MA MAJOR RESEARCH PAPER

The Diffusion of Text messaging: A Comparative Perspective

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1. Introduction

'Walk down the street, a few blocks away from your favourite Starbucks, pull out your Web-connected cell phone, you get a Starbucks menu, click espresso, and it's sent. And you've not only ordered it, but you've paid and you can go and pick it up.' (New York Times, 2 March 2000; quoted in Myerson, 2001)

The use of mobile telephone in current society has increased dramatically over past five years. As the development of wireless technology allows us to use mobile telephone anywhere, anytime and for any purpose, the significances and implications of mobile telephone usage in our everyday life have been reflected on every part of modern society. This paper will address the diffusion of text messaging applying comparative perspective on two different cultures: Korean and Canadian cultures. According to the web site of Cellular Online[1], the mobile telephone subscribers worldwide reached 1.325 billions in 2003. Developed countries such as UK and Japan are seen as leading countries where mobile telephone penetration is overwhelmingly high. In case of UK, latest figures from the UK telecommunications regulator, OFTEL[2], show that 76% of British adults own mobile telephone[3]. According to recent research by Crabtree, Nathan and Roberts (2003), this translates to nearly eight out of ten households, or a total of 47 million mobile subscribers in the UK.

Among those subscribers, many studies argued that young people has been the most influential on the 'maturation' of mobile phone markets all around the world (Aoki and Downes, 2003; Fitzpatrick, 1998; Ito, 2001; Kerawalla and Crook, 2002; Ling, 2000, 2001; Oksman,

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[1] http://www.cellular.co.za/stats/stats-main.htm
[2] The Office of Telecommunications
[3] Crabtree, J., Nathan, M., & Roberts, S. (2003). Mobile UK: Mobile phones and everyday life. *The Work Foundation.*

2002; Tanaka, 2001; Sherborne, 2001; Taylor and Harper, undated; Tysome, 2001; Underhill, 2001). Thus, every single company that is part of mobile phone industry has tried to understand their tastes and habits, and to develop various applications and features which best suits their needs. From a business perspective, the youth market has been increasing significantly over the past decade. It is believed that the main consumer of any form of commodities, especially communication gadgets like mobile phone has not been their parents but young generation. As a result, many researchers (Aoki and Downes, 2003; Crabtree, Nathan and Roberts, 2003; Eldrige and Grinter, 2001; Elkin, 2003; Fitzpatrick, 1998; Irvine, 2002) have come to identify that the young consumer has become the primary driving force that influences the development and diffusion of communication technologies.

The mobile phone is a communication tool with various additions, which users may decide to use or neglect. It is clear that no other communication gadget and services have never been such a convergence of technologies. With a basic function of it, mobile telephones have been combined with electronic game, radio, TV[4], digital camera, music entertainment, Internet access, email and text messaging. They are even used as clocks, calculators, memos and diaries. Users can shop, bank, deal in shares or receive latest baseball scores and weather updates. With the development of GPS[5] (Global Positioning System) technology, in Japan[6], it is now used in emergencies to track the location of individuals in an emergency situation[7]. In this regard, it has become our "personal communications centre" (Myerson, 2001). Among these add-on functions and services in mobile telephone, that of SMS (Short Message Service) service has been

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[4] See http://www.samsung.com/Product/MobilePhone/themobilegallery/index.html

[55] The Global Positioning System (GPS) is a worldwide radio-navigation system formed from a constellation of 24 satellites and their ground stations. Retrieved from http://www.trimble.com/gps/what.html

[6] http://www.3g.co.uk/PR/April2003/5241.htm

[7] Bell Mobility in Canada also announced (November, 2003) that they have a plan to introduce two additional services called 'the Roadside Assistance Service,' which is "first commercial application of Assisted GPS roadside assistance technology offered by a wireless carrier in North America," and 'e-9-1-1' service[7]. Retrieved from http://www.bce.ca/en/news/releases/bc/2003/11/13/70745.html

identified as the most used service. However, many studies show that the rate of adoption of SMS service in US and Canada had not been increasing since it was introduced, as opposed to that of SMS adoption in Asia, where SMS service has been popular (Hafner, 2000; James, 2002; Underhill, 2001; Mckenna, 2002; Wahl, 2002; Riedman, 2002; Elstrom, 2001; Garrity, 2003; Belsie, 1996).

Many researchers and journalists have raised the issue around the low use of text messaging in North America and have identified the various technical problems, including the different standards present in wireless networks and billing systems in North America, as being the primary factors that have influenced the low rate of the service's adoption. (Hafner, 2000; James, 2002; Underhill, 2001; Mckenna, 2002; Wahl, 2002; Riedman, 2002; Elstrom, 2001; Garrity, 2003; Belsie, 1996). While the conclusions presented by these studies are feasible, they failed, however, to demonstrate the various social and cultural variables that hinder North Americans from using the SMS service.

Because very few studies that examine the case in U.S. and Canada have considered the differences in cultural/social context and the different patterns of people's perceptions of the new and emerging technologies, this paper will attempt to demonstrate two different approaches – diffusion theory and cross-cultural perspective – to the adoption and diffusion of mobile telephone and apply them into the adoption of text messaging service in Canada. In regards to the cross-cultural approach, the similarities and differences in regards to young people in both Korea and Canada will be provided as a means to address the relationship between cultural variables/obstacles and the rate of text messaging adoption in Canada.

2. Literature Review: Related Research

Over the years, research both within and outside of the communication field have demonstrated the social, economic and cultural ramifications of mobile phone technology and have clearly showed the impact that it has had on all aspects of everyday life. It has influenced our behaviour in both the private and public sectors of society. We, as the consumers, daily faced with media releases that deal with mobile phone technology and how people are utilizing this communication device. Presently, for instance, the safety issue in regards to simultaneously using a mobile phone and driving is no longer a primary factor since it has become a norm. We also often see the warning messages before movie starts to turn off all.

In the following section, I will review studies and research including 1) studies in relation to text messaging and mobile telephone, 2) the diffusion theory by Rogers (1996) and 3) studies in terms of 'real life context' and cultural differences. The objective of this review is to provide a general insight into the issues that is addressed by various research questions. The three main categories that I noted above are closely related to the research themes that will be addressed in the section that deals with analysis.

2-1. Text messaging (SMS service)

The definition of text messaging is "a service for sending short text messages to mobile phones."[8]

[T]ext messaging refers to sending short text messages from a mobile phone to other mobile

phone users using the SMS standard. This is becoming an increasingly popular form of

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[8] http://www.webopedia.com/TERM/S/SMS.html

communication outside of the United States. This is due to the economics of text messaging versus being online. Key advantages of text messaging (versus being online) include a user's ability to text people independent of computer access, rather than only being able to communicate when logged onto the Internet, it's less intrusive than a phone call, and it is less expensive than a phone call. Text messaging is a form of asynchronous communication. (From http://www.definethat.com/define/?id=341)

Text messaging was introduced in 1995 as a means to enable phone networks to communicate important service messages to their subscribers ("MDA report," n.d.). Over the past few years, the service has caught the attention of mobile phone users all over the world and is now used more than 70% of them. According to MDA's (Mobile Data Association) professional Text Messaging Report[9], 16.8 billion chargeable person-to-person text messages were sent across the four UK GSM networks in 2002. Other figures from 'Mobile Lifestreams' show that about 27 billion text messages were sent in countries that belonged to European Union in 2002, and ten billion messages were sent in Asia in the same year. In North America on the other hand, only seven billion text messages were sent in 2002.

Two main reasons have been presented in order to explain why text messaging has been popular in Europe and Asia and not in America. The first reason is in regards to pricing. In Europe and Asia, to send text message is less expensive than to make a call on one's mobile phone. When most of telecommunications companies in US started offering text-messaging service in US market, the customers were not buying into it because Americans were paying per-minute charges for mobile phone services, whether they make or receive a voice call or send or receive a text message. For the user, it was more convenient and less time consuming to dial a

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[9] http://www.mda-mobiledata.org/index.asp

phone number than to tediously send a text message. On the contrary, mobile telephone service carriers in Europe and Asia have made text messaging less expensive by charging per message rather than per minute. Furthermore, the user in the US is responsible for the charges both incoming and outgoing calls, while the user in either Europe or Asia is responsible fonly for outgoing calls.

The second reason that explains why the use of text messaging is more prevalent in Europe and Asia than in North America is in regards to the standardization of wireless networks. (Batista, 2001; Day, 2002; Gwin, 2000; Hafner, 2000; James, 2002; Madden and Qassim, 2002; McKenna, 2002; Pastore, 2001; Riedman, 2002) According to Garfinkel (2002), he argued that, in case of European market, the main reason why the use of text messaging is considerably high is due to the fact that Europe has avoided the problem that US and Canada has had – inter-carrier interoperability – by setting on a single wireless telephone system called GSM (Global System for Mobile communications). Thus, it always has a combination of availability and compatibility in European market. Like Europe, the Korea too is set on CDMA[10] system which means that everyone who subscribes to a mobile telephone service has the ability to send text messages to anyone in the country.

2-2. Mobile Telephone

In order to identify the main drivers and consumer patterns in adopting text messaging, it is necessary to examine the behaviour of those who are using mobile telephone device because in general, the adoption of text messaging follows the adoption of mobile telephone. As mentioned earlier, the use of mobile telephone in the world is incomparably higher than any other previous technologies. In turn, this begs the question: "How and why has the mobile telephone become so

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[10] Code Division Multiple Access

popular all over the world?" In order to answer this question, one has to look at three different factors that have caused the leap of mobile telephone adoption in most developed countries in the late 1990s. First, it was cost. According to Crabtree, Nathan and Roberts (2003), unlike other types of technology including PCs and Broadband service, mobile phones are much more "affordable." The second factor that has influenced the increase of mobile telephone ownership is the attractive promotion, such as free or heavily subsidized handsets, that have been offered by mobile phone service providers. The third factor was due to the development of smaller and portable handsets that have attracted younger generation who tend to consider owning fancy mobile phone as another way of expressing their social status like what 'Walkman' did years ago (Ozcan and Kocak, 2003; Roos, 1993; Kopomaa, 2000). In addition to these three factors, the latest development of value-added services, namely text messaging, Internet access and color display have encouraged consumers – particularly the young people – to purchase a mobile phone.

Although these factors discussed above are valid in most developed countries, in case of developing countries in Africa or Southern Asia, it has been different in a sense that there has not been a development of telecommunications infrastructures including the building of fixed telephone line. Thus, it was more cost-effective than building a landline telephone systems. Myerson (2001) argued on this point that, beyond the practicality, the mobile telephone, for those who are living in developing countries, is "the object which most closely embodies the spirit of the 'changing environment'." They have chosen mobile telephone as their means of assuring themselves that they belong to the new century. They have their own way of using mobile phone that seem to be quite different from those who are in other side of planet. For example, people who have experienced or that are in the midst of a war in their countries (ex. Bosnia or Albania)

or people who are often experiencing natural disasters (ex. flooding, drought or earthquake) are likely to use mobile phone as a safety device that can keep them away from those dangers. Moreover, they tend to use more text messaging rather than the conventional call as the former service is simply less expensive than calling in those areas. As the penetration and the market of mobile phone in developing countries is rapidly growing up, there are number of research examining issues around mobile phone use taking place in developed countries. However, at the same time, further research examining the economic and social implications, particularly ethnographic research, is also required as it will provide the necessary information that would indicate which 'consumer need' impacts the most when adopting mobile telephone. This research is no doubt beyond the scope of this study.

2-3. Diffusion theory

This section of paper will primarily focus on the traditional diffusion theory by Rogers in 1996, which has been the foundation in both marketing and information system research for many years. Also, reference will be made to several other researchers who have based their work on the diffusion theory. This section also focus on, first, how and to what extent this theory can be applied to the subject of mobile technologies, and also, what can be ascertained when this theory is applied to diffusion and adoption process of mobile telephone among young generation in both Asia and Europe.

