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An Assessment of Mobile Consumer Interest in Jamaica: Preempting a Decline in Average Revenue per User

Paul Golding
University of Technology, Jamaica, cashmeree@cwjamaica.com

Opal Donaldson
University of Technology, Jamaica, guccipalli@yahoo.com

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Paul Golding
University of Technology, Jamaica
cashmere@cwjamaica.com

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ABSTRACT

The high density of mobile devices within the Jamaican market is seen as a precursor to a decline in average revenue per user (ARPU) in the local industry and is the primary motivation for this investigation of mobile consumers' interest. A quantitative research was carried out in a metropolitan area to assess consumers' interest in proposed data services to be introduced to the Jamaican mobile market and to determine the value-added properties of services that are mostly desired. The findings show that an online mobile learning game, previewing music from local artist and movies from the cinema were identified as the top three desired data services. Also, mobile applications which offer a combination of the mobile values: spontaneous needs, entertainment needs and efficiency ambitious are possible the areas of interest. The result of the research has implications for the local\regional telecommunications industry by providing recommendations on alternative services to voice.

Keywords

ARPU, Consumer Interest, value-added characteristics

INTRODUCTION

The global telecommunication industry was stirred by the telecommunications policy known as liberalization/privatization which was initiated in the United Kingdom (UK) and the United States (US) in the early 1980's (Kim, 2005). The liberalization trend was driven by the agreement of Basic Telecommunications under the World Trade Organization in the late 1990s when the worldwide telecommunication's sector was at its peak (Kim, 2005). According to ECLAC (2002) the transformation of telecommunication globally has had a profound effect in Latin American and Caribbean countries. Within the Caribbean the initial effects were seen in Jamaica which was the first liberalized telecommunications market in the region.

Liberalization severed as a catalyst to Jamaica's telecommunications industry. As a result the telecommunications sector evolved immensely within the last decade and the local industry has emerged from a monopolized market to a vibrant competitive sector. According to Brown (2002) phase I of the liberalization process took effect on March 1st 2000. This phase opened the market to competition in wireless cellular services. In a publication by the Office of Utilities Regulation (2004) it was explained that since liberalization of Jamaica's telecommunications sector, the number of mobile subscribers has increased considerably from approximately 300,000 to over 1.5M in 2004. More significantly, based on recent reports by the Ministry of Industry Technology, Energy and Commerce in a document entitled "Jamaica's Telecommunications Policy 2007", at the end of 2005 Jamaica's mobile penetration rate was approximately 81%. When this figure is compared to the level of handset penetration in South Korea and Europe the mobile market in Jamaica is considered saturated. According to StandardsandPoor.com (2003) at an average penetration rate of approximately 65%, the European market is considered to be approaching saturation. On the other hand International Telecommunications Union (2005) reported that in 2005 at a penetration rate of 69.12% South Korea was considered saturated.

The high density of mobile devices within the Jamaican market is seen as a precursor to a decline in Average Revenue per User (ARPU) in the local industry for voice communication. According to Omnitele (2007) emerging markets have a great opportunity to learn from the saturated market experiences as market evolution all over the world appears to be consistent in following an S-Curve. It is recommended that mobile telecommunication operators start providing value-added services before the price erosion really begins and avoid the drastic decline of ARPU. In order to preempt a decline in ARPU it is suggested that an inquiry of consumers need, habits and an evaluation of services already in the growth phase be done. The paper will outline the purpose and significance of this study followed by a detail examination of literature which evaluates the need to examine consumer interest, the role of demographics and an examination of Anckar and D'Incau framework. Following the literature review the results of the research questions will be discussed and a conclusion made.

PURPOSE

The high density of handsets in the Jamaica mobile industry is indicative of a market which is saturated or approaching saturation. According to Mace (2007) mobile operators and handset vendors in Europe and the US are faced with the problem of saturated mobile phone markets are continuously searching for new mobile data services that can drive increased ARPU. It is recommended that the successful implementation and wide scale adoption of mobile commerce services is best achieved by understanding consumers' attitude, interests and needs (Landor, 2003) and (Ziv, 2005). Therefore the aim of this research is to assess consumers' interest in proposed data services to be introduced to the Jamaican mobile market and to determine what are the value-added characteristics/ properties of the services that are most desired by consumers.

