

M-COMMERCE AND ITS LEGAL ISSUES

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Abstract---According to a study done by IDC in 2005, there is a total of 259,629 handheld devices were shipped to the Malaysian market in 2004, which is a 90% increase over 2003. Most of the handheld devices today provide Internet connection capabilities. In most cities in Malaysia, particularly in Klang Valley, many places are equipped with wireless Internet connection or WiFi (wireless fidelity). Trends in ICT generally concentrate on the devices such as mobile phones or PDA. Some of the mobile phone comes with Internet connection capabilities. With the Internet through personal computers emerged the electronic commerce, thus with the WiFi connectivity being the latest trend in mobile devices, the rise of mobile commerce is expected.

Keywords: m-commerce, wireless technology, wireless access protocols, personal communication services

I. Introduction

The wireless technology is the main backbone for m-commerce. The data transmission is through the air interface and not through the physical cable (Dewi et al., 2019; Pambreni et al., 2019; Tarofder et al., 2017; Doa et al., 2019; Maghfuriyah et al., 2019; Nguyen et al., 2019). The standard of wireless services is still evolving, and there is no finest conclusion at this stage. However, there are currently 3 types of functional services exist in the m-commerce infrastructures: Wireless Access Protocol (WAP), Application Mobility and voice (De Silva et al., 2018a; De Silva et al., 2018b; Nikhashemi et al., 2013). WAP is a widely known suite of protocols developed by Ericsson, IBM, Nokia and other companies. In WAP, the information can be distributed across wireless means to devices with limited display, such as WAP enabled mobile phones or personal digital assistant (PDA). In Internet, it uses Hyper Text Markup Language (HTML) as a base to provide the content of information but WAP uses “Handheld Device Markup Language (HDML) and Wireless Markup Language (WML)” techniques to request, filter and format content. WML can be used to deliver information content for both traditional web browsers and handheld WAP devices. Another feature of WAP is the Wireless Telephony Application interface, allows devices with limited keyboards to take advantage of web-based services. Application Mobility services come in between non-web based applications and wireless devices. The limitation of this is that it only can work with specific programs.

The benefit of wireless technology is to give customers convenient means to perform various transactions. Therefore, it also creates new business opportunities for many businesses such as banking industry, entertainment industry and telecommunication industry. For example, a consumer can view his bank account details, watch his favorite news channel by using his WAP enabled mobile phone or PDA mobile while he is on the move (Pathiratne et al., 2018; Rachmawati et al., 2019; Seneviratne et al., 2019; Sudari et al., 2019; Tarofder et al., 2019). Digital technology also provided additional services such as text messaging. From 2G networks, standards had been established. Today, GSM in English stands for Global System for Mobile Communication.

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In 1994, FCC began licensing large bands of spectrum intended for what it termed Personal Communication Service (PCS). PCS, unlike GSM, is not a technological standard. Instead, PCS encompasses a wide range of services, including advanced paging, voice, and limited Internet access through mobile phones and PDA. Some of the spectrum licenses for PCS are so large and some services provided are so advanced, sometimes PCS is also referred as 2.5G networks.

Although mobile networks are more compatible today than a decade ago due to the widespread adoption of GSM, many countries in the world remains incompatible. In 1999, the task force set up by ITU had announced a flexible standards named IMT-2000 that combined several competing technologies, including CDMA, TDMA and combined CDMA/TDMA, all potentially in combination of SDMA. Due to the increase of competitiveness in the business world, this is foreseeable that businesses will make large investment in m-commerce in order to secure a niche in the wireless world. There are a multitude of legal and commercial issues arising out of m-commerce. These can be grouped under 4 areas:

1. Security.
2. Privacy.
3. Jurisdiction.
4. Legal binding of m-commerce transactions.

Businesses must comply the security regulations in the domestic market where the businesses are located at. While businesses have their present in global market, they also must ensure that their wireless transactions to comply with the local contract law and the cyber law.

Even though online selling including access through Internet or mobile devices has yet to achieve the volumes that were anticipated (Nikhashemi et al., 2017; Tarofder et al., 2019; Ulfah et al., 2019; Tarofder et al., 2016; Udriyah et al., 2019). The Amazon.com is always a success story to tell about e-commerce. The major legal challenges for e-commerce and m-commerce include payments, contracting, privacy especially the mobile devices such as Bluetooth and wireless technologies.