Over the past decades, researchers in communication area have been studying mobile telephony. Early tendency in these studies was to examine the technological aspects of mobile telephone in society, including health issue, studies on policies and regulations (ex. mobile use while driving), research for marketing purposes and several futuristic forecast about mobile

telephone and its potentiality (Belsie, 1996; Roos, 1993). However, after pointing out several economic factors that I mentioned above – subsidized handsets and affordable cost – and some social factors – mobile use in political demonstration and growing rate of youth's ownership – researchers began to realize how this technology is crucial in our everyday life. They began to conduct ethnographical studies on mobile telephone use in members of community, professional organization and household, particularly among young people who have been seen as powerful force in adopting mobile telephony. (Aoki and Downes, 2003; Fitzpatrick, 1998; Ito, 2001; Kerawalla and Crook, 2002; Ling, 2000, 2001; Oksman, 2002; Tanaka, 2001; Sherborne, 2001; Taylor and Harper, undated; Tysome, 2001; Underhill, 2001) In addition, there have been attempts to establish the theoretical background of mobile telephony (Brown, Green and Harper, 2001; Katz, 1999) and approaches to examining the relationship between users' behaviour and mobile services that are becoming more complex over the years (Aoki and Downes, 2003; Anon, 2002; Honold, 1999; Kim, undated; Laurier, 2000; Ling 1997; Murphy, 2001; Palen, Salzman and Youngs, 2000; Schwartz, 2002;), in order to support further investigations and to explain what has happened around the issues of mobile telephony in the world. Recently, some researchers started focusing on three different approaches when examining different aspects of mobile telephony in a range from traditional mobile networks services like voice and messaging to more complex version of mobile telephony which has brought researchers from various areas including mobile informatics researchers, telecommunication sociologists and traditional information systems researchers into the area of mobile internet services (Pedersen and Ling, 2003). These three approaches include diffusion research (Ling, 2001), adoption research (uses and gratifications research) (Wei and Leung, 2000) and domestication research (Silverstone and Haddon, 1996). However, this study will only focused on diffusion research.

Attributes

Rogers is one of the primary scholars in diffusion research. His works are perhaps one of the most cited in this area and his comprehensive approach to understanding how innovations are adopted through different user categories are often employed (Ling, 2001). Rogers' theory identifies several key points in the adoption process. First, an emphasis is made on the 'attributes' associated with items that are adopted such as relative advantages, comparability, simplicity, availability and visibility to others. This notion of the 'attributes of technology' is generally used when explaining why certain technology is being adopted. In other words, as Rogers (1996, p.250-251) noted in his study, the perception rate of individual receivers to these 'attributes' can be used when predicting an innovation's rate of adoption. An example is provided (1996, p.244) to demonstrate these 'attributes' can be applied to the patterns of the mobile telephone adoption. Text messaging can also be applied into this system of 'attributes.' First, for a 'relative advantage,' a text messaging can be used in situations where a voice call cannot be made. For example, the more mobile subscribers are growing, the more resistances are occurring. Many studies have the raised issue of mobile phone usage in public places like hospitals, schools and movie theatres. It is found to be the most annoying and disturbing communication device to have ever been invented and there have also been issues around regulations and rules. According to survey completed by the Japanese government[11], 57.9 % of people think that the use of mobile phone should be prohibited in places like hospitals or medical institutions where radio waves can interfere with the electronic medical equipment. In this regard, text messaging becomes an option.

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[11] This is a survey conducted by the Ministry of Posts and Telecommunications in Japan in 1998. Retrieved from http://www.mpt.go.jp/data/communications/index.html

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Second, for compatibility, unlike the typical usage of mobile telephone as described by Rogers examining that mobile telephone can be connected to landline telephone, it is difficult to apply this notion into text messaging service since users are not able to send or receive messages unless they have text messaging enabled phone, which is more expensive and introduced later than ordinary telephones.[12] One more problem is that there are still many people who have ordinary phone, and if they want to use this service, they must switch their phone to text messaging enabled phone. In Canada, text messaging enabled phone was available to consumers since 1996. Another concern related to compatibility is about different standards of networks in Canada. As noted above, many researchers have claimed that this was key problem in the adoption of text messaging in Canada and the US, even though this issue has not been of critical importance since service providers agreed on inter-carrier service in 2002.

Third, for complexity, unlike the typical usage of a mobile telephone, which operates the same as the landline telephone, users who are willing to use the text messaging service are required to learn new techniques to send or receive messages. This appears to one of the main reasons why many users, particularly that of the older generation, who have a negative perception of it. Thus, most mobile service carriers are offering a tremendous amount of information and tutorial materials to help people use such service.

Fourth, for observability, the use of text messaging in Korea is highly observable. From students in class or library and commuters in public transportation to people in business meeting, they are using text messaging for organizing their appointment, for receiving information, or simply for just keeping in touch with friends and family. However, in Canada, because there are still many places we are unable to use the mobile telephone such as subway and other

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[12] In Korea, even mobile telephone in the beginning of development stage (mid 1990s) has 'text messaging' function in it. See also http://www.samsung.com/Product/MobilePhone/themobilegallery/index.html

underground facilities, people using text messaging is less observable.

Finally, for trialability, unlike the typical usage of mobile telephone, text messaging cannot be used on trial basis as some mobile phones from different manufacturers have a unique way of 'keying.' Thus, it is required to learn all the detailed procedures in order to use the text-messaging service.

Based on the context and experiences in Asian countries such as Korea, it can be argued that the application of attributes to text messaging service is different from that of mobile telephone, which leads to the assumption that the patterns in adopting text messaging in Canada could be different from that of the mobile telephone. Also, since text messaging is one function of the mobile telephone service, the adoption of text messaging is possible if the adoption of mobile telephone has already taken place. In addition, because of the difference of 'attributes' in both countries, the patterns in adopting text messaging in Canada might be different from that in Korea.

Critical Mass

Rogers (1996) also makes an important assertion that the 'critical mass' is central to the adoption process, especially in regards to telecommunications devices such as the mobile telephone. The 'critical mass' appears, according to Rogers (1996, p.313), when the innovation is adopted by enough people and the adoption rate becomes "self-sustaining." In other words, the basic idea of this assumption is that the market value of device increases when the rate of owning the device is increased, which in turn means that there is less utility where only a few people own a device compared to when the device is generally distributed through society. This notion of 'critical mass' can be applied to explain the rate of adoption process in Canada when they

adopted text messaging. However, in Canada, it is difficult to identify the 'critical mass' as one of dominant factors when examining the adoption of text messaging. Two main concerns will be addressed here. First, the lack of standards in North America, including Canada, has made it difficult to attain a critical mass of users. As indicated above, sufficient research has been provided in regards to this matter over the past few years. A second concern is in regards to 'connectivity.' The main driver of the proliferation of the mobile telephone and text messaging in Korea was the effort from service providers to improve the quality of service including better reach (or connection) and better quality of calls. To accomplish this goal, they invested to build better antennas and facilities in everywhere (even underground), and the small area of the country made this possible. This effort made people believe in the meaning of "motto" that they can be reached anywhere and anytime[13]. Compared to the quality of the mobile service in Korea, Canada has relatively poor service quality. For example, in underground facilities (like subway or parking lot) users are unable to use their mobile telephone, including text messaging. There is no doubt that these problems were dominant factors that caused the delay in the adoption of text messaging in Canada.

Countries such as the United States and Canada are geographically much larger in area than most Asian countries such as Korea. In the beginning of telecommunications history, in order to provide service to all areas including resident and remote area, telecommunications companies had to invest a large amount of capital in order to construct the required technical infrastructure. Therefore, when mobile services first emerged, it was common that regional service providers were established – the first regular mobile service was commenced in Chicago in 1983 (Grant and Meadows, 2002) – similar to that of landline service providers. Moreover, the

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[13] This approach was also applied in building broadband Internet networks.

reason there are many different mobile telephone standards (PCS[14], CDMA[15] and GSM[16]) is due to the fact that the FCC (the Federal Communications Commission) was experimenting with new regulatory paradigms to bring more competitors into the market, which caused new "gold-rush," with the prize of cellular spectrum being much more valuable than any other metal (Grant and Meadows, 2002). This has provided limited availability and inter-operability for early adopters when they tried to use a variety of services.

However, the problem of inter-operability was solved when providers decided to operate services with other standards. Recent research suggests that this solution makes people use SMS service more often, and evidence shows that the rate of adoption has rapidly increased since. Nevertheless, there are other problems that remain in the Canadian SMS market, namely the 'connectivity' and 'compatibility.' The question is how service providers would make users believe that they are connected anytime and anywhere and how they would bring users who do not have text messaging enabled phones to use text-messaging service. These problems will affect to some degree the 'critical mass' in SMS market in Canada, and will play a primary role in the rate of adoption of text messaging service in the country. For researchers, further investigation regarding these problems is required. For service providers, on the other hand, more effort is needed to improve the quality (connectivity and compatibility) of the text messaging service and various other value-added services.

2-4. Real life 'context' and cultural differences

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[14] Personal Communications Services; a digital, wireless system that works in the 1900MHz frequency band. PCS protocols include CDMA, TDMA and GSM.
[15] Code Division Multiple Access; is used in South Korea, US and Canada. CDMA divides a radio signal over a range of different channels. Then, as the signal is being received, it is recombined into one channel that can be understood.
[16] Global System for Mobile communications; is used mostly in Europe and is a form of TDMA that can handle data.

<u>Status Symbol (motivation)</u>

Ling's article (2001) "The diffusion of mobile telephony among Norwegian teens: A report from after the revolution," asserts that the communication device is the one of crucial methods to express one's social status, and it is the mobile telephone that most young people consider as a physical symbol of status among their peer groups. The researcher also claims that the mobile telephone device is used not only to coordinate activities, but also to enhance the "imagined" social status. It has also been demonstrated how the design of the mobile telephone is increasingly aimed at a specific type of user and how the different social characteristics of mobile telephone users are causing phone manufacturers to divide the market (Economists, 2002a). For example, leading mobile telephone manufacturers like Nokia and Samsung divided target subjects and produced 'design phones' to accommodate different consumer needs. Samsung's A400 handset, which replicates a make-up compact, was introduced to appeal to female users.[17]

There are further research studies that examine the role of mobile telephone as a status symbol. Among them, Ozcan and Kocak (2003) have examined the importance of the mobile phone as a status symbol in their discussion on the motivation of using mobile phones among Turkish people. Roos (1993) introduced the concept of 'social status' when discussing and identifying different groups of users including "yuppies" for whom the mobile phone is often described as a status symbol. Kopomaa (2000) also examined the use and presence of the mobile phone in Nordic cities and its implications on urban culture and lifestyle. Taylor and Harper (undated) also pointed out the important role of the mobile phone device in the diffusion of the mobile telephone among young people. They argue that mobile telephones among young people

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[17] http://www.samsung.com/Product/MobilePhone/themobilegallery/index.html

foster and preserve a sense of community. On a symbolic level, a mobile telephone is an important way of indicating that an individual is part of a certain social network and that he/she is able to show and express their status within that network by using their mobile telephone. In addition, the use of the mobile telephone, whether calling or text messaging, allows the individual to show their 'involvement' in a social network.

Real Life 'Context'

Based on the assumption discussed above, there seem to be a difference in regards to the cultural and social background (or context), which draws young people be in contact with each other. This main difference can be defined as 'real life situation,' in which young people in each country might have unique experiences when they initially adopted mobile telephones and text messaging. Ling (2001) claimed that "young people are in period where in they have a great need for social interaction," and the mobile telephone makes fulfills their need, unlike the traditional landline telephone whose access is controlled by parents. This is particularly true in the case of Korean households where parents have control the length of conversations and the location of the household telephone. Thus, amongst teens, the mobile telephone sales campaign has followed after teens themselves had adopted the device itself. Ling (2001) noted that the rate of adoption of the mobile telephone among teens depended on the rate of social contact among teens. They tended to buy mobile telephone simply because their friends owned one.