SIGNIFICANCE

The Jamaican telecommunication market is at the ideal stage for introducing wide scale mobile commerce applications. The principle of evaluating consumer interest has been presented by researchers Landor (2003), Clarke (2001), Ziv (2005) and Anckar and D'Incau (2002), as the key to creating large returns on investments in wireless telecommunication. Therefore this research will be instrumental in understanding what content is most appealing to consumers and what will drive mass adoption for sustainability in the Jamaican market. The results of this study will provide a foundation for understanding consumer preferences in the local telecommunication market. The findings of this study will also be useful to telecommunication providers both locally and internationally. The theoretical implication of this study is instrumental in testing the validity of Anckar and D'Incau framework in explaining consumer interest in mobile commerce services.

LITERATURE REVIEW

Worldwide Trends in ARPU

The general trend within the mobile industry globally is centered on the introduction of mobile data service in order to address declines in ARPU. Sharma (2007) reported that 2006 was a great year for mobile data as revenues within the mobile industry increased for all major regions. According to Sharma Japan led the pack with almost $20B in annual mobile data revenues and the US and China was next in line with $15.8B and $9.2B respectively. It was also noted that Ireland, Norway, Switzerland, UK and South Korea earned significant data revenue for that year. The financial earnings being reaped by these economies gives rise to the question as to what direction should be taken by developed telecommunication industries in order to garner similar revenue generation. According to the Internet and Mobile Association of India (IMAI),(2006) the mobile subscriber base in India was growing at a 'scorching' pace and as ARPU decreases telecommunication providers were increasingly looking at data as an additional revenue stream.

Enpocket (2006) claims that while the ARPU of a voice calls have been steadily declining over the past two years, ARPU for data services has been increasing globally. Text messaging, games, ring tones and the mobile internet are only now beginning to gain traction with consumers which provides mobile operator's with the largest opportunity for driving profitability (Enpocket, 2006). Omnitele (2007) claims that mobile operators can positively influence and direct market evolution in the early phase rather than stay passive and experience sooner or later the adverse affects of market maturity and increase competition. It is proposed that the lack of compelling content and the limited applications are the predominant factors inhibiting the uptake of m-commerce services (Consumer Affairs Victoria, 2004). Therefore it is recommended that consumer interest be evaluated in order to foster the delivery of compelling content to the local mobile market.

User Perception and Value- Added Content Creation

The views expressed by researchers on the creation of mobile data services have been consistent. The general stance taken is centered on the creation of services based on consumer perspective. Moore and Rutter (2004) suggested that in order to establish mobile service interest groups and communities, the mobile entertainment industry should explore the needs and interests of a range of potential users. Researchers such as Landor (2002) posit that in order to achieve high levels of acceptance of m-commerce it is important to be knowledgeable of consumer's need, understand consumer usage context and possess the ability to maximize Mobile Content Quality (MCQ) for customers. The importance of incorporating the user's perspective in creating a marketable end-product is also emphasized by other scholars who believe that a consumer oriented approach is the key to mass market adoption. Ziv (2005) explained that in earlier years of mobile platform development, the emphasis was completely placed on technology and not end users. Ziv criticized the linear approach in which mobile carriers dictate terms of innovation and development to content providers and users. Ziv suggested a more ecological approach in which content providers, technology companies and users of the platform all play an important role.

According to Anckar and D'Incau (2002) several companies have invested in projects from a 'technocist focus', which means they have neglected the consumer perspective during development and this approach has resulted in the failure of projects. According to Sun, Su and Ju (2005) the need to evaluate different opinions on value- added services lies in the possibility that one group may have a high opinion of a specific value-added service feature, whereas another group may completely reject this value-added offering. Based on the views of researchers previously outlined this research seeks to answer the following question:

- What mobile applications are considered as services of interest to Jamaica's mobile consumers?

The role of Age in Mobile Consumer Interest

The general consensus within the international mobile industry is that young people will be the early adopters in the mobile commerce market. According to Consumer Affairs Victoria (2004) young people in the Asia-Pacific region spend almost 14 per cent of their total leisure spending on mobile products. It is anticipated that while strong trends have yet to emerge, m-commerce growth will be driven by young adults and business people. In support of this view Pratchett's (2005) expressed that mobile gaming is not only extremely popular for the under-16s but is highly valued as well. The fact that they rank mobile gaming as their number one form of entertainment is a huge indication of how pervasive and embedded gaming has become. It is assumed that young people will not view a mobile phone as a simple device for making voice calls and as a result; some carriers in the U.S. have focused entirely on this age group in their marketing. IGIDA (2005) explained that by focusing on the age group 18-24 years old they not only project a "hipper" image, but also capitalize on the fastest growing market for gamers. According to Sound Perspective (2001) US teenagers are among the most sought after customer segments by the wireless industry due to their strong appetite for mobile data services. However the industry has yet to effectively capitalize on this demand.