II. Literature Review

It will increase chances that the message will be intercepted. The reliability of SMS is still questionable. The responsibility of securing the transmission of SMS is fallen on the hands of the service providers. However, service providers have difficulty to ensure that SMS can be safely delivered from one mobile device to another mobile device. In functional areas, WTLS is similar to SSL. It has been optimized for narrowed-band communications. And most of the mobile devices currently are supporting WTLS. For example, Certicom, a Canadian company has implemented a security solution into the Palm VII using WTLS. However, this is only the first step.

PDA present a number of unique problems. For example, if a PDA has to do an electronic signature using RSA's 1024 bits, it may take more than a minute, and at the same time it also drains down the battery but on the other hand, it is less secure. Even when mobile phone users are not receiving or making calls, mobile phones still communicate with the nearest communication towers to register. Every mobile phone has "Mobile Identification Number (MIN)", a 10 digits number for another caller to call, for example, 012-XXX-XXXX for Maxis or 019-XXX-XXXX for Celcom, the two major mobile phone service providers in Malaysia. And it also has a unique serial number together stored in the SIM cards inside the mobile phones – Electronic Serial Number (ESN) provided by the manufacturers. In order for mobile phone service providers to carry outgoing calls.

Mobile phones are becoming a necessity to the people nowadays. When the mobile phone subscribers increase tremendously, it is clear that mobile phone service providers will improve their services quality by installing more communication towers. The more communication towers are built, the more accurate the location. There are few cases stated in 18 Harvard Journal Law & Technology 2004 where the law enforcers in United States to use location information to put the suspects behind bars.

In November 2003, Stacy Ian Humphreys killed 2 real estate agents in Georgia and fled from authorities. He rented a car and traveled to Wisconsin. When police traced back his phone records, the evidence proved that he was in the crime scene. The communication tower provided information that he was within blocks of the crime scene both before and after 3 minutes after the shooting. In the high profile case where Scott Peterson was suspected the murderer of his wife Laci, the prosecutors produced the mobile phone records to establish the suspect's whereabouts. Peterson claimed that he left home in the morning of the murder at 9:30, phone records showed that he was inside his home until 10:08. The defendant attorney argued that mobile phone records were not intended to pinpoint the caller's location, but investigators could prove that the phone records could show the movement of the phone user.

In Knotts, law enforcement agents placed a beeper in a container transported by the defendants and used it as a tracking device. After the defendants began driving easily and the officers accordingly lost visual contact, the authorities used the tracking device to determine the defendants' ultimate destination. The Supreme Court held that "a person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another." (Anonymous, 2004)

Consider that if one day a mobile phone service provider starts to provide a commercial tracking service like providing real-time location information for families and businesses. There is an online service "uLocate" in United States allows users to view the locations of all families members on the website or the phone, and users also are able to review all the locations visited during a specific time frame. This service is not only allowed users to view other locations, it also allows users' location to be viewed by other.

One may claim that the real-time location tracking services is good for monitoring their children. However, when the mobile devices turn up to be a tracking device, public's privacy is seriously compromised. The location information of mobile phone user or PDA user can be traced, and this information can be stored in physical storage as well. The retention of the location information can possibly cause few questions:

If the above issues are not being properly handled, the information can be abused easily. Particularly in Malaysia, many people are not aware of the important of information privacy. Without such awareness, it may encourage some parties abuse the use of such information in their business practices. Banks in Malaysia are governed by BAFIA 1989. It sets very strict rules and regulation on banks to protect the confidentiality of its customer information. Section 97 relates to secrecy, subsection (1) stresses that nobody in a bank or an institution can disclose, make copy of customer data to third parties out of the institution. Section 98(1) states that the customer information only can be disclosed internally for the purpose of professional services or its advisory panel. If a bank provides wireless services and they have to abide to this Act. It will give its customers better assurance that their information will not be leaked to other unauthorized parties.

From a consumer's point of view, it is regardless in traditional trading environment, e-commerce or m-commerce, Consumer Protection Act 1999 (CPA) shall be applicable to any consumer in any lawful commercial activities. In this act, section 9 says that:- However, in section 2(2) states the non-applicable of such act. Section 2(2) (g) states "to any trade transactions effected by electronic means unless otherwise prescribed by the Minister". This clause will give a strong ground

to businesses who conduct m-commerce in electronic means to avoid being sued in court for its possible mischief. In the Internet era, businesses are heavily depending on electronic means, it is recommended that CPA shall be reviewed to keep it up-to-date, so that it can be extended to protect consumer's interest in the digital environment.