If you look at the general life situation in both Canada and Korea, it is easy to identify the differences. Wahl (2002) argues that there are three factors that explain the reason for the slow rate of text messaging adoption in Canada. The first is in regards to the different pattern of mobile phone introduction in the initial stage of mobile telephone introduction. He states that in

Asian (including Korea) and European countries, the mobile telephone was introduced and used as a substitute for the landline telephone that was relatively expensive[18]. However, in Canada, it was introduced "as a business tool or a safety measure in cars." Majority of Canadians started looking at the mobile telephone as an ordinary communication tool when the competition lowered its price in the mid-1990s. In addition, he notes that the penetration of the mobile telephone in Canada is comparatively low (about 30%) to Japan (50%) and Europe (75%) in 2002[19]. The second factor noted by Wahl is the 'PC loving culture.' With the early introduction of mobile Internet access in Japan (i-mode) and Europe, users have been familiar with Internet access via their mobile phone, which provides a much easier way to send or receive e-mails. However, in Canada, people are more likely to use their desktops to send or receive long e-mails. Last factor, according to Wahl's study, is that Canadians are "more likely to stuck in traffic jams, where simply talking into their phones is easier than punching buttons," as opposed to those (Japanese, Korean and most Europeans) who are more likely to use public transit which provides them with the opportunity to use text messaging service. Even though Wahl's research is significant in that he provides an alternative perspective other than the economic or technical approaches in the examination of text messaging adoption patterns in Canada, he failed, however, to address the background context of users, and to provide reasonable (or reliable) sources to support his ideas. With the arguments presented by several researchers, one can assume that the importance of real life 'context' and social contact might be suited better in comparison between Korean context, where the collective activities are mostly dominant in the society, and the Canadian context, where individualistic activities are seen as a general behaviour. In other words,

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[18] In Korea, people usually use mobile telephone for long-distance call because the price of mobile-to-mobile long-distance call is the same as local call, which means you are able to call from anywhere to anywhere at the same cost. The fact that Korea has small territory made it possible.
[19] What I understood from this statistics is the diffusion rate of mobile telephone in Canada is still not enough to boost the rate of text messaging adoption.

people in Canada would be a more independent, whereas people in Korea would consider themselves more interdependent (Kim, Kasser and Lee, 2003). This argument requires further research in terms of the general characteristics of people in both countries and the inherited cultural traditions.

Location: Urban geography of space and place

In Northeast Asian countries such as Japan, China and Korea, it is very common to see young people gathered in the downtown area where they can eat, drink and simply 'hang out'. This is particularly true in Japan where they tend to have little place in their households for such activities, compared to those in North American countries (Ito, 2001). Therefore, the urban youth tends to take to the street to socialize and they have to be 'mobile' at all times in order to get to their desired location. They usually spend a significant amount of time on the move using public transit.[20]

This fact of location significantly affects the rate of the adoption of text messaging in Korea (and Japan) as users tend to get more chances of being public places where the mobile phone use is commonly restricted and as a result they have to resort to using text messaging as a substitutive means of communication. However, in Canada (particularly in larger cities like Toronto[21]), young people especially high school students or under are less likely to take public transit to distance places since all their needs such as mall (most malls have cinemas) or small plaza where they usually spend their extra time in weekend are within their community. Therefore, their range of movement is limited and the chances of them being in public places like public transportation are reduced. In addition, public transportation is less likely used by the

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[20] Unlike the situation in Canada, driver's licence is issued to those who are over 20 years old.
[21] Great Toronto Area

Canadian teenagers since he/she can acquire their driving license at a much earlier age than their Korean counterparts. This fact also affects the chances of young Canadians being in public places.

As mentioned above, young people tend to spend a great deal of time on the move. Historically, there has been a dramatic increase in the movement of youth since the method of public transportation such as subway and local transit system in the urban area has been significantly developed. Based on personal experience in Korea, most young people in the residential area spend between 30 minutes to one hour in transit to reach the downtown area, a place where all their needs are located. During this time, they usually send text messages or chatting with their friends with their 'thumbs,'[22] as in some countries like Japan, voice calls are generally prohibited on public transportation vehicles and restaurants, while text input is acceptable. Most trains, buses and many restaurants display "no mobile phone signs." However, in most public places in Canada – although people start realizing that the use of mobile phone in public places (like theatres) is not welcomed – it is still seen that people (young people in particular) are likely to use voice call instead of using text messaging as talking on the phone is effective way for them to show that they have a 'mobile telephone.' Thus, the degree of chances of being in public places and the role of the mobile phone as 'status symbol,' which still exists in Canadian society, naturally affects upon the rate of adoption of text messaging service. Further research (including surveys and interviews) that examines the relationship between the rate of text messaging use and the rate of chance being in public places among young people in both cultures is required.

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[22] Amazingly, young people are chatting with their friends 'keying' mobile phone which can be connected with 'instant messaging' system like MSN messenger or ICQ.

Cultural standards: Dimensional concepts

In this part of the paper, an attempt will be made to establish a relationship between the rate of adoption of text messaging and different cultural standards in both Korea and Canada. Some literatures of cross-cultural and intercultural psychology (Hoft, 1995; Brake, Walker and Walker, 1995) suggested that western and eastern people orchestrate their actions along different cultural 'norms.' Based on this 'cultural standards,' people tend to re-act to and interact with each other by using existing communication channels and technologies. According to the research done by Kim (undated), some Korean professors still feel that it is impolite for their students to send e-mails to them. They think that it would be more appropriate for their students to make a personal visit when they need to discuss a matter, while sending emails in that context is seen as a common behaviour in most North American universities. Kim found that the reason for this variance is due to the cultural 'norms' that each country has inherited. In the Korean case, these 'norms' include 1) hierarchical authoritarianism, 2) crony collectivism (or cronyism) and 3) personalism. The basic argument of Kim is, as noted above, that people tend to make value judgement about a particular use of a new technology, and it is hierarchical and collective characteristics that provide certain condition, which expedites the speed and range of diffusion of mobile telephone in Korea, that are "ripe" for fast diffusion. This research is useful in a sense that the adoption of text messaging in Canada can be influenced by the cultural values or their attitudes toward new and emerging technologies, just like e-mail did in Korean society. Further study on cultural values among Canadians is in need.

In terms of 'cultural standards,' there is an interesting research done by Honold (1999) examining the importance of learning in adopting new communication technologies in different contexts. Honold (1999) presents the article called "Learning how to use a cellular phone:

Comparison between German and Chinese users," in Journal of the Society For Technical communication. The main objective of this research was to investigate whether and how "cultural standards" influence the use of typical daily products – in this case, cellular phone – by German and Chinese users. The research focused on the attitude toward different sources of information about how to use a cellular phone, for example, online help accessible by pressing the help key, short reference manual, information help from friends, or on the actual use of the user manual. The essence of research is that the author provides theoretical concepts to examine the relationship between culture and human-product interaction, by reviewing several literatures in the field of cross-cultural psychology and training. It is 'dimensional concepts' that have prevailed in describing the effect of culture and the author includes 1) individualism/collectivism, uncertainty avoidance, masculinity/femininity, and power distance by Hofstede[23] (1980), 2) high context/low context communication, polychrone/monochrone perception of time by Hall[24] (1990), 3) universalism/particularism by Trompenaas[25] (1993), 4) linear thinking/systemic thinking by Stewart and Bennet[26] (1991). He claims that these concepts are exceptionally practical in understanding cultural differences. Second point of theoretical background of this research is "standards of culture," which is derived from intercultural interaction situations, and always describe one culture from the view of another culture.

In terms of dimensional concepts, the author presents cultural concepts derived from the literature and their possible effects on people's strategies in learning how to use technical devices. First, the author, in terms of the 'objective of learning,' suspected that different cultural

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[23] Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*, Newbury Park, CA: Sage Publications.
[24] Hall, E. (1990). *The silent language*, New York, NY: Doubleday Books.
[25] Trompenaars, F. (1993). *Riding the waves of culture: Understanding cultural diversity in business*, London, UK: The Economist Books.
[26] Stewart, E. and Bennett, M. J. (1991). *American cultural patterns: A cross-cultural perspective*, Yarmouth, ME: Intercultural Press.

dimensions influenced learning in the two cultures: *pragmatism* in China (More Chinese than German people know and use only basic functions) and *idealism* in Germany (Germans know and use a wider range of functions than the Chinese). Second, the author assumed that the 'tradition of learning' should have some effect on the learning processes in daily life. Then, the author came to another hypothesis that the Chinese use more imitating strategies while Germans use exploring strategies. Third, the author present that the main source of information for the Chinese is asking other members of their peer group and gathering oral information (*collectivism*) whereas the written manual is the primary source of information for Germans (*individualism*). Last, in terms of learning material, the Chinese, the author argues, are likely to use manual that contain a lot of pictures while the Germans are likely to use manual that contain complete and consistent textual information.

In terms of first hypothesis, 'objective of learning,' Chinese participants tend to use manual to know only the basic functions. They simply do not want to spend a great deal of time on getting to know functions they do not want to use. On the other hand, German participants tend to use manual to get the overview of functions as well as special functions. Therefore, the author concluded that this result support the hypotheses about the influence of pragmatism in china and idealism in Germany.

With the result of focus group, the author concluded that Chinese people tend to learn by imitating because they had learned these functions primarily from their friends or the sale person's demonstration when they purchased. Germans, however, tend to learn the principles when they encounter new technology.

Even though the result for the Germans fit very well with the hypothesis that written material is the main source of information, the hypothesis for Chinese had to be adjusted because,

after spending quite some time, they do not tend to ask their friends because of the fear of loss of face. Therefore, to them, the high quality of information, like the online help, is important.

Last, while Germans favour written and complete manual that should be designed in a way that enables them to find the information they need very quickly (alphabetical order, for example), Chinese prefer pictorial information to printed information. They also favour the online help and video instructions or instructions on CD-ROM. In addition to this research, one study examined the relationship between uses of technologies and learning in different cross-cultural perspective (Leach, 2002). Other researchers focused on the learning pattern through members of different culture (Smeds, Olivari and Corso, 2001), and highlighted the cultural differences in meaning and representation through visual media (Hedberg and Brown, 2002).

I think the relationship between dimensional concepts/cultural standards presented on Honold and Kim's articles and the differences in the rate of text messaging adoption is not clear enough to argue that users in both Korea and Canada tend to adopt (or approach to) text messaging service based on different cultural standards they have, and claim that this cultural standards affect directly on the rate of text messaging adoption. However, enough evidences show that there are certainly different levels of perception toward new communication technologies, which affects the rate of certain technology use in everyday basis. Thus, it is necessary to have further cross-cultural research to evaluate whether this hypothesis is useful in determining that different cultural standards in both countries influence on the rate of text messaging adoption or not, and whether it is applicable for predicting the rate of other technology (or service) adoption such as MMS[27] or mobile internet service.

Language

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[27] Multimedia Message Service

One other thing that I want to assert is the differences in language system of both countries. Like Chinese and Japanese language system, Korean language (Han-gul) is an ideogram, whereas English is a phonogram. Historically, as adopted from Chinese language, Korean people still use majority of their words that are from Chinese language. Thus, even though the shape and pronunciation of certain word is the same, the meaning would be different. For example, Korean word 'Bae' has three different meanings; those are, 'ship,' 'stomach' and 'pear.' This complication of language system is one of factors why it is difficult for foreigners to learn. However, for text messaging users in Korea, this complexity of language makes them create their own words and phrases more easily, and therefore, gives them a great tool to manage one's relationships. Based on my personal experience in Korea, it also gives a great amount of hidden implications, so that most text messaging users tend to use it not only as a way of organizing their appointments or sharing information with each other, but also as a way of keeping their relationship with their friends and family members by sending intimate messages when something is happening, or not. In some case, it is even used for 'love affairs.' Hence, It is necessary to have a data explaining what the main purpose of using text messaging is. It seems that text messaging users in both countries tend to use it as a way of keeping in touch with their family or peers, but further research which shows detailed information about their purpose of using text messaging is in need.

For young people in Korea, this complexity of language system makes them have more desire to create more effective and unique messages, thus it drives users to use text messaging as often as possible. In addition, the intimate messages are more effective when users send them when they are most unexpected.

In case of Canada, as noted above, it seems that there is a difference in purpose of

sending text messages. The English is phonetic, so that unlike Korean language, it is more likely to have hidden implications when it is heard, not seen. In other words, because of intonations and the length of pronunciations people interpret differently even though they are same words or phrases. The recent shapes of text message tend to be more abbreviated form of language, but they are still phonetic, so the meanings of messages seem to be obvious when users read them loud. These factors seem to make mobile phone owners in Canada use voice call rather than sending text messaging, especially when their messages are intimate. With related to this assumption, I argue that the campaigns and attempts (ex. interactivity with TV program) made by carriers for users to adopt text messaging faster are useless effort because messaging itself in those activities is very limited in a sense that people just voted by choosing one of options displayed in screen instead of creating their own messages to their favourites (Elkin, 2003). The main goal of these campaigns was "to educate consumers on how to send text messages and making them "textperts"." (Elkin, 2003) however, because of the uniqueness of text messaging characteristics, the main forces that educate consumers are not the users' manuals (or 'text messaging dictionary[28]') but their peers like friends or members of same interest group. As noted in Honold's article, people who are individualistic like Germans (or Canadians) are more likely to use written manuals as primary source for information on new technologies, whereas people who have collective mind like Chinese (or Koreans) are more likely to get the information from their peer groups. This argument explains the difficulty in educating the text messaging to Canadian people. If you want to create unique messages or use it fluently, you have to spend a huge amount of time on discovering all functions of it. Text messaging service is a 'self-educative.'

