This Research Paper has identified some barriers to mobile internet banking service adoption in the Klang Valley of Malaysia. It is basically a study on all the banks present in the eight municipalities of Klang Valley of Malaysia. The study was carried out to study some of the main barriers that can exist while adopting to the mobile internet banking services.

BARRIERS TO MOBILE INTERNET BANKING SERVICE ADOPTION

AN EMPIRICAL STUDY IN KLANG VALLEY OF MALAYSIA

Presented To: Prof. Dr. Eduard Heindl

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Declaration

I, Muhammad Abubakar Anwar, Matriculation No. 241016, hereby declare that this term paper has been completed by me and I have not used the help of anyone while writing the paper. The original research paper was written by “Chavidi Naga Sivanand - Multimedia University, Malaysia”, “Mulabagula Geeta - Multimedia University, Malaysia” and “Suleep - Center for Professional Education and Development, Malaysia”. I have tried to explain their concept with my own understanding and also used some references from other related research papers, related to this topic. The aim of this term paper is to explain the different barriers to mobile internet banking service in Malaysia. I have used the same methodologies that were used in the original term paper and where ever I have used some external references, I have properly cited them in the term paper.

Dated: 18-06-2012

Signed: ______________

Muhammad Abubakar Anwar

Matriculation No. 241016

BCM SS 2012
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CHAPTER 1

1.1 Introduction:

Internet banking has helped customers any time access to their banks. The advantage of internet banking is that customers can check their account details, get their account statement, and perform various transactions while sitting in their homes or offices. Internet banking has limitations but the biggest of them is the requirement of a personal computer (PC) and internet availability. The basic advantage of Mobile Internet Banking is that it limits the requirement to just a mobile phone. Another advantage of mobile internet banking over the internet banking is that it allows anytime anywhere banking.

Mobile banking is usually defined as performing balance checks, account transactions, payments and other banking transactions through a mobile device. Ghosh and Swaminatha predicted that by the end of the year 2004 there will be over one billion wireless device users, 600 wireless internet subscribers and $200 billion mobile commerce market.

1.2 Mobile Commerce:

Ahead of Its Time, mobile phone users think that they would put together more purchases if the procedure was not so burdensome, products were easier to find and their devices supported secure credit card transactions. Web-enabled mobile phone users are much more probable to use their devices to get weather forecasts, read news, find movie times and bank online than to buy products. Some of other advantages are as following.

1.2.1 Advantages of Mobile Commerce:

- Providing wider reach
- Reducing transaction cost
- Streamline business processes
- Reducing time to order

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1 Mobile Banking-The future by Infogile Technologies August 2007
2 Barriers to Mobile Internet Banking Services Adoption: An empirical Study in Klang Valley of Malaysia by Chavidi, Mulabagula and Suleep, Page 2, October 2004
1.2.2 Mobile Commerce Disadvantages

E-commerce businesses searching for methods to engage its target market or expand its reach to a new market segment should look into mobile commerce, or M-commerce. Businesses that engage in mobile commerce sell goods or services through mobile devices. While there are many advantages to expanding into M-commerce, such as increasing sales and customer retention, there are some distinct disadvantages to consider.

**Speed of Delivery:** Mobile phones are more limited in terms of speed than computers; therefore, mobile websites must be optimized to ensure customer satisfaction. This means removing all images that are not vital, plus eliminating flash, scripts and plug-ins.

**Small Screen Size:** While businesses are used to formatting information for monitors, the average mobile phone screen is only 2 by 3 inches. This means that the business should reduce the amount of information presented, number of steps for checking out and ensure a maximum amount of background and text contrast.

**Security:** Cell phones are more commonly lost or stolen than laptops, so companies must ensure that the security of its customers are not compromised in case this occurs. This includes not storing sensitive information on their mobile devices, as well as making it fast and simple for them to change passwords. In addition, there are concerns about data encryption, protecting the wireless connection from unauthorized access, hackers and viruses.

### Chapter 2

2.1 Barriers to Mobile Internet Banking:

This research paper is written by Chavidi Nada Sivanand, Mulabagula Geeta and Suleep. They have selected the account holders of different banks in the Klang Valley of Malaysia and studied the perceived barriers to the adoption of mobile internet banking. The increase in the number of computer owned by consumers and the broadband availability has led to increase in the internet banking. Between the years 2005 to 2007 the number of household using Internet banking alone increased from 387300 to 651900. Birch and young in 1997 identified that financial services are going through lots of unprecedented changes, of which the most fast growing in the internet. Internet banking is a very important issue in retail banking as Bradley and Stewart indicated in their study in 2003.

