Scope and Adoption of M-Commerce in India

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Abstract: The purpose of this empirical article is, to study the scope and adoption of M-commerce in India. Standardized inventory was integrated into questionnaire on exclusive web site developed to collect the data from all over the India. In all 425 subjects filled up the questionnaire within given time frame. The study was non-parametric (survey) in nature. Majority of subjects showed agreement towards scope and adoption of M-commerce and clears that users in India are all set to adopt M-Commerce devices and services. With the M-commerce, users' can introduce a standard, convenient communication and transaction channel that supports anywhere, anytime mobile commerce services. Cost doesn't have a meaningful effect, this shows that Indian people doesn't have a clear view of cost of mobile commerce since they didn't experience it in general. Risk has a negative effect on attitude toward use. This issue can be a result of "Indian culture" which there is a resistance toward new innovation technologies, privacy, security and product. Findings also confirm that there is a lot of scope for M-commerce services in India. M-commerce is complex in nature and includes changing procedure in market and is in infancy stage in India. Suggestions for future research and implications to service providers and policy makers discussed.

Keywords: M-commerce, scope, adoption, cost, risk.

I. INTRODUCTION

Mobile phones play an active and major role in development of a country. People need to buy these, whether for professional or personal purposes, but they also appreciate the many modernistic features that come with the latest wireless handsets. In addition, it can also be translated by a want. The definition of a want is tailored to a person state of mind and whether one believes that a want is something inessential or unimportant. For instance, to most people living in India, owing a mobile phone could be seen as a necessity, whereas in some countries of the world it could be seen as a luxury. In other words, an individual might just need to call another person and wants a state of the art mobile phone to perform the task (Blythe Jim, 1997).

The main features of mobile commerce are saving time, varying locations, mobility and convenience (Venkatesh et al, 2003). Devices and services that are based on wireless network technologies are currently commonplace in our daily practice (Balasubramanian et al., 2002). According to Green et al. (2002), mobile devices and services that will be in the market in the near future hold the potential to transform patterns of information consumption and communication in our everyday life. This might unleash the enormous revenue capacity for participants in the wireless telecommunications value chain. In order for that capacity to be set free, mobile commerce services and accompanying hardware devices (handhelds, cell phones, and personal digital assistants) should be widely adopted by consumers in the mass market. Before mass marketing

these devices and services, investors will appraise the value and potential benefits provided to consumers. It is therefore a necessity for marketers to identify and understand consumers' needs, wants, attitudes and behavioral intentions towards such innovative - mobile commerce and other wireless solutions (Nohria & Leetsma, 2002; Barnes, 2002).

M-commerce

M-commerce is sometimes referred to as "Mobile E-Commerce"; because its transactions are basically electronic transactions conducted using a mobile terminal and a wireless network. Mobile terminals include all portable devices such as mobile telephones and PDAs, as well as devices "mounted in the vehicles that are capable of accessing wireless networks" and perform M-commerce transactions [Veijalainen et al., 2003].

One definition of M-commerce describes it as "any transaction with a monetary value that is conducted via a mobile telecommunications network" [Müller-Veerse, 2000]. Some other definitions tend to ignore Telematics, an important feature of M-commerce. These definitions concentrate on the appliance of mobile hand-held devices. For instance: "M-commerce is the buying and selling of goods and services, using wireless hand-held devices such as mobile telephones or personal data assistants (PDAs)" [UNCTAD, 2002].

Condos et al. (2002) describe that M-commerce combines the advantages of mobile communication with existing

Electronic Commerce applications to permit customers to shop for goods and services virtually from anywhere. The rapid development in telecommunication and innovative thinking about user interface design has greatly facilitated mobile users to take the full advantage of M-commerce. WAP is one of the key enabling technologies of M-commerce that allows mobile users to access the internet from a mobile. As a result, the future consumer adoption of M-commerce relies heavily on how easy it is to use WAP in order to access and utilize these services. Matskin and Tveit (2001) also have same explanation of WAP like other researchers. They consider WAP as a communication standard that enables portable electronic devices to send receive and interpret information. This device can be a particularly designed mobile phone or personal digital assistant such as a palm pilot using micro browser software. M-commerce is a natural successor to e-commerce (Siau et al.,2001) because both are based on internet environment available to most individuals with PC access (Fenech, 2001).

Lee (2003) also defines M-commerce is the exchange or buying and selling of commodities, service, or information on the Internet, by using mobile handheld devices.