Again, the complexity of text messaging, which requires 'special' learning from

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[28] http://www.orange.co.uk/text/dictionary.html (Retrieved in March 13, 2002)

appropriate sources, and the different language system, which makes people use voice call rather than text messaging might affect on the rate of text messaging adoption in Canadian young people. Further research regarding different language system in both countries is necessary.

With the review of recent studies and research, it is found that there are numerous studies that discuss the issue of mobile telephony and its services including text messaging. However, most of studies are related to the fact that the diffusion of text messaging is merely affected by the economic and technical factors that provide the insights regarding the price and technical standards that limit the adoption of text messaging in Canada and that increase that of Korea and other Asian countries where text messaging is prospered. Also, these studies tended to neglect the fact that cultural factors including real life context and cultural standards is affected on the rate of text messaging adoption in different cultures. Based on this argument, I will present the research questions in due consideration of cultural factors which seem one of key factors that have played a huge role in the diffusion of text messaging.

3. Research Questions

Question #1: what are the patterns of differences in adopting mobile telephony among young people – from age of 19 to 30 – of both in Western culture (Canada) and in Eastern culture (South Korea)?

Question #2: How do the cultural and physical differences of social organizations – family, school and public/private spaces – and social values and behaviors in both two cultures affect the diffusion and adoption of mobile telephony in both cultures?

Question #3: How do value-added services of mobile telephony such as text messaging, voice mail and Internet access affect upon the actual diffusion process of mobile telephony in both cultures?

Question #4: Do young people in both cultures perceive these value-added services differently? If so, what are the differences?

Question #5: Considering the fact that value-added services in Canada are not as widely used as in Korea, what are the crucial reasons why Canadians tend to be "laggards" in this adoption process?

4. Methodology

Overall, Qualitative techniques have been used to collect data over past 16 weeks, including focus group interviews, one-on-one interviews, and simple questionnaire. Furthermore, topics and questions asked consisted of personal background and demographic items. Focus group interviews were 'semi-structured interviews' that contained three steps such as conceptualizing, conducting and analyzing group discussions (Berger, 1991). The sample for this research was young people (from age 19 to 30) who own mobile telephone in both Canada and South Korea. Particularly, the target sample size for the research was 30 subjects.

For Korean subjects in Korea, one-on-one interviews were held using Instant Messaging application: MSN Messenger service. Total of 10 participants were included in these interviews. For Korean and Canadian subjects in Canada, focus group interviews were conducted with total of 10 Koreans and 10 Canadians. Korean participants who were recruited by advertisement and the network of investigator consisted of 10 people age from 19 to 30 and they were all students.

Canadians were also recruited by advertisement and the network of investigator, and they were age from 19 to 30.

4-1. Focus group Interviews (primary data)

Interviews are considered as one of the most widely used and most fundamental research methods and they enable researchers to collect information that they cannot gain by observation alone (Berger, 1991). I intended to use, in my research, one kind of interviews that Berger provides and explains: semi-structured interviews. According to Berger (1991), in 'semi-structured interviews,' the interviewer:

> ...usually has a written list of questions to ask the information but tries, to the extent possible, to maintain the casual quality found in unstructured interviews. Focus groups, which are widely used in market research, are considered to be semi-structured interviews. Focus groups are free-form discussions by a group of people, led by a moderator, designed to obtain information about some topic.

Due to the limitations of other research methods similar to 'participant observation' methods, which include that we cannot know much about people's past activities or their history, interviews are much more suited for telling us about the information of the *how* and *what* (Berger, 1991; Hansen et al, 1998). Furthermore, with using an interview method, I was able to discover people's ideas, thoughts, opinions, attitudes and what motivates them by talking to them and asking the right questions (Berger, 1991). Overall, the focus group has been organized in three different groups of young people from age 19 to 30 in post-secondary level of education. Equally important, another prerequisite was given to the participants; they must, at that time, possess the

mobile phone. Specifically, they have been asked several questions regarding three parts: 1) the use of mobile service in general, 2) the objective of using mobile telephone and its value-added services including text messaging, and 3) the 'real life situations' including the differences in living arrangements, cultural standards, and mobility patterns. In addition, they have been asked to fill out a one-page questionnaire before the focus group interview, in order to collect demographic data from the participants.

Sampling and recruitment of groups

I used three samples in my research: Koreans in Korea, Koreans in Canada and Canadians in Canada. In my research project, there is fundamental and crucial condition; individuals must possess the mobile phone or any other wireless communication devices that can send or receive text messages. Also, I recruited the participants who were willing to provide the desired information and must be representative of the population of interest – in this case, younger generation. Besides, they are thought to be of significance to the way in which they use and interpret such technologies. (Hansen et al, 1998).

Numbers of groups and participants

In like manner, the method used to recruit the participants was vigilantly considered. In particular, I recruited people from various sources such as my own 'network of relation' and random approach to people at Ryerson University who have used or owned mobile telephone at least 6 months prior to actual group interviews. To collect thorough data, the participants were assigned to six different groups that had 'gender balance.' Then, each focus group included three to four people.

<u>Interview setting or location</u>

The setting, according to Hansen et al (1998), significantly influence on the nature of participants' general responses and on the group discussion as a whole. Specifically, the setting and location clearly depend on the purpose of the research, convenience, and practical feasibility (Hansen et al, 1998). Hence, two different locations were considered: 'homely' atmosphere or university setting. The home environment has the advantage that more comfortable discussions are held than 'bureaucratic' locations like classroom in university or company laboratory. However, my priority to choose the location was the 'accessibility' for participants to engage more easily and to share their time. Two interviews were held in classroom at Ryerson University and SEL Academy, and one interview was held in the Cafeteria at University of Toronto, and lastly, three interviews were held at investigator's home. The focus groups were held in afternoon or evening, and about an hour to 2 hours of each group discussion was taken place.

In addition, I developed interview guideline for myself to use in each interviews. The interview guideline, as studies suggested, is very crucial when you have more than one group because it enables comparisons between groups; also, for researcher and moderator, it can help to keep discussions on right track. The interview guideline included the sequence of topics or issues that needed to be covered: the nature and extent of prompting and probing, the nature and guideline of using visual aids, and the introduction of technical terms that participants may not be familiar with (Hansen et al, 1998). Berger (1991) suggests that there are some important considerations to keep in mind when interviewing people. I mainly considered Berger's argument as my primary source of the interview guideline for moderator and observer[29].

Next, I tried to keep each focus group taking place in the same contextual background: time and place. Furthermore, the reasonable monetary compensation – 10-dollar movie gift

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[29] See Appendix section for further reference.

certificate – was offered for the participants' time.[30]

[Table 1. Group interviews in Canada]

	Groups	Number of participants	Location	Time	Period
Korean in Canada	Group #1	3	Classroom	Afternoon	1h 10m
	Group #2	3	Classroom	Afternoon	50m
	Group #3	4	Home	Evening	1h 30m
Canadian in Canada	Group #4	4	Home	Evening	2h 10m
	Group #5	3	Cafeteria	Afternoon	1h 10m
	Group #6	3	Home	Afternoon	1h

4-2. One-on-one Interviews (primary data)

I used different methods for the Korean participants: one-on-one interviews using distance communication media – in this case, Internet-based instant messengers (MSN messenger, AOL messenger, Yahoo messenger and ICQ). Participants were recruited from my 'network of relations.' They were from age 19 to 30 in post-secondary educations. As I have not found that this type of method has ever used in actual research, I just followed the guidelines for traditional interview methods, such as telephone interview, letter interview and so forth.

Recruitment of groups

Korean subjects in Korea were recruited by the network of people that the investigator has known.

Numbers of Participants

Same as group interviews, I recruited 10 people who were age from 20 to 30.

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[30] See Appendix 9-4-2 for further details

<u>Interview settings and location</u>

Due to the nature of interview, I carefully examined and considered unpredictable consequences that might be occurred during the session. Thus, I installed every downloadable instant messengers – such as MSN Messenger, Yahoo Messenger and ICQ -, which were believed to be mostly used worldwide. I also installed the latest version of three different messengers to be able to avoid any problems might be caused by the system configuration of each computers of participants. Although there were many options to choose a kind of messenger, in actual interviews, I mainly used MSN Messenger because most participants used it. In addition, MSN messenger was mainly used because it has 'save discussion' function, which enabled me to record data from the interview session.

3) Questionnaire (secondary data)[31]

In the beginning of each focus group interview, the participants filled out a one-page questionnaire concerning their use of the mobile telephone and text messaging. Indeed, the main goal of this method was to supplement the purely qualitative data from the focus group interview.

5. Data and analysis

In this section of paper, data will be presented in terms of five different themes that are related to the research questions. These themes are organized and developed after the research questions were established and the data was collected. I will present the data from each group as equal as possible. The data from the Korean groups were translated into English.

Furthermore, I analyzed each theme based on the data from interviews. It is found that

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[31] See Appendix 9-2 for analysis

each data has provided a significant amount of information that shows how the text messaging is adopted differently by two distinct cultures and the reasons that cause these differences in terms of the rate of adoption in text messaging service. Moreover, I will introduce the graphs of status that show the relation between groups in terms of the theme that is discussed. The graph contains two axes: a horizontal axis that indicates the relevance of data from each group to the theme and a vertical axis that indicates the importance of the theme to each group.

Theme#1 – Resistance (Etiquettes)

Similar to any other applications, with the increase of mobile subscribers so too is there an increase in the resistance to the device. In fact, numerous studies have raised question of mobile phone usage in public places, such as hospitals. Ironically, it turns out to be the most infuriating and most disturbing communication device ever invented; there have been issues around social resistance and etiquettes in public places.

"I cannot take it any more. Although it is getting better these days, some people still use mobile telephone in public places like movie theatre or public transportation. I know it is very annoying, so I do not use it except for sending or receiving text messages." (Korean in Korea)

"Text messaging is very convenient in that I can use my mobile phone without disturbing other people around me when I am in subway or bus. I definitely do not want people to hear my personal matter." (Korean in Korea)

In general, people in Korea are exceptionally aware of the problem generated by the mobile telephone. It has been one of the main social issues since mobile telephone was first introduced

to the public. In particular, using a mobile phone in public places like subways or movie theatres have been in the center of social concerns. Since people are less tolerant nowadays it has been found that due to the disturbance generated when using the mobile phone, people in Korea choose to use the text messaging service instead.

"I use text messaging when I am on subway even though I often play 'bike' game in my device. I do not like the fact that people are using mobile phone in subway. It is usually crowded and I can hear other people's business, but the most annoying thing I have ever come across was when people are sleeping. They could not hear the ring, so it went on and on until the caller hung up." (Korean in Korea)

However, in Canada, it seems that people are less concerned about using their mobile phones in public places due to the low quality of reception in such places. For instance, underground facilities are still not connected, and occasionally, people cannot be reached when they are inside a building. There are those who use their mobile phone in public places like buses or streetcars in Toronto, but the number is relatively low in comparison to Korea. Therefore, the use of mobile phones in public places is not a problem in Toronto, which means it does not have enough occasions for people to notice that it is a problem. With the evidence that has been gathered from group interviews, one can conclude that such a notion is inapplicable in the Canadian context given that there are issues about resistances and etiquettes in using mobile phone in public places. Since it is not a problem to use one's phone in public places, the need for text messaging is not an issue. The difference between Koreans and Canadians in terms of using mobile phones in public places is that, in case of Korea, it has become a wide-spread problem that raises common sense among people that using mobile phone in public places is intolerable and unacceptable.

People who want to use mobile phone to communicate with other people started to seek alternative way that fulfil their need to use it: Text messaging. In regards to the Canadian case, it is seen that there are not enough phones or users to allow such problems, and it is assumed that the cautious behaviour of Canadians in public places also plays an important role in the use of mobile phones.