The role of Gender in Mobile Consumer Interest

The role of gender in mobile consumer interest has been identified in the literature as an area which warrants attention. An evaluation of the literature indicated that as the mobile industry evolves the interest of males and females changes as it relates to context. It has been suggested by researchers that in the early stages of mobile telephony services, the mobile device garnered a higher level of interest from females than males. Pederson (2001) refers to an earlier study conducted by Rakow and Navarro (1993) which explained that in the early stage of mobile device adoption, the mobile telephone was a device that replicated preexisting gender patterns, i.e. the role of the woman as an accessible nurturer and a person in need of male protection. However as the mobile device and services evolved the role of male and female changed where the mobile telephone was seen as a technical gizmo and thus a part of the male's domain (Pederson, 2001). However the interest in mobile services eventually switched back to females. The author pointed out that as the mobile adoption process progressed teen girls adopt mobile telephones in significantly higher numbers than their same-aged male counterparts where handsets have been redefined as a social network device and thus within the domain of women. The difference in male and female interest level in mobile commerce technology have also been supported by Coutts (2002). It was highlighted that mobile usage patterns between genders have been identified as being different between male and female with males using their mobile phones mainly for work purposes and females primarily using their mobiles for personal and social contact. In addition, Coutts (2002) also reported that the potential for viewing multimedia content evoked a strong positive reaction from the female participants and conversely little interest and even skepticism from the male participants. Based on the arguments previously discussed the literature points to the direction that gender plays a role in consumer interest in technology.

The Role of Prior Experience with technology in Mobile Consumer Interest

Researchers agree that consumers' prior experience with technology plays a role in their level of interest in similar technology usage. According to Consumer Affairs Victoria (2004) the growth of electronic-shopping with desktop computers is encouraging for m-commerce. The source claims that an experience with one Internet access device clearly prepares the ground for the same experience with another. The relevance of the impact of prior technological experience on consumer interest is supported by research carried out by Moore and Rutter (2004). The researchers highlight that the results of their study indicated that consumers' pervious experience paying for entertainment services such as video, DVD and internet download acts as a precursor to consumers' willingness to pay for mobile entertainment services. Heinonen and Andersson (2003) explained that a lack of sufficient knowledge about existing mobile applications hinders the acceptance of mobile services. Heinonen and Andersson (2003) suggested that if consumers do not understand what is it already possible to do with the mobile device they will lack knowledge about its benefits.

- How does consumer interest in a favored service correspond with their demographics?

Consumer Interest Frameworks

The ideas expressed by Anckar and D'Incau (2002), Clarke (2001), Sun et al (2005) and Landor (2002) are all similar. All authors agree that in order for m-commerce to be successful Mobile Content Quality (MCQ) must be carefully examined in the presentation of services. The result of work conducted by Landor (2002) indicated that media that adds value to the user will be the most successful within the market. It should therefore be reiterated that mobile users should have a say in the types of services brought to market as this is consistent with good product development and marketing.

The notion of using the consumer perspective to develop applications has led researchers such as Anckar and D'Incau (2002) and Clarke (2001) to develop frameworks and guidelines that address the issue of consumer needs. Clarke (2001) proposes that the relationship between consumers and suppliers in the wireless environment should be viewed from a value proposition standpoint. Clarke (2001) defined the value proposition for mobile commerce within four (4) categories (see table 1). The categories presented by Clarke are similar to summaries made by Landor (2002) who concluded that the general value–adding features of the mobile medium are personalization, localization, timeliness, ubiquity and convenience.

Value proposition	Definition
Ubiquity	Mobile devices allow users to receive information and perform transactions from any location on a real-time basis. The question here is, what value offering will be provided everywhere at the same time?
Personalization	The personalization of messages based on time and location for specific users. The issue that needs to be evaluated within this category is, what individual based target market can be employed?
Localization	Location specific information focuses on the supply of information relative to the current geographic location of the user. Developers should evaluate, what location–based marketing strategies can be offered?
Convenience	The ability to access information and services without the constraints and limitations of wired infrastructure. The area of focus within this category is what factors create time and space utility?