Mobility means freedom – say Keen and Macintosh – and freedom creates choice and value, something much more than convenience as it may revolutionize the way companies work, buy, sell and collaborate (Anckar et al, 2003).

These definitions, formulated in the initial phase of M-commerce, do not seem to be appropriate today, even when they provide useful insights for understanding M-commerce. It is therefore essential to formulate a new definition of M-commerce that takes all of the above-discussed factors into account. This paper accordingly defines M-commerce as following:

"M-commerce is any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device."

As shown above, M-commerce is closely related to E-Commerce, since the services offered in both variations are handled electronically by computer-mediated networks and accessible via telecommunication networks.

The only difference in the procedure to E-Commerce is that in M-commerce the telecommunication networks are accessed through mobile electronic devices. There exist two different paradigms about the relationship of M-commerce to E-Commerce.

An exclusivist approach is therefore erroneous and what we rather need is an integrative, holistic approach, as shown in Fig. 1.
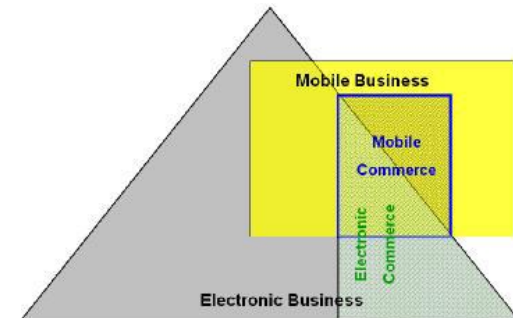

Fig. 1: A Holistic Perspective of M-Commerce

Present Scenario of Mobile Commerce in the Developed/Developing World

The potentials of M-commerce are enormous and its applications go far beyond the Internet browsing or booking a hotel room. "Mobile terminals seem to be the ideal channel for offering personalized and location-based services as well as for one-to-one marketing. Other very popular applications are mobile advertising, mobile financial services (stock exchange, bank payments, and insurance services) and mobile entertainment, for instance" (Bakom, 2000). The world wide mobile internet market has grown dramatically over the last two years going from 200 million to 1.3 billion mobile phones users and, according to industry experts, soon internet-connected mobile phones will out-number the internet-connected PCs; the overall number of active PCs worldwide is between 500 million to 750 million, which does not come even close from the 1.3 billion mobile phone.

Nokia's statement on the company's Web site adequately resumes M-commerce:
"With the Internet going mobile the number of possible peer-to-peer or consumer-to-service connections is exploding and the way in which we are using our mobile phones is expanding. This offers tremendous new market opportunities."

This new type of commerce, Mobile commerce (M-commerce), is starting another era of innovation in business and it will continue to extend the way organizations perform business – and will change the relationships between companies, customers, suppliers and partners (Anckar et al, 2003)."M-commerce is all data-driven business transactions and exchanges of value by users of mobile devices via wireless telecommunication networks" (Cronin, 2002; cited by Feng et al., 2006)

Scholars have performed broad studies in different aspects of mobile commerce adoption. This thesis is based on theories and models developed in previous studies and regarding to the characteristics of mobile society of India, it will chose one of them as the basis of this research.
By determining the level of consumers' adoption in relation to M-commerce, this research will primarily benefit network operators and mobile phone manufacturers.

Characteristics of Indian Market

According to Amrish Rau, General Manager of First Data India and ICICI Merchant Services, India has an internet user base of over 50 million users. The penetration of e-commerce is low compared to markets like the US and the UK but is growing at a much faster rate with a large number of new entrants. The industry consensus is that growth is at an inflection point with key drivers being:

1. Increasing broadband Internet (growing at 35% MoM) and 3G penetration.
2. Rising standards of living and a burgeoning, upwardly mobile middle class with high disposable incomes.
3. Availability of a much wider product range (including online purchase from international retailers and direct imports) compared to what is available at brick and mortar retailers
4. Busy lifestyles, urban traffic congestion and lack of time for offline shopping

Commerce devices and increased issuing and use of debit and credit cards, mobile commerce will deliver strong growth over the coming years. New and exciting developments in India will enable merchants to attract new tech savvy customers who are ready to use their mobile devices for secure online transactions.

Grewal (2012) according to the TRAI guidelines the telecom companies have to pay 6% of annual gross revenue as license fees to register as Value Added Service providers, Bank is charging 2-4% from the them and the merchants are not ready to pay them 7-8% for the services they provide. In compliance to TRAI norms RBI norms are much simpler in handling fraud transactions and banking. The solution of this problem is that to build a MVAS (mobile value added services), application that can be charged to from the user account for providing the service. The 2.1.3(iv), TRAI riles clearly states that the RBI guidelines need to be followed by the telecom companies.