It is foreseeable that businesses can utilize the location information to do online advertising. For example, when a person has a PDA or mobile phone comes close to a restaurant, the restaurant locates the person and it sends out a SMS as advertisement to attract customer to patron the restaurant. If this location information is abused and in the worst case scenario, a person will keep on receiving many annoying messages while walking along a street or in a shopping mall. Communication and Multimedia Act 1998 is regulating the application service providers on its content based services, but location based information is not regulated. In the Act, Section 211, Prohibition on provision of offensive content, subsection (1) states- No content application service provider, or other person using a content applications services, shall provide content which is indecent, obscene, false, menacing, or offensive in character with intent to annoy, abuse, threaten or harass any person.

In online advertising using SMS, consumer still receives good faith advertisement, but the annoying thing is that the consumer cannot remove himself/herself from such online advertisements. There are no rules and regulations to mandate the businesses must acquire consent from consumers in order to send SMS alert or not to publish consumer location information. Together with CPA, both Acts have to be reviewed to restrict the use of location information as a mean of advertising and also to include the regulations of online advertising.

The Cyber space creates a new set of challenge to jurisdiction because of its virtual and non-physical. However, there have many court cases discussed in the previous section sufficiently to determine the jurisdiction based on Internet activities. As m-commerce is a subset of e-commerce, the jurisdiction issues faced in e-commerce can be found in m-commerce. Hence, the online jurisdiction can be extended to m-commerce.

In Malaysia, possessing any forms of pornographic materials is a serious offence under Penal Code 292, 293 and 294. However, pornography in United States is categorized into hard-core and soft-core, and it is protected constitutionally in United States. However, a user has a PDA storing pornographic material travels from United States to Malaysia will be charged by Malaysian authority. If a person is violating the law under Penal code, police has the authorized power to search and seize the mobile device, courts in Malaysia has jurisdiction to hear the case. In such clear cut case, there is no argument on jurisdiction. In Computer Crimes Act 1997, section 9(1) already extends the jurisdiction beyond Malaysian boundaries: The provision of this Act shall, in relation to any person, whatever his nationality or citizenship, have effect outside as well as within Malaysia, and where an offence under this Act is committed by any person in any place outside Malaysia, he may be dealt with in respect of such offence as if it was committed at any place within Malaysia. 3G content providers or 3G service providers in Malaysia are bound by Communication and Multimedia Act 1998. The extension of jurisdiction can also be found in the Act, section 4:

There is no indication that Malaysian authority will allow foreign content providers to provide 3G contents directly to Malaysian 3G consumers. The services will be provided through local telecommunication companies. Section 4, subsection (2)(b) shall be used to govern the telecommunication companies. Malaysian legislation can extend its jurisdiction beyond national boundaries but the power of enforcement is still a big consideration especially when it involves the interest of its foreign counterpart. International agreement on jurisdiction in online-related issues would certainly be the best solution. So far, there are many conventions on jurisdiction in non-Internet-related issues, all of them are specific but not related to

Internet controversies, needless to say about m-commerce. Hence, due to the limitation in the power for enforcement, it is foreseeable that authority will put the burden on the shoulder of local ISPs. The 3G vendors and content providers will be regulated by the authority.

Due to the nature of the current wireless device, it has very limited storage. Hence, it creates a challenge of retaining adequate records of wireless transactions. Consumers and business will face a challenge in the m-commerce environment. From business points of view, they have to be compliance with applicable record retention requirements. From consumer's perspective, they have the right to be treated fairly in obtaining reliable records of wireless transactions.

However, the limitation of functions in wireless devices, give difficulty to access and to keep the wireless transaction records. In E-sign, an electronic contract or records satisfies the requirements if it "accurately reflects the information set forth in the contract or other records". The contract or record must also remain accessible by anyone legally entitled to access the information. And the record must be in the form that it can be re-produced in the future for reference.

In e-commerce environment, a recipient can download a file to his personal computer, regardless in the hard disk or removable storage. In most cases, the users can then print out the terms of the contracts through the printer. However in m-commerce environment, not all wireless devices are connected to printer. Hence, this is criticized for being lack of accurate accessibility requirement. Under the UETA, although a wireless retailer is fully compliant to the UETA record retentions requirements, if the recipient does not have the equipment to actually retain or access such information, he will still depend on the retailer's copy. Even if the retailer can send a copy of the record to the recipient, but it is very difficult to know that whether the record has been modified because the UETA never requires that the information be retained must be in an unmodifiable format.