"I have always tried not to use my phone in public places...because it is little embarrassed when I talk on the phone. People around me seem to stare at me doing it." (Canadian in Canada)

"I think the overall etiquettes in using cell phones in Toronto are great. I hardly see someone on the phone in public places, and they seem to be careful with the voice and the tone." (Korean in Canada)

Interestingly, numerous participants were unenthusiastic towards using mobile phones in public. In other words, the introduction of mobile phone caused several social problems in terms of using it in unrestricted places where people are closely interacting on a regular basis. Moreover, the participants from three different contexts provided distinct perspectives on how to deal with this type of problems. Due to the long history of mobile phone usage in public places, citizens of Korea are well aware of the social nuisance; thus, they are consciously or unconsciously choose not to use mobile phones in public places. In addition, the research demonstrated the unconstructive feelings of the participants about using their mobile phone in such environments. Consequently, this unenthusiastic reaction towards using mobile phones in public places has persuaded the individuals to seek alternative way to communicate: the text messaging system. In essence, text messaging is a significant method of communication among young Koreans.

Even though Canadians appear to be cautious about their behaviour, unlike Korean people, it is found that this cautious mind of using mobile phone in public places is not directly led them to the usage of alternative way of communicating. This assertion is supported by the fact that Canadian users do not make use of text messaging in either private or public places. Graph 1 shows the status of each group in relation to the first theme.

Korean participants in Korea tend to understand the importance of not using mobile phones in public places and this theme is closely related to the fact that text messaging is often used in public places since negative perceptions exists in mobile call usage. However, Koreans and Canadians in Canada seem to understand the fact that the etiquette is not an issue since there is not a sufficient amount of phones and users that would create such problems. For Koreans in Canada, the theme is somewhat related to the fact that they feel that there is less resistance in using mobile phones in public places compared to the Korean context because of the fact that there are not much users around them. For Canadians in Canada, this theme is irrelevant in that there is no evidence that shows the resistance in using mobile phones in public places caused them to use more text messaging.

[Graph 1. Resistance]
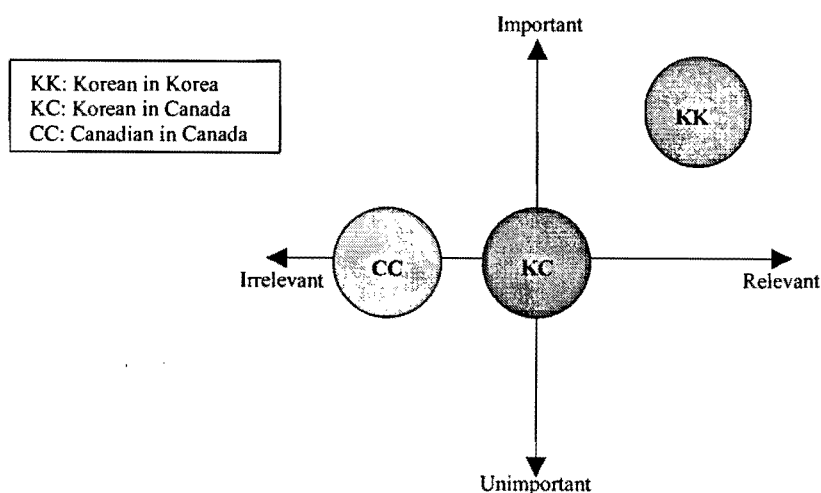
Theme #2 – Connectivity: Reception quality of mobile services

The quandary of connectivity can be raised in both general mobile phones connectivity and in case of text messaging service. In fact, as many of Korean participants in Korea pointed out the issue of the reception quality in using mobile phone in metropolitan Seoul area, the capital city of South Korea, the general reception quality of mobile service seems to be perfect without any problems.

"The reason why I choose this company is, I heard that they have used military-based communication facilities to give better services to customers. So, you can imagine how it has been. It has been great, at least for me." (Korean in Korea)

"I have never wanted to change my company because it is so obvious that they have best quality in reception. Voice is clear and I have never worried that I miss phone calls from my boss." (Korean in Korea)

Indeed, as it is discussed, the reception quality of text messaging seems to follow that of mobile phone; text messaging users in Korea seem to have no problem with using it, and which even makes users in Korea to be satisfied with the mobile service in Korea.

"I chose Telus because I heard that it has better reception quality in downtown area where I am mostly spending time. However, if I go to see my parents who are living in north of Toronto, I cannot use my Telus phone. It simply does not work there." (Canadian in Canada)

As revealed above, connectivity is not an issue in Korean context. Undoubtedly, citizens of

Korea are especially comfortable with what each corporation develops and manages in mobile services. Therefore, I intend to discuss the issue of connectivity somewhat effects on the rate of adoption in text messaging service, which is relatively irrelevant in this situation. Nevertheless, as many of participants indicated the issue of the reception quality in using mobile phone in Toronto area, the general reception quality of mobile service seems to be relatively insufficient in GTA. Thus, they claimed that various places in certain city, such as subway (underground facilities) and suburb areas, or even in elevators have difficulties to reach for reception. Furthermore, this is one of the reasons why most participants prefer to choose their carrier depending on unverified fact that one company has better quality of reception in downtown Toronto area and others do not. Also, this fact led to the question of mobile phone's intrinsic attribute: mobility. In case of text messaging, it seems to follow the pattern in general usage of mobile phone. For example, if the signal cannot be received, most crucial functions in mobile phone such as call/receive, send/receive text messages or accessing the Internet cannot be performed in proper way; hence, lack of mobile reception steered people to become frustrated when they compensate relatively large amount of money, for they are unable to use it anywhere.

Graph 2 shows the importance of connectivity in using mobile phones in two different areas; unlike Korean context, it is very important for Canadians to have a high quality of connectivity in services, in order for them to use text messaging. In other words, this theme is closely relevant for Canadians that they are not using text messaging as often as they can because of poor connectivity in their area.

[Graph – 2. Connectivity]
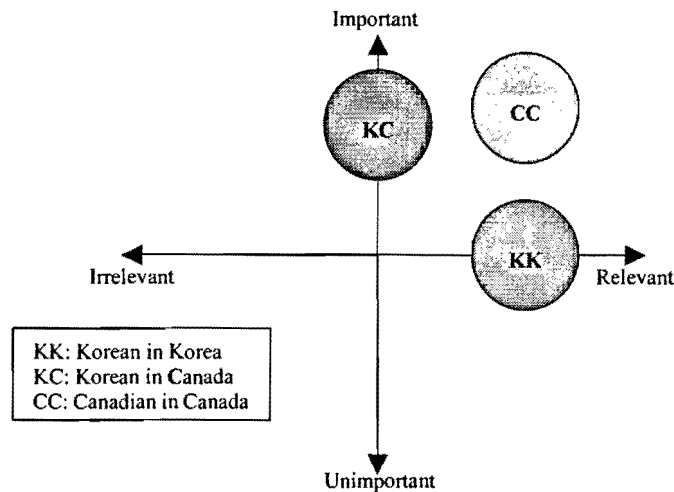
Theme #3 – Real life context

Location: Urban geography of space and place

It is found that the majority of participants in Korea use public transportation to commute. It usually takes about an hour to commute downtown using the subway system or transit bus. While commuting they seem not to use mobile phones in such places, except using text messaging or playing built-in games.

"I usually take subway to get to work. It takes about 40 minutes, and I mostly sleep…(laugh) or read papers in the morning, but I sometimes use text messaging when I am on my way back from the office, in order to arrange my appointment with my friends or family." (Korean in Korea)

"I am driving my car. I actually try not to use cell phone while driving except when I am stuck in the traffic." (Canadian in Canada)

"I usually take TTC, and I think have never used my cell phone in subway... I think there was only one time I got the call when I was in the subway...you know...between Davisville station and Bloor station where trains go up to surface." (Korean in Canada)

Living environment

All of the participants in Korea are currently living with their parents, who enable them to access landline telephone less easy. It is also found that the participants tend to use their mobile phone in late evenings (mostly after 7 pm) since the rates are lower after 7pm and their parents tend to be occupied on the landline phone.

"...mostly mobile phone...because I usually talk with my girlfriend late night and I am going to be dead if I call on her landline phone and vice versa." (Korean in Korea)

"I use my cell phone when I am home because it is the only phone that I have. I did not need a landline phone because it would cost more money and I am just foreign student here...(laugh)." (Korean in Canada)

"Sometimes I use a landline phone, but it depends on the situation. If...well...I mostly use my cell phone because it is easier for me to use phone book (memory) in my cell phone. I think... I can't remember all the numbers, so I use it." (Canadian in Canada)

The real life situations similar to that of traditional landline phone settings in households and mobility patterns in Korean seem to fully impact the rate of text messaging adoption. As reported earlier, the mobility patterns of young Koreans demonstrate the extent to which they expose

themselves in public places when they continuously move one point to another, obviously more so than Canadian counterparts. Associated with the patterns of mobile phone usage in the home environment, the research was able to discover the cultural and traditional mindset of Korean people toward communication technologies. In addition, the landline phone was dominated by the household authority, the parents, who are responsible for expenses incurred by the use of such services. Unquestionably, most Korean families are hierarchical based with the economic responsibility assigned to the oldest member. This statement fully effects the adoption and usage of communication technologies among family members.

However, in the Canadian context (including Koreans in Canada), this theme – mobility – is not relevant in that Canadians are usually using their car to commute as far as they are living in suburb area where public transit service is limited at some extent, although they do use public transportation from time to time. Even though they use public transit service, it is seen that the issue of connectivity can be applied. However, the usage of text messaging (as well as using mobile phones in general) is also limited by the insufficiency of connectivity.

[Graph 3. Real life situations]
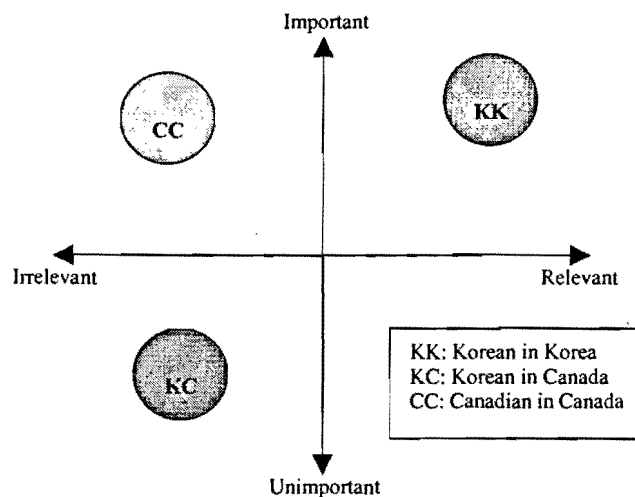
Theme #4 - Social status

As most interview participants from Korea pointed out, the brand image of phone company is crucial to the younger generation who see the mobile phone as a symbol of their identity. Since young people are concerned about how they are perceived by other people in the same interest group, the phone brand that they are using plays a key role in this state. In this regard, the choice of phone company is determined on the popularity and reputation of the particular company. Accordingly, this difference in reputation is affected directly on the mind of younger generations who are always worried about how they are represented through materialistic objects with fancy external designs.

"I am using SK Telecom because it has significant brand image that makes people see me as significant person. Regardless to say the fact that it was the first company that carried mobile service in Korea, its better reception quality makes it look like better company. So, even though the plan fee is more expensive than others, I am using it. In addition, I heard that, according to some research survey, most CEOs in Korea are using it, which makes my feeling better." (Korean in Korea)

"...I am not going to change my phone company because it gives me 'self-confidence' and 'pride' that other people cannot have it. If I use other companies, I am going to be embarrassed when I give my number to other people." (Korean in Korea)

Moreover, text messaging has been a key factor that maintains the social life of young people. In particular, most of the participants in Korea indicated that they tend to use the text messaging system with their peers and intimate partners. Also, they believed that text messaging, which

enables them to keep their relationship with their closer, is most effective in the relation of friends and intimate partners. In addition, it was found that the messages they sent and received in ordinary day were mostly informal, which allowed them with the ability to create their own messages with their own ideas.