Gupta (2014) still there is a lot of work, which is to be done for M-commerce. We just keep in mind that M-commerce is a new Industry in India. Internet connectivity and mobile networking is still not accessible to entire population. These industries see an astounding rate of growth. M-commerce market grows in India because so many growth drivers are favorable in India such as changing youth's perception, introduction of trusteeship model, growth of financial area and numbers of smart phone buyers are increasing. But it is still a single step in long stair as compare to developing nation like China.

II. METHODOLOGY

Statement of the Problem

Telecommunication network are the important economic part of society and have a significant effect on people's lives. India's population is around 1.22 billion and by the end of 2012, the total numbers of mobile users in India will be more than 400 million. As the number of mobile phone users is increasing, the purchase of products and usage of various services on mobile phones and other mobile devices is also increasing.

In a forecast by Forrester, global M-commerce is set to reach $31 billion figure by 2016. However, for that to happen, rural areas also have to become a part of it without much delay. Till this date, about 72% of the world's population is having bank accounts or access to banks and mobile commerce devices or mobile phone will be the main media that can take banking to the balance 28% population. In India, RBI and TRAI, several banks, mobile service providers and phone makers have joined hands to take M-commerce to rural India. For instance, Eko, a mobile banking technology provider, has partnered with SBI and ICICI bank for mobile banking solutions. Likewise Idea Cellular has partnered with Axis Bank for the same, and other banks too are following suit.

In another report by Boston Consulting Group, it has been predicted that M-commerce and banking are set to "take off" in India. At present, there are 893.84 million mobile subscribers in the country, compared with the 240 million people holding bank accounts, 20 million credit cards, 88000 bank branches and 70,000 cash points. It further points to the fact that though half of Indian households do not possess bank accounts, 42% of these have at least one mobile handset, and 90% of these can be used for basic financial transactions. In Urban India, most of the people have bank accounts but they still use cash for 90-95% of their petty needs.

The purpose of this piece of research was to scope and adoption of M-commerce in India. In order to achieve this purpose, quantitative approach has been taken to survey the "Indian mobile commerce device users". The outcome of this study would be beneficial to private and public telecommunication organizations, various service providers, business community, banking sector and others.

Procedures and Participants

Empirical Research is very impressive observational type of research, where one observes or test on real-life data or analysis the pattern of some specific events in order to identify the nature or the class of trend that specific phenomenon maintains. Based on the test result, researchers try to draw lines in order to predict the result of that type of incidents with certain level of confidence.

Measure

It was Yang (2005) inventory having 37 items with Likert type, 5-point response, viz., Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree. This questionnaire was vetted by bank managers and academic experts through personal interviews, to establish content and validity. Phrasing and relatedness of the statements within the questions was verified for better adjustment and compatibility in Indian cultural perspective. This inventory was administered on a representative sample of 400 male employees working in Information Technology sector in India who were male and above 25 years of age. After scoring the inventory of each testee, the sheets were

arranged in the order of highest scoring to lowest scoring. From this order, two groups, one of 27% from highest scoring and other of 27% from the lowest scoring were selected.

Reliability

In statistical terms, the usual way to look at reliability is based on the idea that individual items (or sets of items) should produce results consistent with the overall questionnaire. Reliability is simply the ability of the questionnaire to create the same results under the same conditions. Reliability can be estimated via different methods. Cronbach's alpha is the most common method to measure of scale reliability, specially having survey type (dichotomous) and/or attitudinal (polytomus) questions. For testing reliability and internal consistency of present questionnaire Cronbach's alpha test with sample size of 425 is performed. Yang (2005) reported Cronbach's alpha as 0.84 and on the target sample it was 0.76 which quite high. The construct/factorial validity was determined using Exploratory Factor Analysis and eight dimensions viz Perceived Usefulness, Attitude towards Use, Behavioural Intention, Innovative Index and adoption in terms of Perceived Ease of Use and Compatibility of mobile commerce in India which explained 53.07% of the variance.