Table 1. Clarke's Value Added Proposition Framework

Sun et al (2005) utilized Clarke's value proposition framework to examine numerous mobile commerce services (gaming, email, transportation, video, music travel etc.) offered in Taiwan and China. The findings from the study suggested that the each category of mobile commerce is characterized by a diverse combination of value proposition attributes. However, based on results obtained the authors concluded that value-added service tendency is largely driven by entertainment as these services were highlighted in the study as having the most value.

An examination of the impact of value added characteristics on mobile consumer interest was also conducted by Clarke (Anckar and D'Incau (2002). The researchers proposed an analytical framework that can be used to evaluate the suitability of applications for m-commerce. The framework consists of two components namely wireless-value and mobile-value. The wireless-value is defined as the value, which arises when using unwired devices for example a Laptop or a Personal Digital Assistant (PDA). On the other hand mobile-value is defined as the value arising from the mobility of the new medium for example making an Internet connection with a PDA. Mobile-value was broken down in the following areas:

- **Time-critical arrangements:** Time-critical situations arise from external events, which mean that the always-on connectivity of the medium is an important feature for example alerts for stock traders.
- **Spontaneous decisions and needs**: These needs are related to products and services that are characterized by the purchasing decision being straightforward, meaning that they do not require careful consideration. Spontaneous needs can also be entertainment-related, efficiency-related or even time critical in nature.
- **Entertainment needs**: These needs are centered on killing time/having fun, especially in situations where there is no access to wired entertainment appliances. Entertainment needs are generally also spontaneous in character, especially in mobile settings.
- **Efficiency ambitions**: These applications are aimed at productivity for example electronic planners
- **Mobile situations**: These services are valuable only through a mobile medium, as needs for these services predominantly arise when away from home as for example in the use of vending machine to make payments

The results of the study carried out by Anckar and D'Incau (2002) indicated that services offering mobile-value on several dimensions proved to be more interesting than services that offer one dimension of mobile-value.

The major similarity between Clarke's and Anckar and D'Incau's framework is the use of both approaches to measure value-added characteristics of mobile commerce services. That is Su et al (2005) utilized Clarke's framework to examined what were the predominant value-added characteristics found in services offered by companies in Taiwan while Anckar and D'Incau's (2002) evaluated the specific value-added characteristics observed in consumer interest in potential mobile services to be offered in Finland. However based on the constructs of Clarke's framework it was observed that Anckar and D'Incau's framework was more specific in explaining value-added characteristics of services. The components of Clarke's framework are general and provide limited insight into consumer interest. In addition, the approached used by Anckar and D'Incau's is similar to the one which will be employed for this research in ascertaining mobile consumer interest within the Jamaica mobile market. Based on the difference in evaluation Anckar and D'Incau's (2002) framework is consider as the most suitable framework for evaluation consumer interest in proposed mobile data services in Jamaica. **Therefore this research will use Anckar and D'Incau's framework to evaluate the results of the current study.**

- What mobile value characteristics are favored by consumer?

METHODOLOGY

A quantitative research was carried out to determine which one of the following nine (9) mobile commerce applications is most desired by consumers (see table 2). The selection of these services was done based on the listing of proposed services sampled by Anckar and D'Incau's (2002) in Finland. However the specific nature and features offered in each service was based on traditional service offerings in Jamaica. A questionnaire consisting of close ended questions on a five point Likert type scale (5-very interested, 4-intersted, 3-nuetral, 2- little interest, 1-no interest) was used to collect the data. Similar to the instrument used by Anckar and D'Incau's (2002) respondents were instructed to indicate their level of interest in proposed mobile commerce services. The instrument was pre-tested among a group of twenty-five (25) persons to determine the level of clarity of the questionnaire. Following the pre-test the survey was carried out. All items used on the questionnaire were adopted from Anckar and D'Incau's (2002) research, however to ensure reliability of the measures used to capture consumer interest in the services named above a Cronbach's Alpha test was done. Pikkarainen et al (2004) points that acceptable value of Cronbach's alpha can vary between 0.5 and 0.95, however an acceptable value of Cronbach's alpha for basic research should be higher than 0.7-0.8. It should be noted that the Cronbach's alpha value for the items tested was .823. Based on the results of the Cronbach's alpha test the measure used to capture consumer interest have a reliable Cronbach's alpha score which suggest that the values show good internal consistency among scales employed for the present study.