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3. [Barriers to Mobile Internet Banking Services Adoption: An empirical Study in Klang Valley of Malaysia by Chavidi, Mulabagula and Suleep, Page 4, October 2004](#)


5. Central statistics Office CSO 2007

6. [Barriers to Mobile Internet Banking Services Adoption: An empirical Study in Klang Valley of Malaysia by Chavidi, Mulabagula and Suleep, Page 4, October 2004](#)
2.2 Keywords Defined:

There are lots of terminologies been used in the research paper. I will briefly describe them here.

2.2.1 Bricks and Clicks:

Bricks and clicks refer to a business which has a physical location and also an online presence. Bricks and clicks business model is very useful and has many advantages like customers can have a store and also selling the products and services over the web.\(^7\)

2.2.2 Technology Acceptance Model (TAM):

The technology acceptance model specifies the causal relationships between system design features, perceived usefulness, perceived ease of use, attitude toward using, and actual usage behaviour. Overall, the TAM provides an informative representation of the mechanisms by which design choices influence user acceptance, and should therefore be helpful in applied contexts for forecasting and evaluating user acceptance of information technology.\(^8\)

![Technology Acceptance Model](image)

*Figure 1: Technology Acceptance Model*\(^9\)

2.2.3 Wireless Internet via Mobile Devices:

Wireless internet via mobile devices (WIMD) has led the world into another spectrum of communication and conducting day to day business and life activities. Wireless internet is defined as the internet which is not connected by means of cables.

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7 Michael wolfe eHow contributor from the website www.ehow.com/info_7774613_bricksandclicks-business-model.html
2.2.4 Technology Acceptance Model for WIMD:

Lu et al developed a technology acceptance model for wireless internet via mobile devices. According to this TAM model for wireless internet, individual differences, technology complexity, facilitating conditions, social influences and wireless trust environment determines the user perceived short and long term usefulness and the ease of using WIMD. That in turn determines the user intention and the willingness to adopt WIMD\(^\text{10}\).

Figure 2: Technology Acceptance Model for WIMD\(^\text{11}\)

Chapter 3

3.1 Related Literature Review:

Banking is an important field for everyone in this present era. Whether you are a consumer of the banking services or you are the service provider yourself. Mobile banking is the most emerging technology that is being used by lots of banks all over the world. This aspect is mostly popular in most of the countries where most of the population is unbanked. For example Pakistan has launched a mobile

\(^{10}\) Technology acceptance model for wireless Internet by June Lu' Chun-Sheng Yu; Chang Liu; James E Yao Internet Research; 2003; 13, 3; ABI/INFORM Global Page. 206

\(^{11}\) Technology acceptance model for wireless Internet by June Lu' Chun-Sheng Yu; Chang Liu; James E Yao Internet Research; 2003; 13, 3; ABI/INFORM Global Page. 206
banking solution in coordination with Tameer Bank, under the label Easy Paisa, which was begun in the fourth quarter of 2009.

This positive shift in perception can be traced back to mainly following factors (Tiwari et al, 2006):

1) The penetration of the society by mobile phones has reached an all-time high.

2) The integration of world economies is leading to more mobility so that availability of mobile services is no more a luxury but a necessity for many.

3) The younger generations of the society seem to be fascinated by modern data and telecommunication services.

Table 1 show the percentage of increase in mobile banking usage from 2010 to 2011 in selected countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of Consumers Using in 2010</th>
<th>Percentage of Consumers Using in 2011</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>10 %</td>
<td>25 %</td>
<td>150 %</td>
</tr>
<tr>
<td>Brazil</td>
<td>10 %</td>
<td>21 %</td>
<td>110 %</td>
</tr>
<tr>
<td>Kenya</td>
<td>6 %</td>
<td>18 %</td>
<td>200 %</td>
</tr>
<tr>
<td>USA</td>
<td>11 %</td>
<td>22 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Table 1: Showing the increase in mobile banking usage from 2010 to 2011

The perceived ease of use and usefulness cannot explain the behavioral intentions towards mobile banking. It means that additional factors must be searched that can predict the acceptance of mobile banking. Rogers identified five characteristics of innovation that can be used to develop attitude towards innovation. These are:

Relative advantage: The degree to which an innovation is perceived as better than the idea it supersedes. The underlying principle is that the greater the perceived relative advantage of an innovation, the more rapid its rate of adoption.