Sample

A fair representation of demographic and occupational characteristics of respondents was ensured Description of the sample is shown below:

TABLE 1

Age			Gender		
Group	No.	%age	Sex	No.	%age
15-25	75	17.6	Male	291	68.5
25-36	166	39.1	Female	134	31.5
36-45	118	27.8			
45-55	62	14.6			
Above 55	4	.9			
Overall	425	100	Overall	425	100

Educational Level			Occupation		
Level	No.	% age	Level	No.	%age
Intermediate	8	1.9	Housewife	11	2.6
Bachelor	41	9.6	Emp/ Service	108	25.4
Master	357	84.0	Univ. Student	36	8.5
PhD & Above	19	4.5	Student	45	10.6
			Business man/woman	28	6.6

			Manager	173	40.7
			Univ. Professor	19	4.5
			Engineer	5	1.2
			Overall	**425**	**100**

Cities	Frequency	Percentage
Metro	179	42.1
Non Metro	246	57.9
Total	**425**	**100.0**

Method of Data collection

An exclusive website **www.mCommerceindia.co.in** was developed for this research study and hosted on the internet to collect data quickly and at low cost by direct access to research populations without the need of any 'cultural gatekeepers' who might restrict access to such groups.

Data collected for this research was "primary" in nature because new data is collected specifically for this research and at the time of conducting this research there were no secondary data available. However, some of the public/private sector banks have adopted M-commerce in India. Their data for feasibility studies was not available to researcher. Hence, information gathered through this survey is considered as primary in nature.

In first section, demographic questions pertaining to information about respondent's gender, age, education, innovativeness, specialization, technology usage and in second section phrased descriptive statements about scope and adoption of mobile commerce.

The snapshots of home page and questionnaire are shown in Figure 2.

Fig. 2 Home page of Exclusive Website

Objective

Specific objective for this piece of research was:
1. To study the Scope and Adoption of M-commerce in India.

III. RESULTS & DISCUSSION

The descriptive information received through the questionnaire described in following paragraphs. Highest percentage (56%) of respondents was known to use owned or adopted 'more than one' mobile commerce devices followed by 'One Mobile Commerce device' representing 44% respectively. Highest percentage (91.3%) of respondents was using mobile commerce devices for "personal and official work both" followed by personal work (8.2%) and official work (0.50%) respectively.

Highest percentage (75.3%) of respondents was not using Mobile Banking followed by 24.7% using respectively. Highest percentages (78.1%) of respondents were using Internet Banking followed by 21.9% not using. Highest percentage of respondents i.e. 93.3% was using Mobile Banking for Internet banking. However, 73.3% of the respondents were using Internet banking, but not Mobile banking.

To determine the factors affecting scope and adoption of mobile commerce in India, profile analysis was used and results are shown in table 2.

Table 2 indicates that the respondents showed their **agreements** in respect of factors affecting scope and adoption of Mobile Commerce in India towards: betterment of life, fashionable and trendy to use, improve performance, productivity and effectiveness in online transactions will increase, make easier transactions, useful to engage in online transactions and is compatible with existing technology, learning to use, finding what I want via M-commerce, using is easy, favourable, satisfactory transactions, necessary to use M-commerce, will definitely use when launch in the region, willing to try.

TABLE 2: Profile Analysis

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1. M-Commerce contributes to the betterment of life.				⊕	
2. It is fashionable and trendy to use M-Commerce.				⊕	
3. M-Commerce would lead to an invasion of personal privacy.			⊕		
4. It is not safe to make purchase using M-Commerce.			⊕		
5. The development of M-Commerce is a waste of resources.		⊕			
6. Using M-Commerce would improve my performance in online.				⊕	
7. Using M-Commerce would improve my productivity in online transaction.				⊕	
8. Using M-Commerce would enhance my effectiveness in online transaction.				⊕	
9. Using M-Commerce would make it easier for me to engage in online transaction.				⊕	
10. I think using M-Commerce is very useful for me to engage in online transaction.				⊕	
11. M-Commerce is compatible with existing technology.				⊕	
12. It is difficult to use mobile phone to conduct transaction.			⊕		
13. I think learning to use M-Commerce is easy.				⊕	
14. I think finding what I want via M-Commerce is easy.				⊕	
15. I think becoming skillful at using M-Commerce is easy.				⊕	
16. I think using M-Commerce is easy.				⊕	
17. My general opinion of M-Commerce is favorable.				⊕	
18. By using M-Commerce service I feel more satisfied with my transaction.				⊕	
19. It's necessary to use M-Commerce.				⊕	
20. When M-Commerce Launches in my region I will definitely use it.				⊕	
21. I'm always willing to try new M-Commerce services.				⊕	
22. I will recommend using M-Commerce services to others.				⊕	
23. I am very curious about how things work.				⊕	
24. I like to experiment with new ways of doing things.				⊕	
25. I wish to try new products.				⊕	
26. I like to be around unconventional people who dare to try new things.				⊕	
27. I often seek out information about new products.				⊕	
28. I think using M-Commerce in monetary transaction has potential risk.			⊕		
29. I think using M-Commerce in product purchase has potential risk.				⊕	
30. I think using M-Commerce in merchandise services has potential risk.			⊕		
31. I think using M-Commerce puts my privacy at risk.			⊕		
32. I think the equipment cost of using M-Commerce is			⊕		