"I think it is the most effective among friends. I have never sent it to my family members or for business purpose because I think that it is better when you talk with your family face-to-face. Also, I think it is better when you call or meet someone in business situation." (Korean in Korea)

———

"I mostly send it to my girlfriend because it shows my feelings toward her when I send a message to her. It is small act but powerful, I believe." (Korean in Korea)

On the other hand, some of the participants in Canada raised the issue of the reputation of phone companies pointing out that there appears to be a difference in each company. They stressed that Fido seems to be a low quality company whereas Rogers and Telus seem to be mediocre, and Bell has a highest reputation among the four companies.

"...I rather choose Rogers... because I don't like the devices that Fido offer. They are too old and not fancy enough. They seem...I don't know...low-end?" (Canadian in Canada)

"I think...in that case...I'd rather call because I think...it's kind of stupid when I type, "I love you" on my cell phone... well...I'd say it in person looking at my girlfriend's eye...(laugh)." (Canadian in Canada)

The collected data from both countries simultaneously confirms the significance of social status in youth culture. As many studies have stressed (Ozcan and Kocak, 2003; Roos, 1993; Kopomaa, 2000; Ling, 2001), communication technology provides the opportunity for young people to express their distinct taste and gives service providers the opportunity to attract users by offering various value-added service and numerous 'face-lift' kits for mobile phones.
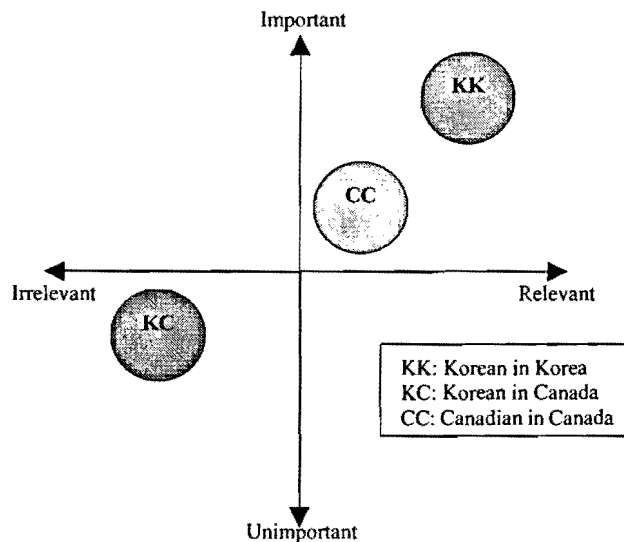
It is argued here that there are differences in using text messaging as a way of maintaining the social status and similarities in the motivation (or need) to buy a mobile telephone between young people in both Korea and Canada. Above all, the fact that young people use the mobile service because of their desire to keep in contact with their peers seems to be one of the main reasons shown in both cultures. As indicated above, in the process of buying mobile telephone, it is seen that young people in both cultures have desire to own the latest version of phone, which provides significance in that they are 'updated' or 'upgraded' by having certain kind of phone like mobile phones with camera function or color display. In other words, young people in both cultures identify mobile phone devices as a key factor that indicates their social status, which is already established within their interest groups. In addition, the young people of both cultures tend to care about the reputation of service providers when they initially subscribe the service. By choosing certain provider in Korea, Koreans seem to feel that they are seen as significant person. Canadians also pointed out about the importance of choosing phone company and relevance to their social status.

Although these similarities are obvious in both cultures, there are differences in using text messaging as a mean of keeping and managing their social status. In case of Korea (or most Asian countries), using mobile telephone is no longer significant to young people because everyone has one. Thus, they had to find another method to show that they had been 'upgraded,'

and it was text messaging that fulfilled their desire to be "leading" (or early) adopter in that category. Text messaging might be concerned as just one simple sort of communication methods, but it is also a powerful weapon that integrates users' availability to communicate because of its potentiality in creating unique messages that attract young people the most. However, in Canadian context, most of participants did not address the importance of using text messaging as a way of keeping their social status. To them, it is seen as unnecessary way of communicating with their peers. In addition, it is found that some Canadians think that text messaging is more effective in business than in private use because it would be stored for future reference.

For Koreans in Canada, text messaging is used to be a great way when they were in Korea, but after coming to Canada, they lost their interest in using it because of the lack of connectivity, as well as interest in using mobile phone service in general.

[Graph 4. Social Status]

Important

KK

CC

Irrelevant   Relevant

KC

KK: Korean in Korea
KC: Korean in Canada
CC: Canadian in Canada

Unimportant

Theme #5 - Critical Mass

Most of participants in Korea stated that the main reason why they chose certain brand of phone company or device is that they could enjoy the service with their peers. In other words, one participant highlighted that he chose the same phone company as his friends with the intention that he could use text messaging service within same networks as his friends had. Namely, this factor made users divided in two parts: CDMA users (SK Telecom and Shinsegi Telecom) and PCS users (Korea Telecom Freetel, LG Telecom and Hansol Telecom). However, this situation soon became invisible after technical problem (interoperability) was solved.

"...I chose that company because most classmates in my high school used it. The phone was inexpensive and I could send text messages easily to my classmates. My teacher even had same kind of phone that we used." (Korean in Korea)

"...I chose it because I could send text message to my best friend who had same service from same company I subscribed." (Korean in Korea)

"I chose Telus because all my friends use it. When I came here in 2000, I had no idea which phone company is better, so I asked to my friends and they said that Telus had better connection than other companies in our school. This is reason why I chose Telus." (Korean in Canada)

"well...I think I got it several times from the company that I subscribed. All of them were actually the advertisements and the promotions, and sometimes it is very annoying when I found out that it was ads." (Canadian in Canada)

Most of Canadian participants pointed out that they are not using text messaging service except for the advertisements from their service provider. It is seen that there is no basis for text messaging proliferation in Canadian context because there is still not enough people using it, even though many studies, as noted above, claimed that there is significant increase in using text messaging in Canada arguing that text messaging is fast growing application in Canada because of the exclusion of problem which has been crucial factor in the lateness of text messaging adoption: interoperability. As shown in data, young people in Canada still feel that text messaging is not attractive feature, which requires enormous amount of effort to learn how to use it. Some participants simply argued that they are not using it because everyone else around them is not using it, so there is not enough chance for younger audiences in Canada to use it in that the nature of text messaging is that the 'how-to' is usually transferred by the users who have already been using it.

[Graph 5. Critical Mass]

KK: Korean in Korea
KC: Korean in Canada
CC: Canadian in Canada
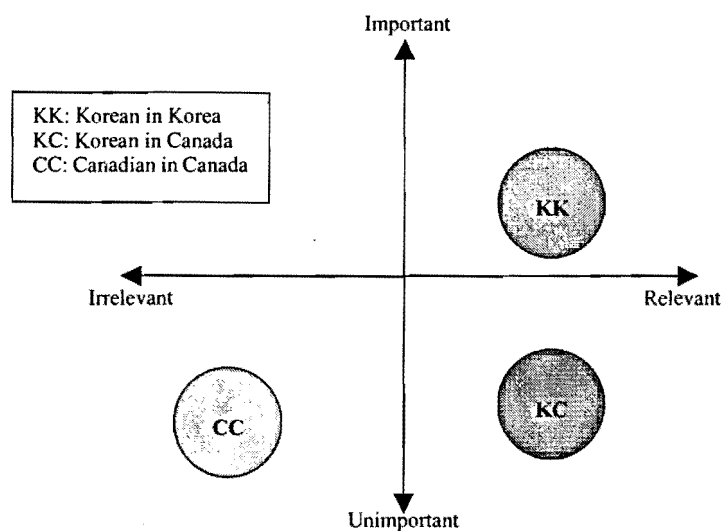
Themes #6 – Language

"I have seen a girl doing something with her mobile phone in subway, and I was curious what she had been doing very long time, so I watched her very carefully. Can you imagine what I found? She has been chatting…with her mobile phone. I knew that I could do it with mobile phone, but it was the first time I have ever seen thumbs that fast. It was amazing." (Korean in Korea)

"…I usually send text message when I want to say something intimate to my girlfriend. It is very easy for me to send it instead of saying it in person or calling because it is, I think, more effective in that way. Especially, it is so effective when I send apologizing message to my girlfriend." (Korean in Korea)

Besides, the majority of Korean participants in Canada declared that they still use text messaging even though it has to be written in English. Therefore, they developed their own way of using text messaging by sending their messages of Korean words and phrases, which is phonetically written in English. Generally, they discovered that it is very unpleasant way of sending or receiving the messages given that it becomes a long sentence; thus, they were unable to finish the sentences they want to write in mobile phone display. In addition, the evidence proves how it is possible for receivers to misunderstand what they see on screen because the message can be read in different ways. This unique text messaging style is useful as long as Korean language is an ideogram, which is not a phonetic language.

"I use it when there is an occasion, but it is very limited when you say it in English." (Korean in

Canada)

"Here is my story. I am not using text messaging because the keypad is too small for me to type. I even use extra keyboard for my laptop computer because I can't stand it using keyboard on my laptop. I have always mistyped." (Canadian in Canada)

"I don't understand why they are using it. Sometimes I get the messages from my friends and if it is written in short form, I just ignore it." (Canadian in Canada)

"I think it is the way of typing keypad on the cell phone…I changed my cell phone device three times. The first one was stolen and I lost the second one and I changed it when I changed the company, and the thing is all of devices that I have used had different way of typing keypad, so I wasn't even trying to learn it… and for me…calling and receiving a call is enough." (Canadian in Canada)

It is evident that there is no obvious language barrier in using text messaging service in Korea. Unlike Korean participants in Korea, most of participants in Canada mentioned that they are having a trouble with keypad on their devices. To explain, many Koreans do feel comfortable with putting words on display because Korean language is consisted of three parts, which make it easier than English. In other words, Koreans can use their both thumbs: using left thumb to put first letter, which are usually displayed on left side of keypad; using right thumb to put second letter, which usually displayed on right side of keypad; and using left thumb again to put third letter if necessary. Hence, this language factor might impact significantly on the frequency of using text messaging, and make users enable to chat more effortlessly with their friends using

keypads.

In relation to this, most Canadians do feel uncomfortable in using text messaging because of smaller keypad and the way it is typing. Like most western culture people whose body parts are usually larger than eastern people have, Canadians are in trouble using small keypad like laptop keyboard or mobile phone keypad. It is also found in the interview, that this issue of using small keypad is related to the fact that Canadians are more likely to have 'palm pilot,' which contains telephone function, for their communication devices because it is easier for them to carry or use. With this 'palm pilot' device, users can use small stick to input data on display without bothering their big thumbs.

[Graph 6. Language]
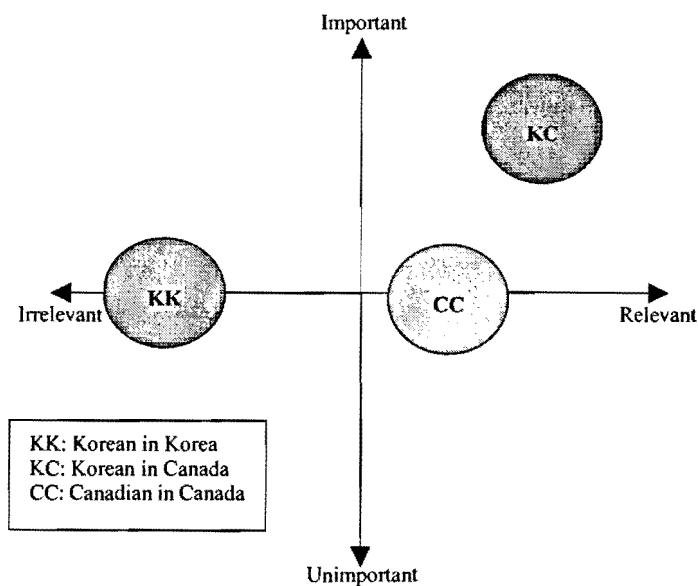
7. Conclusions

In the beginning of this paper, I discussed that the use of text messaging is increasing in the Canadian market after the effort to unify standards. However, the market structure was not enough to compete with overseas like Asia and Europe when it was introduced. Researchers asserted that the reasons behind this are the lack of inter-operability and reasonable price.

After reviewing and examining existing studies, I realized that there could be reasons why the patterns of text messaging adoption in Canada are different from that of Korea. In order to address this issue, I decided to look into Rogers' diffusion theory, which provides insights of understanding how the diffusion process works and what the critical elements are. Among those elements, his notions of 'attributes' and 'critical mass' were examined. I also looked into cross-cultural analysis, which provided background information that determines the actual differences of contexts in both countries. Among those determinants, the role of 'status symbol' in the adoption process, the real life 'context' of young people in both countries and dimensional concepts from traditional intercultural psychology were addressed.

