would keep the phone centre open 24 hours a day and in all cases, the phone banking hour is extended well beyond conventional banking hours.

The automated part of phone centre is designed to handle enquiries (account balances, interest rate and foreign exchange rate), service requests (stop payment instructions and request for cheque book) and simple transactions (funds transfer, credit card payment or other payment). The representative on duty handles more complicated request; opens new account and may even take loan application.

2.2.2 Automated Teller Machines (ATMs)

Basically there are three models of ATMs. The lobby unit consists of a box-like structure bolted to the floor and is installed conveniently within the premises of banks, supermarkets, office complexes and shopping centres. The wall ATM is specially designed for installation through the wall, usually located at the bank’s branches. Whereas the drive-up ATM, although is similar to the wall unit, is to enable a cardholder to perform his banking transactions without getting out of his car (Pang, 1993).

The current generation of ATMs performs the same functions as an automated phone centre but with additional features of cash withdrawal, passbook update and cheque or cash deposit. Ernst & Young (1994) reported that Bay Banks’ ATMs in United States could even sell interim deposit product statement, stamps, transit passes, casino script and tickets. Just like in Malaysia, Maybank’s Kawanku ATMs can be used to pay for Malaysia Airlines’ ticket using the MAS Electronic Ticketing (MASET) facility. However, the customer has to confirm the booking first with the MAS reservation office.
2.2.3 PC Banking

In addition to ATM and phone banking, customers are given a third electronic option, that is banking at home or office via a personal computer equipped with Internet and smart card facilities. The customer can then check balances or credit card activity, transfer funds or pay bills and all other functions available from a phone centre. On top of that, PC banking allows access a stock exchange in real time to make any shares transaction. Thus, PC banking is generally thought to have more long-run potential than phone banking or ATMs because it has more powerful bill-paying capabilities (Radecki et. al., 1997).

2.3 IMPORTANCE OF ELECTRONIC BANKING

The growing importance of electronic banking is driven by banks’ interest in lowering costs to serve their customers, new competitive pressures and increasing consumer acceptance (Magherio, 1997).

2.3.1 Lowering Operating Costs

Banks are seeking new ways to reduce their operating expenses by substituting the physical service points of branches with toll-free numbers and online banking services. Booz-Allen & Hamilton (1996) found out that online or PC banking services is a less expensive way to serve customers than any other form of banking. The study estimated that it costs about a penny to conduct a banking transaction using the Internet and more than a dollar, if a teller at a branch bank handles it. Comparatively speaking, an ATM transaction will cost about 27 cents and a phone banking transaction about 52 cents.

The profitability question is substantially a technological question. U.S. banks like Wells Fargo and First Chicago were pushing the edge of technology by closing traditional branches and instituting fees for teller services. Both banks that had acted on the assumption that automation is central to profitability (O’Sullivan, 1997)
claimed success. Canadian Imperial Bank of Commerce was also redefining the branch so that 15 years from today, it will not be a transaction centre but a forum for advising and bonding with top-tier clients.

Furthermore, a branch bank can serve as many customers as it has staff to handle. On the Internet, it can handle as few as one customer enquiry to hundreds of thousand a day without any additional expenses. Therefore, banks see the Internet as one more remote service they can offer to customers who may want to bank that way. To date, it has not reached the critical mass to impact banks' operating expenses but expectations of the early adopters is that it will. James Culberson (1996), President of the American Bankers Association, forecasted the transactions through bank branches would decline by nearly one third by 1998, as nearly half of all banking transactions in 1996 did not require human interaction.

2.3.2 New Services

Today's PC banking allows customers to check balances, transfer funds and update customers information, transactions that can already be performed through traditional banking channels. For some customers, the convenience of banking from home or office is preferable to calling the bank’s automated phone service or going to a branch bank. Others do not find the services offered online today attractive enough to change their banking habits. In the future, bank analysts expect the Internet banking will be enhanced with new services that make online banking easier and more convenient than banking by ATMs, by phone or visiting a bank. Paying bills electronically is one such example.

For a business, preparing and sending paper bills can be costly. For a consumer, paying bills by cheque can take much time. According to IBM's analysis, handling paper bills and cheques can cost between USD1.65 to USD2.70 each time a vendor sends out a bill. However, Internet-based bill payment services take some of the paperwork out of the process as customers can authorise his bank to transmit payment on his behalf. Rosemblum (1996), a Senior Vice President and Director of Research at the Federal Reserves of Dallas, confirmed that it costs about 2.5 cents
to process a paper cheque compared to only 1.4 cents to process an electronic deposit in 1994. The biggest potential savings are in postage and handling costs. He continued that electronic networks generally have significant economies of scale, that is to say, the unit cost of each electronic payment continually decline as network volume increases.