Statements	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Expensive.					
33. I think the access cost of using M-Commerce is expensive.			⊕		
34. I think transaction fee of using M-Commerce is expensive.			⊕		
35. Using M-Commerce is compatible with most aspect of my online transaction.			⊕		
36. Using M-Commerce fits my lifestyle.				⊕	
37. Using M-Commerce fits well the way I like to engage in online transaction.				⊕	

The respondents were **neutral** in respect of factors affecting scope and adoption of Mobile Commerce in India: would lead to an invasion of personal privacy, not safe to make purchase, difficult to use mobile phone to conduct transaction, has potential risk in monetary transaction and merchandise services, puts privacy at risk, equipment cost, access cost and transaction fee of using M-commerce is expensive and is compatible with most aspect of my online transaction. It is evident that these respondents never used M-commerce services.

The respondents showed their **disagreement** towards scope and adoption of M-commerce as it is a waste of resources in respect.

According to results that extracted from previous researches, role of facilitating conditions in acceptance of mobile services is very important. Mobile Banking is a type of mobile services and this fact is true for it. Factors like the time of usage, familiarity of the mobile device and users' technology skills, effect users' perceptions of performance expectancy (usefulness) and effort expectancy (ease of use) of the services.

IV. CONCLUSION

Profile analysis of subjects were performed to analyze the scope in terms of Perceived Usefulness, Attitude towards Use, Behavioural Intention, Innovative Index and adoption in terms of Perceived Ease of Use and Compatibility of mobile commerce in India and it is obvious from figure 2 that majority of the respondents showed their agreements towards Scope and Adoption factors of Mobile Commerce in India. Qualitative responses summarized and shown below:

➢ Perceived Usefulness
1. M-commerce contributes to the betterment of life.
2. It is fashionable and trendy to use M-commerce.
3. Using M-commerce would improve my performance in online.
4. Using M-commerce would improve my productivity in online transaction.
5. Using M-commerce would enhance my effectiveness in online transaction.
6. Using M-commerce would make it easier for me to engage in online transaction.
7. I think using M-commerce is very useful for me to engage in online transaction.

➢ Attitude towards Use
1. My general opinion of M-commerce is favorable.
2. By using M-commerce service I feel more satisfied with my transaction.
3. It's necessary to use M-commerce.

➢ Behavioral Intention
1. When M-commerce launches in my region I will definitely use it.
2. I'm always willing to try new M-commerce services.
3. I will recommend using M-commerce services to others.

➢ Innovative Index
1. I am very curious about how things work.
2. I like to experiment with new ways of doing things.
3. I wish to try new products.
4. I like to be around unconventional people who dare to try new things.
5. I often seek out information about new products.

➢ Perceived Ease of Use
1. M-commerce is compatible with existing technology.
2. I think learning to use M-commerce is easy.
3. I think finding what I want via M-commerce is easy.
4. I think becoming skillful at using M-commerce is easy.
5. I think using M-commerce is easy.

➢ Compatibility
1. Using M-commerce fits my lifestyle.
2. Using M-commerce fits well the way I like to engage in online transaction.

Thus the agreements of subjects towards scope and adoption factors clears that users in India are all set to adopt Mobile Commerce devices and services. Findings also confirm that there is a lot of scope for Mobile Commerce services in India.

Highly adaptable mobile commerce solution enables the mobile economy by allowing anyone with a mobile phone to pay, buy, bank and remit money. With the M-commerce, users' can introduce a standard, convenient communication and transaction channel that supports anywhere, anytime mobile commerce services.

On the basis of the above results following conclusion may be drawn:
1. Agreements of subjects towards scope and adoption factors clears that users in India are all set to adopt

Mobile Commerce devices and services. Findings also confirm that there is a lot of scope for Mobile Commerce services in India.