Service	Definition
Viewing Newspaper Headlines	A service which allows a user to log on to a wireless site and view information on current local and regional news headlines.
Compare Car Prices Online	A service which allows a user to visit a wireless site and check the prices of automobiles which are offered by different local automotive providers.
Previewing Music from Local Artistes	Previewing music from local reggae, gospel and soca artistes is a service which allows a user to download snippets of songs selected from the most recently released local albums.
Preview Movies from the cinema	A service which allows users to download and preview movie snippets from a local cinema.
Check Grocery Prices	A service which allows users to view current grocery prices on a wireless site.
Mobile School's Challenge Quiz	School's challenge quiz is a game show which is broadcasted on one of Jamaica's television stations. The game show has recently gained the status as the longest running local television show in the Caribbean. The main purpose of School's Challenge Quiz is to provide a platform for various high schools in Jamaica to compete academically. Therefore Mobile School's Challenge Quiz is a game which simulates the quiz show on the handset for a stand alone user. The game will focus on different subject areas with varying levels of difficulty.
Checking Information on Parties/Clubbing	A service which allows a user to log on to a wireless website and view information on upcoming social events and receive alerts on new party events.
Playing a Game that Predicts the Lottery	A service which generates possible lottery numbers for the upcoming lottery draw.
Playing the Lottery	A service which allows users to purchase their lottery tickets via text messaging.

Table 2. Definition of services

The sample was randomly chosen and consisted of three hundred (300) participants from two main metropolitan regions in Jamaica (Kingston and St. Andrew and Portmore in St. Catherine). The sample selected was chosen with the intent of representing the age and gender demographics of the population however there were slight variations in the gender distributions. This gender distribution represents a ratio of 1.48 females to 1 male which is slightly higher than Jamaica's current gender ratio of 1.02 females to 1 male (Index Mundu, 2007). However the age distribution is consistent with the local demographics which according to Dunn and Dunn (2006) based on the 2000\ 2001 census majority of the countries in the Caribbean including Jamaica has a population with the larger portion being young. It is important to note that the sample was selected from the Kingston and St. Catherine regions in Jamaica because of the close proximately and accessibility for sampling. However the population sample is representative of the potential target population which is the younger generation. The data collected from the survey were analyzed with the SPSS software.

SAMPLE SIZE AND DEMOGRAPHICS

Three hundred (300) questionnaires were issued and two hundred and ninety-six (296) were returned. The high return rate is attributed to the fact that questionnaires were issued and collected on spot. Of the returned questionnaires two hundred and seventy-six (276) were usable and twenty (20) were unusable. The unusable questionnaires were as a result of twelve (12) incomplete questionnaires and eight (8) questionnaires with inconsistencies. The gender distribution was one hundred and sixty-five (165) or (60%) females to one hundred and eleven (111) or (40%) males. The larger portion of the sample was young. The data reflected that the majority, ninety-seven (97) or (35%) of the sample were ages twelve to seventeen (12-17), sixty (60) or (22%) were ages eighteen to twenty-three (18-23), forty-four (44) or (16%) were ages twenty-four to twenty-nine (24 -29), thirty-one (31) or (11%) were ages thirty to thirty-five (30-35) and the remaining forty-four (44) or (16%) were thirty-six (36) and older.

The majority of the sample one hundred and fifty-nine (159) or (58%) were employed. The data represented a wide range of field of employment (students 32.6%, Administration 5.4%, Engineering 5.1%, self employed 12% etc.) The larger portion of the sample earned a moderate to low income. It should be noted that at the time of the survey the exchange rate was US$1 = JA$65. The data revealed that forty-seven (47) or (17%) of the sample earned a monthly income of $20,000 or less, sixty-one (61) or (22%) earned $21,000 to $41,000, twenty-nine (29) or (10%) earned $42,000 to $75,000 and the remaining twenty-two (22) or (8%) earned $76,000 or more.

The educational attainment of the sample is distributed among primary, secondary and tertiary level. The majority, one hundred and thirty-four (134) or (48.6%) selected high school as their highest level of educational attainment. On the other hand sixty-six (66) or (23.9%) reported primary school as their most recent level of education. Fifty-nine (59) or (21.4%) indicated that university was their highest level of attainment and fifteen (15) or (5.4%) selected college as their most recent level of education. The minority (2) or (.7%) had no educational experience.