Compatibility: The degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters.

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12 Factors Affecting Jordanian Consumers’ Adoption of Mobile Banking Services
International Journal of Business and social science by Dr. Hamza Salim Khraim, Younes Ellyan and Dr Aymen Salim Khraim Volume No. 2 No. 20 November 2011

13 Factors Affecting Jordanian Consumers’ Adoption of Mobile Banking Services
International Journal of Business and social science by Dr. Hamza Salim Khraim, Younes Ellyan and Dr Aymen Salim Khraim Volume No. 2 No. 20 November 2011

**Complexity:** The degree to which an innovation is perceived as difficult to understand and use

**Trialability:** The degree to which an innovation may be experimented with on a limited basis. If an innovation is trialable, it results in less uncertainty for adoption

**Observability:** The degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt.

There are three predictors of intention to use internet banking. These are trust, compatibility and ease of use\(^\text{15}\).

1. **Trust** is identified as one of the most important factor that influences use of internet banking. Based on trust an individual purchases goods or services through web (Quelch and Klein, 1996). If a person doesn’t believe on technology which is our case the internet, it requires a huge effort to persuade the person to start use the technology.

2. The second factor is the **compatibility**, which is referred to as the degree to which innovation is seen to be compatible with the existing values, beliefs and experiences (Rogers, 1995). Therefore compatibility in our case is the way current users of banking service perceive the use of technology in banking sector and compare them with the old traditional system of banking.

3. **Ease of use** is the feasibility of a service that is being used and the intention to adopt the innovation. In case of internet banking ease of use is the degree to which consumers can understand the innovation and adopt it easily.

![Diagram](image-url)

*Figure 3: Technology Acceptance Model\(^{16}\)*

\(^{15}\) *International Journal of Business and Information: Predictors of Intention to Continue Using Internet Banking Service, An Empirical Study of Current Users by Huam Hon Tat and Khalil Md Nor. Volume 3 No.2, 2008*
Perceived ease of use is the belief of a person that using a particular service will be free of effort. Perceived usefulness is the belief that a service would enhance the usefulness of existing things. Perceived credibility is the behavioral dimension of using a service. Awareness means the extent to which a customer is aware of the service it is using and perceived risk is the user’s subjective loss in the pursuit of achieving the desired outcome. All these factors have a direct influence on the intention to adopt mobile internet banking.

Chapter 4

4.1 Objective of Study:

The objective of this research paper is to study the perceived barriers that account holders of different banks in the Klang Valley of Malaysia face while using the mobile internet banking. This study identified three major areas of research, which are, The Banks, Telecommunication Equipment and Internet Service Providers (ISP). To get some insight they have further identified three barriers within each area.

Banks:

1) The ease of access to relevant information or service, 2) Complete range of financial transactional services, 3) value added services such as bill payments and buying equities.

Telecommunication Equipment:

1) The level of security in mobile devices, 2) the cost of mobile devices with Internet capability, 3) Display screen size.

The Internet Service Providers (ISP):

1) The level of security in conducting financial transactions in the network, 2) The cost of subscription, 3) The connection speed between mobile device and the internet.

4.2 Methodology:

The methodology of research is purely quantitative. Survey method is used to get results by surveying the account holders in banks offering or planning to offer mobile internet banking service in the Klang Valley of Malaysia. The type of survey used was questionnaire and the study was conducted on all the major banks that were present in the Valley. The sampling method was cluster sampling. The questionnaires were distributed in both soft and hard form. A total to 400 copies of questionnaire were distributed and 218 were returned of which 161 were non users of mobile internet banking which were


useful in determining what are the barriers in adoption to mobile internet banking services. The data collected as a result of the survey was tabulated with the help of SPSS II version and to analyze the data different tools were used, such as, Cronbach’s Coefficient Alpha and Factor Analysis, Chi Square Test etc.