Some banks believe that future Web-based bill payment services can make the entire process paperless, as Rosenblum (1996) called it a "cashless and chequeless society." For example, the vendor will send an electronic bill and the customer will then electronically authorise the bank to pay the bill. Later, the bank will debit the customer’s account and pay the vendor electronically. Hence, the vendor’s printing and mailing costs are eliminated and processing costs are greatly reduced. The customer enjoys the convenience of paying bills without having to keep stamps and envelopes on hand. The customer also saves time from balancing his cheque book as his account is now automatically updated.

2.3.3 Changing Customer Demands and Competitive Pressure

Based on recent trends, personal assets have flown dramatically out of banks and into asset management companies. Ernst & Young (1997) reported that in 1976, banks held 25 percent of the USD2 trillion market of invested household assets in the United States but today, their share had been cut out nearly by half to just 13 percent. Such transfer is due to higher yielding investments from mutual funds companies that draw customer deposits out of the bank’s vault (Hoffman, 1997).

Similar pattern was replicated in the United Kingdom where Gandy & Brierley (1997) found that banks’ shares of the total market for financial assets had shrunk from 70 percent to 30 percent since technological revolution. They continued that the banks had only been saved by the fact that the market had expanded considerably. Being pushed by fear of losing market share to non-bank competitors, banks are now moving rapidly into partnerships with technology provider to sign up online customers (Hinde, 1997).
To compete for customers' assets, banks have expanded the variety of products and services they offer. In addition to credit card and lending products, some banks' Web-sites market insurance products, mutual funds and may offer financial advice. In these instances, the customer clicks a button that links the bank's site to another legal entity affiliated with the bank. Bank of America, for example, offers retail customers basic banking products and services, along with mutual funds and other investment products through BA Investment Services. Hence, the Web customer does not focus on the boundaries between the different companies providing the services, rather he sees a one-stop shop for financial services.

Moreover, by combining the banks offering with online financial management tools like Intuit's Quicken or Microsoft's Money, the Web customer can do all his budgeting, pay the bills and manage his assets without leaving a Web-site. Bankers taking long term view said online banking could help them identify and cross sell products to their most profitable customers more effectively than in the past (Hoffman, 1997).

"The greater amount a site can be tailored to individual needs, the more likely that consumers will embrace the service," noted a study titled “Online Banking: Beyond the PC and into the Home” by The Yankee Group, Boston (Orenstein, 1998). "A bank that keeps abreast of the personal lifestyle changes of its account holders," the Yankee report said, "can turn its customers into dynamic users of its services, and in turn, profit from their migration upstream to services with greater margins."

Hence, in the Internet banking game, banks should aim to establish themselves as regular up-dated, one-stop banking centre.

2.3.4 Consumer Acceptance

Banks are finding that just because they offer a new service, it does not mean that customers react in the way that the bank would like it to be. In other words, banks are moving from a higher cost distribution channels to a lower cost channel. Surprisingly, customers actually transact more with a bank. According to a senior official at Boston Bank, "Instead of just going to a branch four times a month, now
they go to the branch twice but also go to the ATM six times, call the phone centre twice and do PC banking three nights a week” (Redman, 1997).

Recently, banks have begun aggressively marketing lower cost delivery channels like ATMs, phone and PC banking to encourage customers to change their behaviour. This is because banks have discovered that its most profitable customers do not mind self-service and that tellers were the most expensive way for the banks’ current account. Some banks considered the move as “PR suicide” but First Chicago seems to generate positive results. The bank had reported only a loss of less than one percent of customers and not 10 percent as others predicted (O'Sullivan, 1997).

How quickly people will take to doing more of their banking transactions online will depend on their comfort with technology and how much the bank promotes it. Also, they feel whether that online banking offers an advantage in terms of convenience, additional services or lower price and how easy it is to do it (Magherio, 1997). In July 1997, a survey conducted by Intuit over 800,000 of its customers found out that people bank online because of convenience, keeping up to date with or balancing their accounts and the integration of Intuit’s Quicken. The most significant reason given by customers who were not banking online was that their financial institution did not offer the service. Banking fees and security concerns were also raised.

It is therefore, the responsibility of financial institutions to capitalise on the alternative delivery channels like ATMs, phone and PC banking to reach the various segmented markets based on their individual needs. The success rate to move from traditional banking to electronic banking is very much dependent on consumer acceptance. If the industry takes the time to educate consumers and merchants about the benefits and reliability of electronic banking and its payment ability, then they will try it in greater numbers and begin to trust it. Getting customers to change their habits and preferences is hard work but Intuit’s Chairman believes that bringing the customers in direct contact with financial information by providing easy, online access will persuade many to adopt electronic banking (Lian, 1996).
2.3.5 The Future

Online banking today merely duplicates what can be done through other channels. The market is expected to grow at the point when online service is seen as providing an advantage to traditional channels. The ability to pay bills electronically may be enough of a time saving to customers to encourage more of them to bank online. Others may be drawn in by personalised advice and information, online trading services or the convenience of accessing and seeing their updated account balances and activity presented in a single place.