The majority, two hundred and fifty-four (254) or (92%) of the sample owned a cell phone. One hundred and sixty-six (166) or (60.1%) indicated that they had used a cell phone to perform activities other than making a call or sending a text message. Downloading ringtone was chosen by thirty-one (31) or (11.2%) of the sample as the single most performed activity while checking email was chosen as the least performed activity. It should be noted that eighty (80) or (29%) of the respondents selected a combination of two or more activities (see table 1). The combination of services included more than one of the services listed in table 3. In contrast one hundred and ten (110) or 29% of the participants had no prior experience with mobile commerce.

Activities		Frequency	Valid Percent
Valid	Email	7	2.5
	Pictures	19	6.9
	Ringtones	31	11.2
	Wall Paper	15	5.4
	Other	14	5.1
	None	110	39.9
	At Least 2	80	29.0
	Total	276	100.0

Table 3. Activities Performed on the Phone

FINDINGS AND DISCUSSION

What mobile applications are considered as services of interest to Jamaica's mobile consumers?

The findings show that the online game MSCQ, previewing music from local artist and previewing movies from the cinema were identified as the top three most desired data services. The majority, one hundred and eighty-one (181) or (65.6%) of the respondents indicated that they were either interested or very interested in playing MSCQ on their handsets. However, it should be noted that the mean score for mobile school's challenge quiz was the second highest with a value of 3.67 (see table 4). On the other hand previewing music from local artiste had the highest mean score of 3.73 but a slightly lower percentage of 64.5% of respondents expressing a desire to use the service. Previewing movies from the cinema was chosen as the third (3^{rd}) most desired service among the respondents as 63.4% of the respondents' participants indicated that they were interested in this data service (see table 4 for mean score).

	Minimum	Maximum	Mean	Percentage Interested or very interested
Preview Movies from the cinema	1	5	3.6486	63.4%
Preview Music	1	5	3.7283	64.5%
Lottery Game	1	5	2.4710	27.9%
Newspaper Headlines	1	5	3.4819	57.3%
Information on parties	1	5	3.1232	46.3%
Play Lottery	1	5	2.3333	31.5%
Mobile School's Challenge Quiz	1	5	3.6703	65.6%
Check Grocery prices	1	5	3.1449	47.8%
Compare Car Prices	1	5	3.2391	51.9%

Table 4. Mean Score for Services

It is believed that one of the motivations of consumer interest in MSCQ is driven by the association of the mobile service with the actual School's Challenge Quiz television programme. This view is supported by the ITU (2006) which articulated that in the mobile world, content is being driven primarily by events or brands unrelated to telecommunications operators such as a popular television series. It was further explained that as the mobile industry evolves, consumer interest will change and that video and audio content will become the preferred services. In addition, it was also suggested that following digital music, gaming and gambling are predicted to be the next big drivers of mobile services (ITU, 2006). Based on the findings of the current study it can be argued that consumer interest in Jamaica's mobile industry is in line with predictions made by the ITU.

The findings of the current study suggest that hypothesized killer applications: online gaming, music and news services were rated among the top four services of interest to the Jamaican consumer However when compared to the findings of Anckar and D'Incau (2002) there were marked differences between both studies. Anckar and D'Incau (2002) explained that persons in Finland had a very low willingness to use commonly hypothesized "killer applications" such as online gaming, music and news services. The authors considered these findings particularly alarming as these applications are considered as services which will acquire high consumer interest. The results of Anckar and D'Incau's study showed that when compared to the results of the current research the mean score for online gaming, music and news services was relatively low (see table 5, It should be noted that a five point Likert type scale was used in both studies).

Service	Mean Score of Current Study	Anckar and D'Incau Mean Score
Online Game	3.65	2.14
Music	3.73	2.46
News Services	3.48	2.77

Table 5. Comparison of Means for 'killer applications' in current Study and Anckar and D'Incau

Anckar and D'Incau (2002) attributed the low level of interest in these services to the fact that the majority of the services surveyed had not actually been used by consumers. Based on the results obtained from the current study and the fact that none of the services surveyed among Jamaican consumers have ever been used before; it is proposed that the difference in interest identified in both studies may be attributed to a difference in culture or other unknown factors. The possibility of culture being an underlining factor in explaining difference in consumer interest has also been suggested by Pikula (2001). The author proposed that the success of mobile data services in Japan can be largely attributed to the cultural uniqueness of the country in comparison to the United States and other western societies. The author explained that the Japanese consumer market is more homogeneous compared to Western markets which leads to a high "me-too" factor and high adoption rates. In addition, Japanese people travel long hours on trains every day, whereas people in America use cars mostly. Pikula (2001) explain that this would imply that, to kill time while aboard these trains, Japanese people tend to use mobile internet services more often.