There are some suggestions on overcoming the retention of records. It may be a primitive way but it still works in m-commerce environment. The business retailer can print out the record into hard copy and mail to the recipient. Alternatively, electronic record can be sent to the recipient in the form of electronic mail.

Analysis

In completing the external and internal analysis that have been discussed earlier, strategic choice would be the last analysis that combine both studies and make it into one analysis. The external factors that have been listed as the Political, Economic, Social-cultural and Technological factors are going to be used in SWOT analysis below.

SWOT Analysis

(a) STRENGTHS

- ❖ Malaysia Airlines is one of the best and one of the most favorite airlines in the world. It is also one of the Asia's largest commercial air carriers.
- ❖ Four years since the Airline was restructured, the new and talented management team has given the airline a new spirit, a new breathe and a new aspiration.
- ❖ Malaysia Airlines has shaken off its poor image of the past, and is firmly back to profitability.
- ❖ It's facilities, like The Malaysia Airlines Golden Lounge was praised as more than a lounge. It is among the world's best lounges. The facilities are more like high-end membership clubhouse.
- ❖ Highly-trained, and the best cabin staff that gives services from the heart creates customers loyalty. In addition to that, they have won the "*world best cabin staff award*" for 6 years in a row.
- ❖ Known as to be the safest airline in the industry. Having the latest and modern aircraft in its fleet, and excellent facilities and infrastructure at its base in Kuala Lumpur International Airport.
- ❖ The retrofitted and redefined first and business class would certainly enhance the Airline's value. These assets are important for Malaysia Airlines to provide the full satisfactory service especially to its business traveler's customers.

(b) WEAKNESSES

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- ❖ The government has interfered a lot in Malaysia Airlines management. The affect of this interference has made Malaysia Airlines becoming static and slow moving as the management could not freely manage the business.
- ❖ Does not belong to any international alliance. If they belong to any one of those, Malaysia Airlines can fully utilize of the opportunities and the partnerships which could translate to higher profits.
- ❖ Three years ago, for five consecutive years, Malaysia Airlines has been associated as ‘loss making national carrier’. The loss was due to poor management and poor revenue management which have lead to negative return of the business.

(c) **OPPORTUNITIES**

- ❖ Strong passenger growth with capacity expansion and network growth. Network growth focus remains within Asian region, primarily on China and India
- ❖ Disbanding on Market Development Programme (MDP) will enable Malaysia Airlines to implement selective pricing strategy in Malaysia Market.
- ❖ Fleet upgrade program will improve service offerings and enhance appeal to both premium and tourist market segments.

(d) **THREATS**

- ❖ Other airlines are pinching on Malaysia Airlines’ staff
- ❖ The emergence of low-cost carrier such as Air Asia would slowly affects the growth profile of Malaysia Airlines when they started to operate on the international routes.
- ❖ The effect of September 11, 2001 attack to the aviation industry.
- ❖ Concerns over security in neighboring countries could affect travel to South East Asia.
- ❖ Reemergence of bird flu in China, Thailand, and Vietnam could impact Asia travel industry.

III. Conclusion

Due to the limitation of mobile device, and the radio signal travels through the air interface. It poses a great security challenge to m-commerce as compare to the security issues faced in e-commerce. Whether m-commerce can take off successfully or not, the security is the key factor. Standards committees and vendors alliances are vying to set standards and legislation for securing wireless transactions. These groups include WAP Forum, Radicchio, the Bluetooth Special Interest Group and the PKI Forum. WAP forum does not concentrate solely on wireless security, it sets the framework for how security features such as PKI are implemented into WAP. WAP forum has 200 members, and it includes Ericsson, Nokia

and Qualcomm. Any vendors who have interest to venture into m-commerce, they should take initiative to participate in these forums.

A complete mobile PKI is still not globally accepted. The encouraging news is that Vodafone has tried out mobile PKI in 2001. The telecommunication company worked with the British government to create an application for its Department of Trade and Industry employees to write, sign digitally and file their expenses claims. Vodafone worked with GlobalSign, who provided the CA certificates, and two Silicon Trust partners Giesecke & Devrient and Secartis, the former one provides the mobile PKI enabled SIM cards for employees' mobile phones. The latter constructed the entire system architecture and monitored the development. Such project shows the potential for mobile applications as well as valuable experience.

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