4.3 Results and Findings:

The demographical data of the respondents showed that majority of the respondents were male (58.7%) and among them two third were unmarried. Another important factor was that 66 % of them were in between the age group of 30 years. 78.4 % of the respondents owned their own mobile phones and belonged to middle-income group.

Important information which they found as a result of the survey relating to Internet and banking was that almost 92.7 % of the respondents were familiar with Internet and 81.7% were aware of Internet banking. The astonishing figure was that 9.6% were currently using the mobile internet banking service and only 30.4 % have intentions to adopt mobile internet banking.

Analysis based on three major areas: banks, telecommunication equipment and the ISP are stated below.

1. Almost 67.1 % of the respondents perceive that the ease to access relevant information is the most important feature.
2. 69.9 % of the total respondents think that complete range of financial transactions is also important which means that banks who are providing with their transaction on mobile internet should provide complete range of services on the mobile internet banking.
3. Value added services such as bill payments were perceived to be important by only 46 % and another group of respondents constituting of 37.9% marked it as the least important aspect.
4. The level of security in mobile devices is an important issue that has been in huge debate and by the research it is clear that still majority of people believe that this is one of the most important thing which acts as a barrier to adopt mobile internet banking.
5. 59 % of the respondents believe that the cost of mobile phone is very expensive and hence it acts as a barrier to adopt the service.
6. The display screen size is also an issue. 64 % of the respondents believe that it’s a barrier but still half of them are not sure whether they will adopt mobile internet banking service or not.

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18 Exhibit 1: Barriers to Mobile Internet Banking Services Adoption: An empirical Study in Klang Valley of Malaysia by Chavidi, Mulabagula and Suleep, Page 6-7, The Internal Business Review October 2004


20 Barriers to Mobile Internet Banking Services Adoption: An empirical Study in Klang Valley of Malaysia by Chavidi, Mulabagula and Suleep, Internal business review, October 2004
7. Almost 70% of the respondents think that the level of security while conducting transactions through mobile phones are unsatisfactory. Only a small amount from this 19.3% is willing to adapt to the mobile internet banking service.

8. Cost of subscription is also very high and a factor that is acting as a barrier in adopting the mobile internet banking services. More than 50% consider this to be very high.

9. 54.9% of the respondents believe that the connection speed is too low in mobile internet banking.

Chapter 5

5.1 Conclusion:

This paper has been written way back in 2004 and at that time these barriers were more than enough to discourage consumers to adopt the mobile internet banking services. But as of today the world has changed. If you talk about mobile phone, there are android phones everywhere. New technologies have been entering into the market every day and the globalization has also increased new ideas and technologies to travel throughout the world. Today is the world of 3G and 4G. Even in Malaysia the percentage usage of 3G has increased to 15% in 2008 to just 1% in 2006 and is projected to rise to 35% in 2010 and 50% in 2011. A research reveals that 11% of internet users access internet via mobile phones. This shows that the use of internet via mobile phones is increasing in Malaysia. If you look around in the whole world the mobile banking is on the rise and approximately 150 million people use banking through their mobiles. And more than 50% of the users are in Asia. From the World Bank data we can see that the number of mobile cellular subscriptions in Malaysia has increased from 86 percent to 119 percent from the years 2007 to 2010. From this we can say that the internet banking is also on the rise. There are lots on national and international banks offering mobile internet banking in Malaysia.

From my point of view I think that there are some barriers that exist while you are adopting to mobile internet banking like service quality, speed of internet, security and the cost of subscription along with the cost of the mobile phone, but in this present time of technology and innovation, mobile internet banking is becoming a necessity for those who are somehow involved with the banks. Sooner or later I would not say that all the barriers would be eliminated but there would be much lesser barriers with the advent of technology and those who will be there will be ignored when compared to the advantages it will be providing. One more thing that I would like to add to it is that if someone has bad perception about this mobile internet banking, then no one can change their thinking and here it is more of a psychological barrier rather than any technological or adoption barrier.

21 Citibank Malaysia Launches Industry-First Mobile Banking Platform

22 ABI Research: Mobile Banking and Funds Transfer, 2009
Bibliography:

6. Dr. Hamza Salim Kharim, Dr. Younes Ellyan and Dr. Aymen, Factors Affecting Jordanian Consumer Adoption of Mobile Banking Services, International Journal of Business and Social Sciences, Volume No.