- How does consumer interest in a favored service correspond with their demographics?

Based on the high mean score for the interest in MSCQ, further analysis was done on the service to determine what demographic factors affect consumers' interest in the mobile application. An ANOVA test was done to determine the difference in interest in MSCQ among the various age groups in the sample. The result of an ANOVA test with a p-value of .004 indicated that there is a significant difference between the age groups and interest in MSCQ.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	38.151	5	7.630	3.584	.004
Within Groups	574.845	270	2.129		
Total	612.996	275			

Table 6. ANOVA School's Challenge Quiz and Age

A subsequent Bonferroni test was done to identify the age groups that had a significant difference in interest. The Bonferroni test revealed that the difference among the age groups exist between the cohorts: 24-29 and 42 and older; 30-35 and 42 and older (see table 7). A cross tabulation showed that age groups 24-29 and 30-35 had a higher level of interest of (77.3%) and (77.5%) respectively indicating a desire to use the service in comparison to age group 42 and older with an interested group of 38.8%. Participants in the age range 12 -17 had similar level of interest (78%) to persons ages 24-29. Researchers agree that young people will be the early adopters of mobile commerce market. According to Consumer Affairs Victoria (2004) young people in the Asia-Pacific region spend almost 14 per cent of their total leisure spending on mobile products. It is anticipated that while strong trends have yet to emerge, m-commerce growth will be driven by young adults and business people. The results of this current study have provided support for this view as younger age groups indicated the highest level of interest in MSCQ.

Bonferroni Multiple Comparisons		
Dependent Variable: SCHOOL_CHALLENGE_QUIZ		
(I) AGE	(J) AGE	Mean Difference (I-J)
24-29	12 – 17	0.67854
	18-23	0.29091
	30-35	-0.10264
	36-41	0.47552
	OLDER*	1.31313
30-35	12 – 17	0.78118
	18-23	0.39355
	24-29	0.10264
	36-41	0.57816
	OLDER*	1.41577
OLDER	12 – 17	-0.63459
	18-23	-1.02222
	24-29*	-1.31313
	30-35*	-1.41577
	36-41	-0.83761
* The mean difference is significant at the .05 level.		

Table 7. Difference in Mean among Age Groups

Note that the table 7 has been adjusted and reduced in size to illustrate age groups which display differences.

An independent sample T test was used to determine the difference in interest in MSCQ based on gender. The T Test was considered as the most suitable test to identify the difference between two groups in comparison to the ANOVA test which is suitable for analyzing three or more groups. The results of an independent sample T test indicated that a p-value of .006 suggest that there is a statistical variance between male and female interest in MSCQ (see tables 8 & 9). This result corroborates findings by Coutts (2002) which asserted that there is a significant difference between male and female interest in mobile commerce services. It was highlighted that mobile usage patterns between genders have been identified as being different between male and female with males using their mobile phones mainly for work purposes and females primarily using their mobiles for personal and social contact. In addition, Coutts also reported that the potential for viewing multimedia content evoked a strong positive reaction from the female participants and conversely little interest and even skepticism from the male participants.

Group Statistics	Column1	Column2	Column3
	Gender	N	Mean
School's Challenge Quiz	Male	111	3.89189189
	Female	165	3.52121212

Table 8. Difference in Mean between Genders

		F	Sig.	df
School's Challenge Quiz	Equal variances assumed	7.821	0.006	274.000
	Equal variances not assumed			251.943

Table 9. Independent Sample T-test for gender

Researchers suggest that consumers' prior experience with technology plays a role in their level of interest in similar technology usage. According to Consumer Affairs Victoria (2004) the growth of electronic-shopping with desktop computers is encouraging for m-commerce. The relevance of the impact of prior technological experience on consumer interest is supported by research carried out by Moore and Rutter (2004). The researchers highlight that the results of their study indicated that consumers' pervious experience paying for entertainment services such as video, DVD and internet download acts as a precursor to consumers' willingness to pay for mobile entertainment services. The importance of prior experience with technology having an impact on consumer interest has been supported by the results of this study. The results of an independent sample T test with a p-value of .001 suggests that there is a statistical difference between interest level of persons who had performed other mobile commerce activities on their phone and persons who had not (see table 10 & 11). A difference in mean suggests that respondents who had performed other activities on their phone had a higher interest in mobile school's challenge quiz than persons who had not.