The more customers become aware of the benefits of online banking and the more they understand about how it works, the more people will use it. Mathieson (1997) stated that many consumers did not know that their financial institutions provide online banking, how much it costs and what precautions were being made to ensure secure transaction. Hence, the greater the consumer awareness, the faster online banking will grow.

2.4 ELECTRONIC BANKING IN MALAYSIA

Electronic banking in Malaysia, particularly phone and PC or online banking is relatively new and it is only at the infant stage of implementation. Fortunately, the introduction of the first ATM in Malaysia in 1981 (Pang, 1993) has paved the way for this modern concept of virtual bank which became increasingly popular with the convenience-seeking customers and the cost-conscious bankers in the last decade.

Phone banking is in its own right a virtual bank. Customers are able to conduct simple banking transactions over the telephone without stepping into the bank. The next step for Malaysian is to do banking activities over the Internet regardless of physical or geographical location.

At present, there are only twelve banks in Malaysia offering phone and/or PC banking services. Most of them are major players in the banking sector.
<table>
<thead>
<tr>
<th>Electronic Bank</th>
<th>Phone Banking</th>
<th>PC Banking</th>
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<tbody>
<tr>
<td>1. Arab-Malaysian Bank Bhd</td>
<td>AM Direct</td>
<td>AM Net</td>
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<tr>
<td>2. BSN Commercial Bank Bhd</td>
<td>Phone-In</td>
<td>N/A</td>
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<tr>
<td>3. Citibank Bhd</td>
<td>CitiPhone Banking</td>
<td>N/A</td>
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<tr>
<td>4. Hongkong Bank M’sia Bhd</td>
<td>HKB Phone Banking</td>
<td>N/A</td>
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<td>5. Hong Leong Bank Bhd</td>
<td>N/A</td>
<td>Bank@Home</td>
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<tr>
<td>6. Malayan Banking Bhd</td>
<td>Autophone</td>
<td>Kawanku Online</td>
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<td>7. Multi-Purpose Bank Bhd</td>
<td>N/A</td>
<td>Multi-Link</td>
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<tr>
<td>8. Pacific Bank Bhd</td>
<td>Excel Phone</td>
<td>Excel Touch</td>
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<tr>
<td>9. Phileo Allied Bank Bhd</td>
<td>PAL Phone</td>
<td>PAL World</td>
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<tr>
<td>10. RHB Bank Bhd</td>
<td>RHB Telebanking</td>
<td>RHB Online</td>
</tr>
<tr>
<td>11. Southern Bank Bhd</td>
<td>Direct Access</td>
<td>PC Banking</td>
</tr>
<tr>
<td>12. Standard Chartered Bank Bhd</td>
<td>BankLine 8888</td>
<td>N/A</td>
</tr>
</tbody>
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Source: Telephone interviews, banks’ pamphlets and advertisements.

Note: N/A is “not available”

From the table above, we can identify certain trend among the players in electronic banking services. First, all the three foreign banks in Malaysia like Citibank, Hongkong Bank and Standard Chartered Bank offer only phone banking services to their retail customers and not the PC banking services. According to a senior Branch Manager, the reason is because these banks had invested heavily in phone banking services during the early stage of electronic banking in which the technology for PC banking was not as sophisticated as today. That is why they continue with the phone banking services but they are also considering PC banking facilities for Malaysian as the foreign branches in United States and Europe are already providing these services.

Secondly, new local players like the Hong Leong Bank and Multi-Purpose Bank that have yet to invest in electronic banking facilities, had chosen PC banking to phone banking for their information technology investment. A senior Branch
Manager of Multi-Purpose Bank said that his bank was one of the newest players in electronic banking. The reason that they had chosen PC banking instead of phone banking in the late 1996 was because his bank believed that phone banking would be phased out soon whereas, PC banking investment will be a long-term investment for the future.

Furthermore, he emphasized that there was no need to invest in both technologies since PC banking could provide more services than phone banking such as shares dealing in real time and even disburse cash using the smart card technology in the near future. But he continued that the current market for PC banking was for the younger generation who were in their early thirties and below, although their marketing strategy catered to customers of all ages. This is because the younger generation is more receptive of new technology whilst the older generation could not easily change their mindset as they are generally more comfortable with the traditional banking services.