2. Cost doesn't have a meaningful effect, this shows that Indian people doesn't have a clear view of cost of mobile commerce since they didn't experience it in general. This fact can be caused by mobile commerce is in its infancy stage in India or can be caused by customers can afford cost of mobile commerce transaction and transaction fees of mobile commerce are equal to their mobile phone fees and it's not a critical fee for them to use mobile commerce.

3. Risk has a negative effect on attitude toward use. This issue can be a result of "Indian culture" which there is a resistance toward new innovation technologies and product. Privacy and security problems that can be occur in mobile commerce and may result in less customer satisfaction is transaction security, personal data merchant information which is logical to lead to a decrease in rate of intention to use.

Suggestions and considerations for future research

1. The factors of mobile commerce remain intriguing and inconclusive. Several issues need to be studied.

2. The consequences of Mobile Commerce are a lot less controversial. Yet a lot needs to be done to bring about a better understanding of the outcomes of Mobile Commerce.

3. Factors of Mobile Commerce are also gaining increasing acceptance there is therefore a need for future research to focus on various factors of mobile commerce independently.

4. It is well known that Indian environment does not offer equal opportunity to all category of education to give meaningful interpretation to use of mobile commerce. There are several other factors involved apart from intrinsic value of the mobile commerce of the work are to be explored.

5. Mobile Commerce needs to be explored as a primary research construct that contributes extensively to employee and Organizational performance.

Implication for service providers

1. Mobile Commerce service providers should improve their devices and services compatibility with various user requirements, past experience, lifestyle and belief in order to be consistent with user expectation as in the findings Compatibility is found as the strong determinant of using mobile commerce.

2. M-commerce service providers should consider usability and ease of use in every part of designing their mobile commerce devices and applications because these two factors directly affect attitude toward use and intention to use mobile commerce and can provide an increased amount of revenue and profit.

3. Mobile Commerce service providers should make continuous efforts in overcoming high risk services such as risk of transaction security, merchant information, products, online privacy and personal

data, as these problems are ignored by mobile commerce service providers. Risk is a barrier of mobile commerce and is less satisfactory and must be overcome for mobile commerce to become an accepted merchandizing practice. This is logical from theoretical point of view that higher perceived risk in mobile commerce will cause a decrease in intention to use, which will result in lower mobile commerce use.

4. Mobile Commerce service providers should focus on safety and security of mobile commerce services and do their best effort to resolve issues like increasing security and give people warranty of their cost provide safe and protected data and hash codes as it is a perquisite of using the system by consumers.

5. Mobile Commerce service providers should make suitable infrastructure of payment to reduce the resistance through payment and cost for instance in mobile commerce devices, transaction fees can be reduced from credit of SIM card or in shopping customer can pay the price to the delivery person.

IMPLICATIONS FOR POLICY MAKERS:

M-commerce has features inherent to its nature, such as ubiquity, flexibility, convenience, and personalization, and today's features of mobile communication open a world of opportunities for M-commerce tomorrow. However, only those companies with the ability to use these inherent qualities of M-commerce to offer value to their customers will succeed in the mobile environment. The mobile environment still has the potential to empower people, providing them with real-time wireless applications that will make their lives easier and business more efficient and productive.

M-commerce is a reality now and will not be going away in the near term. Problems with these systems are being addressed, and new applications are rapidly being developed. Most of the market is behind this new technology, and it will likely change business by making it easier and more accessible to individuals. M-commerce is a tool of telecommunication and Internet industries. Those involved in it now, may become the giants that Microsoft and Intel have been in the computing industry. Those who follow may be able to capitalize on leading M-commerce mistakes and perfect this technology. Therefore, following implications for policy makers are listed below:

1. Policy makers and industry regulators such as the Telecom Regulatory Authority of India and Reserve Bank of India should measure the risk involved and understand and carefully plan the strategy to implement this new technology into corporate future goals.

2. Policy makers and industry regulators such as the Telecom Regulatory Authority of India and Reserve Bank of India should take pragmatic steps to ensure that mobile commerce service providers in India should improve their efficiency and effectiveness in the provision of mobile commerce services that meet and exceed customer need, desire and expectation.

3. Policy makers and industry regulators should establish and implement an independent periodic survey to assess customer satisfaction of the service quality delivered by mobile commerce service providers in India.

4. Policy makers and industry regulators should publish the results of such satisfaction surveys with the companies named for the public to take knowledge of the respective performance of mobile commerce service providers, which has the potency of triggering change in the quality of service delivered by the lowly rated companies. Such surveys will also give the policy makers and other industry regulators the scientific basis for any sanctions, queries and addressing poor service quality issues in the industry.

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