Group Statistics	Column1	Column2	Column3
	Perform Activity	N	Mean
School's Challenge Quiz	Yes	166	3.78915663
	No	110	3.49090909

Table 10.Difference in Mean for Prior MC Activities performed

		F	Sig.	t	df
School's Challenge Quiz	Equal variances assumed	11.48	0.001	1.630	274.000
	Equal variances not assumed			1.582	209.377

Table 11. Independent Sample T-test for Prior MC Activities

What mobile value characteristics are favored by consumer?

The framework created by Anckar and D'Incau was used to evaluate the results of the survey on consumer interest (see table 12). Considering the results it can be deduced that although the Jamaican market has a interest in services which satisfy spontaneous and entertainment needs (for example previewing music and previewing movies), services such as MSCQ which has an additional mobile value offering such as 'efficiency ambitious' was considered as more appealing to consumers. This is consistent with the findings of Anckar and D'Incau which suggested that services which offer mobile value on several dimensions were areas garnering the most interest.

The results of the current study also showed that two out of the three services which were identified as the highest areas of interest satisfied only spontaneous and entertainment needs. In addition, the three services garnering the least interest among respondents also accounted for only spontaneous and entertainment needs (i.e. Checking Information on Parties/Clubbing, Playing a Game that Predicts the Lottery and Playing the Lottery). This suggest that the mobile value features spontaneous needs and entertainment needs does not provide an exclusive basis for accounting for local consumer interest since they were the only features in the top and bottom service selection. The results also highlighted that mobile applications (Check Grocery Prices, Compare Car Prices Online) which do not have the entertainment need component did not gather much attention from consumers.

Mobile Service	Mobile Value, Source					
	Int. %	TC	S	EN	EF	M
Mobile School's Challenge Quiz	65.6%		*	*	*	
Previewing Music from Local Artist	64.5%		*	*		
Preview Movies from the local cinema	63.4%		*	*		
Viewing Newspaper Headlines	57.3%	*	*	*	*	
Compare Car Prices Online	51.9%		*		*	
Check Grocery Prices	47.8%		*		*	
Checking Information on Parties/Clubbing	46.3%		*	*		
Playing a Game that Predicts the Lottery	31.5%		*	*		
Playing the Lottery	27.9%		*	*		

Table 12. The results of the study within Anckar and D'Iancu's Frame Work

TC: Time-critical arrangements, S: Spontaneous decisions and needs, EN: Entertainment needs, EF: Efficiency ambitions, M: Mobile situations

CONCLUSION

The primary objective of the research was to assess what mobile commerce applications would be most desired by consumers and to determine what value-added characteristics are most appealing to consumers. The results of this study suggests that local consumer interest is consistent with predictions of the International Communication Union, it is recommended that the rolling out of consumer value-added services in the Jamaican mobile industry should be informed by the results of this study. It is evident that presently mobile consumer interest in Jamaica is been driven by events that are related to social experiences such as MSCQ. In addition mobile applications which offer a combination of the mobile value spontaneous needs, entertainment needs and efficiency ambitious are the possible areas of interest for consumers. Omnitele (2007) claims that mobile operators can positively influence and direct market evolution in the early phase rather than stay passive and experience sooner or later the adverse affects of market maturity and increase competition. It is proposed that the lack of compelling content and the limited applications are the predominant factors inhibiting the uptake of m-commerce services (Consumer Affairs Victoria, 2004). Therefore it is recommended that consumer interest be evaluated in order to foster the delivery of compelling content to the local mobile market.

LIMITATIONS

The results of the study are specific to the Jamaican mobile telecommunications industry. This is due to the fact that the sample used was done with the intention of representing the potential mobile commerce users within the Jamaican telecommunications industry. In addition, the sample population is a limitation of this study. It is recommended that future research done on this area should be carried out with a more representative sample. It is also suggested that future studies take into consideration a cross country analysis with Jamaica, other Caribbean islands and a Latin American country.

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