From these alternative approaches, I conclude that the cross-cultural perspective is important when examining the use of new communication technologies in cultures, because it seems that people in different cultures perceive and use them in a different way, based on their socio-cultural environments, and the key determinants supporting this argument could be the different contexts (including location), social values and culture itself.

The hypothesis was experimented by conducting various interviews with Research Questions, and from the data from those interviews, I found that there are significant number of differences in adopting text messaging service in two different countries. For research question

#1, it is found that there are differences of patterns in adopting mobile telephony among young people in both cultures. Korean young people tend to get heavy peer pressures when they adopt a mobile phone and its services, because it is seen as the way of liberating themselves from the authorities like their parents. It is also seen as the artefact that they can control, manage and develop with the help of peers.

I also argue that cultural differences in both countries have an important role in adopting mobile phones and its services. Cultural differences such as tradition, cultural standards and living environment were all played together as one factor that changed young consumer's attitude toward this communication technology and altered the way they adopt such technology.

This study is very important in that it provides alternative perspectives on how mobile application is affected by other factors that have not been addressed before. In this respect, this research would make a contribution to further research in terms of providing the new understandings of text messaging adoption.

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9. Appendix

9-1. Questions

<u>Mobile telephone in general</u>

How long have you been using mobile telephone?

Which company have you subscribed during that period?

How would you describe overall quality of mobile service in Canada?

What is your mobile service provider? Bell Mobility, Rogers & AT&T, Fido or Telus?

How would you describe overall quality of mobile service of your provider?

How would you describe the strengths of your carrier?

How would you describe the disadvantages of your carrier?

What was the most important reason when you subscribe your carrier?

How often have you changed your device?

What kind of cell phone device have you used? Nokia, Motorola, Samsung, or anything else?

Would you describe your current device? Manufacturer, functions and features.

Which function do you mostly use?

What are the disadvantages of your current device?

Which function do you think should be added on your device?

Who do you talk with using mobile telephone mostly?

What time of day do you usually use your mobile phone?

Which phone do you usually use when you are in your house? Mobile phone or landline phone.

Real life situations

If you are student, how long does it take time to go to school everyday?

If you have a job, how long does it take time to go to work everyday?

What is your main mean of transportation to commute?

On the way to school or work, what do you usually do? Reading, chatting with friends, calling?

How often do you use your mobile phone in that period of time?

Where do you usually "hang out" with your friends?

How far is that place from your home?

What is your main mean of transportation at this time?

On the way to meet your friends, what do you usually do? Reading, chatting with friends, calling?

Value-added services

What kind of function in your mobile telephone device do you often use other than calling?

Do you think that it is necessary to have a device that has more functions on it?

Have you ever used text-messaging service?

What is your current plan for mobile service?

What are the reasons why you choose your plan?

Is text-messaging service free in your plan?

If not, how much do they charge per message?

How many messages do you usually send or receive in a day?

Do you think it is easy to send or receive text messages using your own device?

What are the main problems when using text-messaging service?

How do you feel about acronyms or emoticons often used in text messaging?

Have you ever created such acronyms or emoticons using your own idea?

How did you get those acronyms or emoticons from?

How do you think about receiving ads via text messaging service?

In which one of following relationships is most effective when you use text messages? And why?

1. Business (work)

2. Lovers or between husband and wife

3. Friends

4. family

How do you think about mobile phone etiquette in Canada? especially in public places.

Do you think it is necessary to restrict mobile telephone use in public places?

If yes, what kind of place do you think that use of mobile telephone should be prohibited? And why?

9-2. Questionnaire

Gender and age

Male (   )

Female (   )

Age (   )

Marital status

Married (   )

Single (   )

Divorced (   )

Education

High school ( )

Colleges (   )

Universities ( )

Ethnicity

Asian (   )

Caucasian (   )

Other (   )

Analysis

Among 20 participants, 12 people were female while 8 people were male, and 13 people were age from 19 to 24 and 7 people were age from 25 to 30. Only two people were married while lest of people were single, and all of participants had a post-secondary education. Moreover, 6 people were Caucasian while 14 people were Asian.

9-3. Quotations

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Noted that I had to modify some of responses from the participants due to participant's inappropriate use of language. In addition, I had to adjust some of responses to clarify the meanings that participants wanted to address.

Ex) Original response: "um.... I don 't give a damn about it because I really don't know how to use it...and...all of my friends don't use it, simple as that..."

Modified response: "I do not care about it because I do not know how to use it, and I think all my friends are not using it."

9-4. Ethics Approval

9-4-1. Application Checklist for Ethics Review of Research Involving Human Subjects

Title of the Research Proposal: The diffusion of text messaging: Comparative perspective

Student Researcher: Jeongmo Ahn   Academic Title: Graduate Student

Department: The Joint Graduate Programme in Communication and Culture

E-mail Address: jahn@ryerson.ca   Telephone Number: (416) 733-8047

Projected Dates of Data Collection and Analyses:

Begin Recruitment Date: February 17, 2004   End Analysis Date: April 30,

2004

Funding Source:

▪ Not funded

Will this study involve the use of existing data, documents, records, pathological specimens, or diagnostic specimens?

▪ Yes

If yes, include a copy of your authorization to access this data, if the data are not publicly available.

▪ All data will be accessible through public documents, including online documents and journal

articles.

Subjects to be recruited (Check all that apply):

a) Adults (18+ years)

b) Children and minors (under 18)   □

c) Cognitively impaired persons   □

d) Prisoners   □

e) Elderly/aged persons   □

f) Minorities   □

g) Students (describe)

- Ryerson or York University students

- ESL students in Toronto

h) Using existing data, no subjects will be recruited   □

i) Illiterate subjects   □

j) Subjects whose primary language is not English

k) Employees or subordinates of the investigator   □

l) Employees of institutions associated with the study   □

Data will include (check all that apply):

a) Names of people   □

b) Addresses   (country only)

c) Telephone numbers   □

d) Age

e) Gender

f) Ethnicity

g) Marital status

h) Income   □

i) SIN   □

j) Job Title   □

k) Names of Employers   □

l) Types of Employers   □

m) Other unique information- specify

- Education level

- Duration of stay in Canada (Koreans in Canada only)

Are codes used to link data to subjects?

- Yes

Is compensation offered?

- Yes

If yes, please state the type and amount of compensation or reimbursement of expenses:

- Movie gift certificate, $ 200 ($10 per person, Koreans and Canadians in Canada only)

The Number of Subjects: 30

- Koreans in Korea: 10, one-on-one interview

- Koreans in Canada: 10, 2-3 groups, 3-5 students per group

- Canadians in Canada: 10, 2-3 groups, 3-5 students per group

Method of recruiting:

- Koreans in Korea: network of the principal investigator

- Koreans in Canada: advertisements (see attachment #1)

- Canadians in Canada: advertisements (see attachment #1)

Will potential subjects be involved in:

a) an intervention of manipulation?   No

b) deception?   No

Potential Risk Exposures: Social

Instruments (submit a copy of all instruments to be used):

- questionnaire/interview questions (see attachment #2)

Data will be recorded by:

a) Written notes

b) Audio tape

c) Videotape/camcorder

- Questionnaire will be completed in hard copy format

Method of Instrument Administration:

a) in person (group)

b) in person (individual)

c) electronic mail

- also MSN messenger

Findings used for:

- Other (specify): Major Research Paper for graduate programme

Method of obtaining consent:

- Written consent form (see attachment #3)

- Korean version of consent agreement attached (see attachment #4)

Method of obtaining consent/assent from children or subjects unable to sign legally valid consent:

- None

Principal Investigator: **Date:**

Graduate and undergraduate initiated research: This signature verifies the attached protocol meet with Faculty approval and is in compliance with procedures/regulations designed to protect human subjects.

Authorized Faculty Representative:

Date:

9-4-2. Application for Ethics Review of Research Involving Human Subjects

Application for

Ethics Review of Research Involving Human Subjects

Research Ethics Board

Ryerson University

Principal Investigator: Jeongmo Ahn

The Joint Graduate Programme in Communication and Culture

Ryerson University

Supervisor: Dr. Catherine Middleton

School of Information technology Management, Ryerson University

February 03, 2004

The diffusion of text messaging: A comparative perspective

(Working Title)

Study Abstract

The proposed study will examine the differences in adopting text messaging service between young Korean people and young Canadian people applying ethnographic methods including interviewing and focus groups. Interview will be done with young Korean people who live in Korea. Focus groups will be conducted with young Korean and Canadian people living in

Canada. The research will provide the insights on how and why users in both Korea and Canada adopt text messaging services differently. This study will benefit consumers and wireless communication service providers. There are no physical, economic, psychological, or legal risks in this project, while there might be minimal social risks when conducting focus groups. However, risks will be notified and managed in the process of collecting consent from participants.

Statement of Purpose and Background

The proposed research is to be conducted in order to complete a Major Research Paper for a Master's degree. The problem to be examined involves the slow rate of text messaging adoption among young people in Canada and the insufficient level of adoption research based upon cross-cultural and comparative perspectives.

The primary objective of this research paper is to study the adoption patterns of both Canadian and Korean mobile telephone users in relation to the adoption of text messaging service. A secondary purpose is to examine the differences in 'real life situations,' which consists of differences in living arrangements, cultural standards and mobility patterns, among young people in two different cultures in order to determine the extent to which these differences influence the rate of text messaging adoption.

The research is significant for three reasons. First, since text messaging was introduced in North American market in 2002, research that is based upon cross-cultural perspectives has not been conducted. Second, the research will address the issues of cultural barriers and obstacles in adopting text messaging in North America where the rate of text messaging adoption is

relatively slower than that of the Asian market. Third, the research is significant because of its implications for understanding of the nature of market and future marketing strategies.

The theoretical perspective for the proposed study is diffusion theory by Everett M. Rogers (1995). Diffusion theory, which has been utilized in most theory-based research that examines the adoption of communication technologies, is useful in examining attributes that affect the patterns and rates of adoption or general ideas around the issues of the diffusion of innovations. Cross-cultural comparative approach is another theoretical perspective that contains dimensional concepts that are useful in examining the effect of culture, and cultural standards that "emphasize the context in which specific cultural concepts become relevant" (Honold, 1999).

The findings from this study will be used for major research paper by the principal investigator.

Research Questions

Question #1: what are the patterns of differences in adopting mobile telephony among young people – from age of 20 to 30 – both in Western culture (Canada) and in Eastern culture (South Korea)?

Question #2: How do the cultural and physical differences of social organizations – family, school and public/private spaces – and social values and behaviors in both two cultures affect the diffusion and adoption of mobile telephony in both cultures?

Question #3: How do value-added services of mobile telephony such as text messaging, voice mail and Internet access affect upon the actual diffusion process of mobile telephony in both cultures?

Question #4: Do young people in both cultures perceive these value-added services

differently? If so, what are the differences?

Question #5: Considering the fact that value-added services in Canada are not as widely used as in Korea, what are the crucial reasons why Canadians tend to be "laggards" in this adoption process?

Subjects

Subject Characteristics

Subjects will be approximately 30 people who are age between 19 and 30. The fundamental requirement for subjects is that subjects must own a mobile telephone. Subjects will be categorized in three dimensions: 1) Korean subjects in Korea, 2) Korean subjects in Canada and 3) Canadian subjects in Canada.

Recruitment Source and Methods

Korean subjects in Korea will be recruited by the network of people that the investigator has known. Korean subjects in Canada will be recruited by posting advertisements in ESL (English as a Second Language) institutions in Toronto. Canadian subjects in Canada will be recruited by posting advertisements in Ryerson and York University.

Informed Consent Process

Korean subjects in Korea (one-on-one interview):

Potential recruits will be reached by principal investigator with brief conversation that contains

the purpose of study and the nature of interview. If consent is given, they will be scheduled to interview at any time they feel comfortable. In addition, at the beginning of interview, they will be asked to state that they agree to participate in the study.