Thirdly, all local banks in general have realised the importance of electronic banking facilities and they had begun to offer both services in the last two years. The major local players like Malayan Banking and RHB Bank have already invested in both phone banking and PC banking facilities (Morais ed., 1997). The Arab-Malaysian Bank has also launched its AM Direct and AM Net this year. The most recent player of PC banking services was Pacific Bank that had just launched the "Excel Touch" product during the Microfest '98 in Putra World Trade Centre. A Customer Service Officer of Pacific Bank had informed that many other local banks would be offering such services in the near future.

The most disappointing finding is that Bank Bumiputera Malaysia Berhad and Public Bank Berhad, two of the top five banks in Malaysia, have neither the phone nor PC banking facilities. According to a Senior Officer of BBMB, her bank has often been a late majority in adopting new technology. A Public Bank Officer explained that his bank had recently invested on a new computer system to be installed throughout all branches nationwide to tackle the Millenium Bug or Y2K problem and that was why the bank was postponing its electronic banking investment.
One good example of a local bank that has taken bold steps to be ahead in electronic banking services is none other than Phileo Allied Bank, which has won the heart of customers as the most innovative bank in Malaysia (Wong, 1998). Phileo Allied Bank has first launched its PAL Virtual services in June 1997. To date, it has PAL Virtual Kiosks in three locations situated at high traffic areas in the Klang Valley such as The Mines Shopping Fair (June 1997), Bangsar Baru (March 1998) and 1 Utama Shopping Centre (May 1998).

According to Phileo Allied Bank, PAL Virtual Kiosk is an electronic banking kiosk that allows customers to conduct banking, investing and other transactions via a number of electronic delivery channels. The normal ATMs will often allow customers to do only withdrawals, deposits, balance enquiries and some account to account transfer. With PAL Virtual Kiosk, a customer would be able to do practically everything he can in a bank without the hassle of long queues while having the flexibility of 24-hour banking services. Hence, the customer will have total control over his account and the way he prefer to do his banking activities.

For the customers, the benefits are in term of convenience and savings in time and cost:

- It is a one-stop centre for customers to conduct a wide range of banking and investing transactions.
- It is located at high pedestrian traffic areas such as shopping malls in which its operating hours for the kiosks are extended beyond normal banking hours. In other words, there is no need to queue and avoiding traffic jams or parking problems.
- It is also able to conduct transactions with immediate assistance of a customer service officer via video conferencing using PAL Teller service, without being physically present and queuing up at a branch.

The other electronic delivery channels offered by Phileo Allied Bank at the PAL Virtual Kiosk includes PAL Point (ATM), PAL Phone (phone banking service) and PAL World (PC banking). The PC-based online service offers banking, investing,
news and information, insurance, utility bills payment and even provide a platform for electronic commerce namely, travel services, home shopping and communication services.

Looking from another perspective, the bank also derives benefits from utilising the kiosk. PAL Virtual Kiosk employs a self-service concept and is manned by only one staff who provides assistance, information and undertakes cross selling. Thus, it is cost effective to operate a kiosk compared to a traditional branch in the long run. A management consultant of Andersen Consulting Malaysia estimated the cost of servicing customers through direct banking channels to be 90 percent lower than traditional branch banking (Hoi, 1997).

This is because a traditional branch requires higher investments in its physical set-up and staff requirements. Such investment in bricks-and-mortar has driven up cost per income ratio but does not always fully provide customers with what they want, where and when they want it. Hoi (1997) also estimated that a branch could cost approximately half a million ringgit to set up. Therefore, with a kiosk, the savings are passed on to the customers in a form of higher savings rate or lower service charges.

Technology plays a central role in the development and enhancement of the bank's products and services. Phileo Allied Bank has utilised information technology to innovatively develop alternative delivery channels to make its banking and investing products more accessible, so customers are not limited to the bank's branches to conduct their transactions or obtain financial services. Although Phileo Allied Bank currently has only 27 branches nationwide, its services can reach people now in a more efficient manner than if it simply had branches. As a result of a good response to PAL Virtual Kiosk, the number of users has been increasing (Wong, 1998). More and more Malaysians are beginning to realise the convenience and easy accessibility to the bank's products and services.

Despite much publicity about the importance of electronic banking, Hoi (1997) concluded that the traditional branch in Malaysia would continue to be important, as
it was a physical manifestation of the customers' assets. Branch banking further provides for the emotional buyer the value of "security" which is still very essential to the local customers. Moreover, the branch's tangible presence reassures customers that their money is safe in the hands of the bankers. She continued that bank branch offered proximity to the customers and was an effective avenue to making and taking deposits especially in large amount. For the bankers, a physical branch provides a base from which marketing and sales activities in a geographical area can be coordinated. Hence, there is no doubt that the branch network is here to stay in the future.