Korean and Canadian subjects in Canada (focus groups):

Both Korean and Canadian subjects who live in Toronto area will be contacted after they respond to an advertisement in a certain location which is described above. After the investigator contacts them, they will be given brief information about the study and will be asked to participate in the study. After they agree to participate in the research, they will be given more detailed information – time, place and compensation – about the research and will be asked to fill out the brief contact information – telephone number or email address – only for the purpose of arranging the meeting.

Study Location

The location of this study will be arranged after recruiting participants because of travelling. Study will be conducted in the place where most of participants feel comfortable.

Potential Problems

None anticipated

Research Design and Methods

Research Design

The research will use a qualitative method including focus group interviews, one-on-one interviews and short questionnaire. Topics and questions to be asked will consist of personal background and demographic items. Focus group interviews will be 'semistructured interviews' that consist of three steps such as conceptualizing, conducting and analyzing group discussions (Berger, 2000). The sample for this research will be young people (from age 19 to 30) who own mobile telephone in both Canada and South Korea. The target sample size for the research will be approximately 30 subjects. The data analysis for this research will be conducted by using the content analysis method. Three types of data will be collected: 1) transcripts from interviews, which will be primary data, 2) brief survey from the participants in interviews and 3) visual data from interviews.

Tests, Questionnaires, and Interview Guides

Please see the attached files.

Deception or Incomplete Disclose

None applicable

Potential Benefits

Anticipated benefits to the subjects will be the opportunity for them to think about the current phenomena of mobile telephone that is saturated deeply in our everyday life. Especially for the subjects in Korea, you will have a chance to re-examine their everyday communication environment in Korea where communication technology like mobile telephone has become

"must-have" gadget among young people. For academic researchers, this study will provide different perspectives that have not drawn attention to because this study will examine the dynamics of cultural differences in adopting certain communication technology. Not to mention that Canada has most dynamic set of various cultures and that the saturation of mobile telephone in this country is rapidly growing last few years, it is worth examining different aspects of culture in adopting mobile telephony in this country. The study will also provide comparative perspective by examining Korean circumstances that are different from the Canadian context.

Risks

Identification of Risk

This research has minimal risks. There is potential social risk for participants in focus groups, who are worried about sharing their opinions in front of other participants. There are no other known risks in this research.

Management of Risk

For the participants who are concerned about sharing their opinions in a public meeting, they will be reminded at the beginning of each sessions that they can leave at anytime they want if they feel uncomfortable to share their opinions.

Describe provisions made to maintain confidentiality of data

Collected data will be accessed *only* by both principal investigator (Mr. Jeongmo Ahn) and supervisor (Dr. Catherine Middleton). Data will be stored until the research is done. Data will be

stored on two computers owned by Mr. Ahn and Dr. Middleton. Access to these computers and files is password protected. All subjects in this research including focus groups and individual interview will be informed that while confidentiality can be maintained by the principal investigator and supervisor, its maintenance cannot be guaranteed by the other participants of the focus group. The findings from this research will generally be presented in summary form, but some individual responses will be presented as part of findings. Individual responses will be included as direct quotations, with no identifying information provided.

Data Monitoring

N/A

Assessment of Risk

Risks are minimal and insignificant.

Costs

Participants may spend some money on travelling to study location.

Compensation and Incentives

While all subjects in Korea will not be compensated, all Subjects participated in Canada will be compensated for each group discussion. The gift certificate for movie will be offered. Total estimated value of the compensation would be $200 (can).

Investigator Experience

The investigator is graduate student at Ryerson University and has completed

coursework looking at diffusion of communication technologies.

Application Checklist

- at the beginning of the document (starts on p.1)

9-4-3. Consent agreement for Canadian participant

Ryerson University

Consent Agreement

This agreement will be translated into Korean by the principal investigator, for use with Korean speaking research subjects.

Title: The diffusion of text messaging: A comparative perspective

You are being asked to participate in a research study. Before you give your consent to be a volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators

Name: Jeongmo Ahn

The Joint Graduate Programme in Communication and Culture

Ryerson University/York University

Research Supervisor: Dr. Catherine Middleton

Purpose of study

The primary objective of this research paper is to study the adoption patterns of both Canadian and Korean mobile telephone users in relation to the adoption of text messaging service. A

secondary purpose is to examine the differences of 'real life situations,' which consist of differences in living arrangements, cultural standards and mobility patterns, among young people in two different cultures in order to determine the extent to which it influences the rate of text messaging adoption. The findings from this study will be used for major research paper by the principal investigator.

Description of the study

- Procedures 1 (focus groups in Canada)
  - **Questionnaire**
  - Introduction
  - Main questions
  - Coffee break (if necessary)
  - Questions and Answer
  - Closing comments
  - Place: to be arranged
  - Duration: Approximately two hour
    - **Filling out questionnaire: 10 minutes**
    - Introduction: 5 minutes
    - Main questions: 45 minutes
    - Coffee break : 10 minutes
    - Main questions : 40 minutes
    - Closing comments : 10 minutes

- ■ Questionnaire

  - ◆ Demographic information

    - ● Age, gender, occupation, nationality and marital status

  - ◆ Additional background information (for Korean subjects in Canada)

    - ● Duration of stay in Canada

    - ● Duration of possessing mobile telephone in Korea

- ● Procedures 2 (subjects in Korea)

  - ■ Send questionnaire to subjects using 'file transfer' function in the MSN messenger

  - ■ Introduction (5 minutes)

  - ■ Main questions (30 minutes)

  - ■ Closing comments (2 minutes)

What is Experimental in this Study:

None of the procedures used in this study are experimental in nature. The only experimental aspect of this study is the gathering of information for the purpose of analysis.

Risks or Discomforts

This research has minimal risks. There is potential social risk for participants in focus groups, who are worried about sharing their opinions in front of other participants. There are no other known risks in this research. For the participants who are concerned about sharing their opinions in a public meeting, they will be reminded at the beginning of each sessions that they can leave at anytime they want if they feel uncomfortable to share their opinions.

Benefits of the Study

By participating in this research, you will have the opportunity to think about how mobile telephones are deeply embedded in our everyday life. Especially for the subjects in Korea, you will have a chance to re-examine your everyday communication environment in Korea where communication technology like mobile telephone has become "must-have" gadget among young people. For academic researchers, this study will provide different perspectives that have considered previously. This study will examine the dynamics of cultural differences in adopting certain communication technologies. Canada has a dynamic set of various cultures and the saturation of mobile telephone in this country is rapidly growing last few years, therefore it is worth examining different aspects of culture in adopting mobile telephony in this country. The study will also provide a comparative perspective by examining Korean circumstances that are different from the Canadian context. I cannot guarantee, however, that you will receive any *individual* benefits from participating in this study.

Confidentiality

The information and data gathered from this study will be accessed *only* by both the principal investigator and supervisor. This study will use audio and videotapes for recording information, which will be used only for the purpose of analysis. Those data and information will be stored for one year, and they will be destroyed after that time. Data will be stored on two computers owned by Mr. Ahn and Dr. Middleton. Access to these computers and data is password protected. If any subject wants, he or she will be able to review the tape(s) prior to publication. By this procedure, subjects will have a chance to withdraw their participation if they

feel uncomfortable later with their opinion in discussion group.

The findings from this research will generally be presented in summary form, but some individual responses will be presented as part of findings. Individual responses will be included as direct quotations, with no identifying information provided.

Note that the confidentiality of focus group information can be maintained by the principal investigator and supervisor, but maintaining confidentiality of this information is not guaranteed by the other participants of the focus group.

Incentives to Participate

A gift certificate will be offered only to participants in Canada. To obtain the incentive, participants in Canada must attend meeting and spend at least 75% of total session time.

Costs and/or Compensation for Participation

Participants may pay for their travel costs, although investigator will adjust the location where most of participants feel comfortable.

Voluntary Nature of Participation

Participation in this study is voluntary. Your choice of whether or not to participate will not influence your future relations with Ryerson University or York University. If you decide to participate, you are free to withdraw your consent and to stop your participation at any time without penalty or loss of benefits to which you are allowed.

Questions about the Study

If you have any questions about the research now, please ask. If you have questions later about the research, you may contact.

Jeongmo Ahn (Principal investigator)

The Joint Graduate Programme in Communication and Culture

Ryerson/York University

Telephone: 416-733-8047

E-mail: jahn@ryerson.ca

Dr. Catherine Middleton (Supervisor)

School of Information Technology Management, Ryerson University

350 Victoria Street, Toronto M5B 2K3

Telephone: (416) 979-5000 ext. 7923

E-mail: cmiddlet@ryerson.ca

If you have questions regarding your rights as a human subject and participant in this study, you may contact the Ryerson University Research Ethics Board for Information.

Research Ethics Board

c/o Office of Research Services

Ryerson University

350 Victoria Street

Toronto, ON M5B 2K3

Agreement

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about this study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. In addition, your signature also indicate that you agree to be audio/video-taped. You have been given a copy of this agreement.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

Name of Participant (please print)

Signature of Participant   Date

Signature of Investigator   Date

9-4-4. Consent agreement for Korean participant.

9-4-4. Consent agreement for Korean participant.

<div align="center">

라이어슨 대학교 **Ryerson University**

동의서 **(Consent Agreement)**

</div>

▷ 연구제목: 문자메세지의 전파: 비교관찰

이 문서는 연구에 참여하기 전에 기본적으로 알아두어야 할 사항들을 기록해놓은 것입니다. 참여여부를 결정하기 전에 이 문서를 자세히 살펴보시고, 만약 궁금한 점이나 이해가 안 되는 부분이 있을 경우엔 반드시 질문 하시기를 바랍니다.

▷ 연구자:

이름: 안정모 (Jeongmo Ahn)

소속: 라이러슨/욕 대학교 석사과정 Communication and Culture 전공

지도교수: Dr. 캐서린 미들턴 (Cathrine Middleton)

▷ 연구목적

이 연구의 첫번째 목적은 문자 메시지의 도입과 사용에 관련하여 캐나다인과 한국인

휴대전화 사용자들의 사이의 패턴의 차이점을 연구하는 것입니다. 두 번째 목적은 양 국가국민의 '실제 생활 환경들', 예를 들면, 주거범위, 문화적 기준들 그리고 이동 패턴들을 비교하여, 이러한 요소들이 어떻게 또는 어느 정도 문자 메시지의 도입 비율에 영향을 주는지에 대하여 연구하는 것입니다.

▷ 인터뷰 장소: 추후 통보

▷ 인터뷰 시간: 약 2시간

▷ 인터뷰 과정

1. 간단한 질문지 작성 (약 10분)

   A. 기본적인 배경이 되는 사항들 (나이, 성, 직업, 결혼여부, 국적)

   B. 휴대폰 소유와 캐나다 생활에 관한 기본적 사항들 (체류기간, 소유기간 등)

2. 소개 (약 5분)

3. 주요 질문 (약 45분)

4. 휴식 (약 10분)

5. 주요 질문 (약 40분)

6. 기타 질문 및 마감 (약 10분)

▷ 이 연구에서 무엇이 실험되는가?

는 캐나다 환경과는 다른 한국 환경도 함께 연구하여 비교적 관점을 제공합니다. 그러나, 연구자는 당신이 이 연구에 참여함으로써 어떤 개인적 혜택을 받으리라고는 보장하지 못합니다.

▷ 비밀보장

이 연구로부터 얻어지는 정보와 데이터들은 단지 연구자와 지도교수만이 볼 수 있습니다. 이 연구는 오디오와 비디오 도구를 이용해 모든 세션을 녹화할 것이며, 이 자료들은 오직 분석을 위해서만 쓰여질 것입니다. 그리고 얻어진 정보와 데이터들은 향후 일년간 저장될 것이며, 그 이후엔 파기될 것입니다. 만약 원한다면, 참여자들 중 누구나 이 연구가 출판되기 전에 쓰여진 자료를 확인할 수 있습니다. 만약 확인 후 만족치 못한 결과를 발견 시 언제든지 참여를 취소할 수 있습니다.

▷ 참여에 따른 보상

영화 선물권 (gift certificate, 10불 상당) 이 지급될 것이며, 참여자는 이 보상을 받기 위해선 전체 세션 시간 중 75%이상을 참여해야 합니다.

▷ 참여에 따른 비용

연구자가 나중에 대부분의 참여자들에게 편한 장소를 제공한다 하더라도, 참여자들은 인터뷰 참여를 위한 이동에 따른 비용이 나갈 수도 있습니다.

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