

# EXPEDITING THE ADOPTION PROCESS FOR HI-TECH TELECOMMUNICATION PRODUCTS

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## ABSTRACT

In order to survive competition innovation has been considered to be the key. Hence manufacturers of hi-tech products in the telecommunication industry have invested their attention to path breaking innovations. It has been a trend that before the innovations have penetrated the market a new one is out for release. The concern for most marketers has been to identify the hurdles in the smooth adoption of technology with the rural-urban divide being a major concern for them. It has been seen that in mobile telecommunication industry there is a lot of competition among the domestic and international players. They have always focused their attention on developing innovative products and services to carve their niche but this has by far led to confusion in the minds of the consumer; hence impeding the adoption process. So companies need to devise appropriate strategies to help consumers become more technology savvy.

**Key words-** mobile telecommunication, innovation, adoption rate.

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## Introduction

Technological changes have been many since the last decade. The market is flooded with several brand prototypes which have confused the consumer to a large extent. Organisations focus on research and development has led to several innovations in the consumer market. Innovations would mean anything from incremental modifications to market transforming product lines. Irrespective of the meaning attached to an innovative product the adoption process follows a periodic trend. It is seen that the population constitutes of only 2.5% of innovators and the rest of them take their own time to adopt a new innovation. Adoption of an innovation is a concern for all organizations especially in case of hi-tech products. This is so because these products have a relatively short product life cycle. They are developed and replaced at a high rate. They generally bring about a radical change to the market where a new product normally drives away others. The concern for active adoption is more

for hi-tech products because they require high investment in R&D. Telecommunication equipment and information technologies are the most visible of all high-tech industries. More than a decade ago mobile telecommunication was all about Nokia which entered the Indian market in 1995. Nokia's business strategy focused on understanding the needs of the Indian consumer by not imposing a one-size fits all approach. They extended their market across different segments by offering an extensive product portfolio. The smooth sail was interrupted by the entry of cheaper if not finer devices made by home grown marketers such as Micromax, Karbonn, Videocon and Spice.

If we consider consumer expectations 5 years ago, mobile telephony was only about voice. In 2007, it evolved to good battery life, brand and price. Over the years Bluetooth and memory card got added to the list. Today the expectation is about internet, email, social networking and services that create

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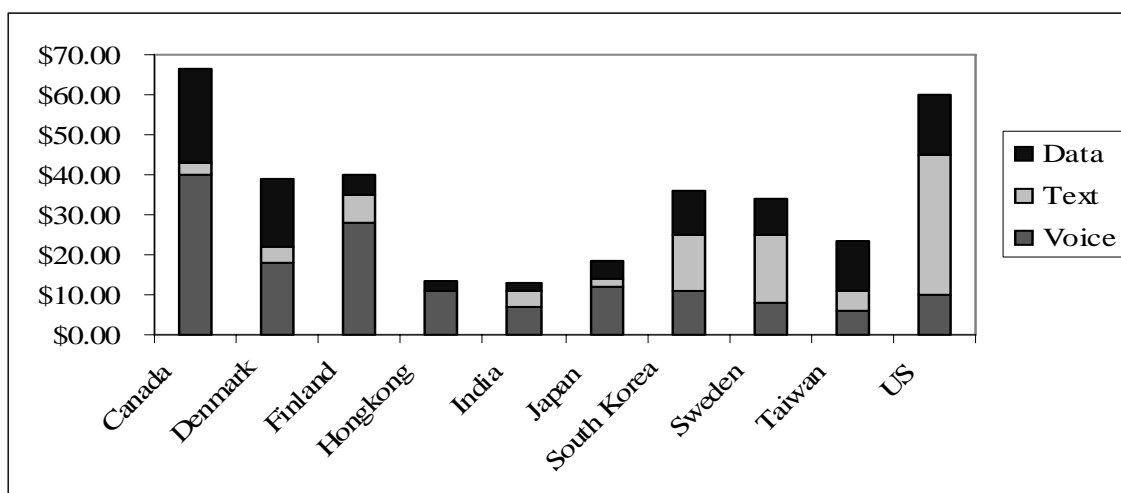
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economic opportunities. Hence Nokia has gone for the most affordable 3G device 'Nokia-2730' priced at 4,689 Rupees. As far as adoption of 3G handsets and 3G enabled services, India is facing several challenges but the forecast made by industry experts seems to be quite promising for the mobile telecommunication industry. If they are able to overcome the constraints by adopting appropriate strategies the adoption process would be accelerated further.

### Mobile telecommunication-opportunities and challenges

Telecom industry has witnessed a transformation from monopolistic regime to regulation and privatization. Telecom Regulatory Authority of India (TRAI), which is a subordinate of the Ministry of

Telecommunications, has played a role in regulating and facilitating innovations in the telecom business. With the intensification of competition among telecom companies' network and simple tariff plans have become hygiene factors and companies are concerned about retaining customers than just getting new ones in the net. The Indian telecom market is still predominantly voice based with an 80:20 split between voice and data revenues. If we consider the international scenario with respect to the minimum cost for a cell phone package; it is seen that Indians pay the lowest cell rates whereas Canadians pay the highest rates. Irrespective of the financial benefits received Indians have not adopted the technology to the desired level. Chart 1 provides details on the minimum cost for cell phone package.



Source-Chip Plus

### Chart 1-Minimum cost for cell phone package

According to a survey conducted by 4P's B&B, ICMR ; 47% of the respondents denied of ever having used any Value Added Service (VAS) on their mobile phone including the basic short message service (SMS).

With the current Indian scenario for mobile telecommunication industry the optimal use of 3G technology and other VAS does not look promising. The advent of 3G technology has led to Mobile internet which comes with many ifs and buts. The first 'if' is that mobile access to internet will reach

meaningful number only if 3G rolls out. There is uncertainty as to when 3G will roll out in India and even more uncertainty whether much of the 3G spectrum will be used for data or operators will use most of the spectrum for voice. Phone based internet is at least at the moment tightly controlled and applications have to be approved or certified. Also Indian language keyboards do not exist on the mobile phone. The 3G subscriber forecast claims that urban India will account for major part of 3G subscribers. The subscriber base will touch 700-800 million in the next 2-3 years of which 50 million could be 3G. The 3 G subscriber base is projected to cross 107 million by 2015. Further the 3G penetration is expected to reach 13% by 2015. Even though India

is witnessing high growth in overall teledensity the urban-rural divide continues. Chart 2 depicts 3G subscriber forecast with rural subscribers likely to comprise 24% of overall 3G subscriber in 2015.

Source-Mobile broad band-Outlook 2015,  
PricewaterhouseCoopers

Chart 2-3G subscriber forecast

With Bharti Airtel and DOCOMO's entry into 3G services the chances of bridging the rural-urban divide are enhanced. Like 2G helped spread voice and 'sms' across rural India, it is expected that 3G will accelerate the spread of high-speed broadband in India. Given the fact that the Indian telecom market is voice centric, it will take time before telecoms recover their 3G investment and start making profits. The huge price paid for 3G will prohibit the successful bid winners from dropping prices of 3G services within the first 3 years. For the thousands of crores spent on acquiring 3G spectrum, telecoms will have to wait patiently for their return on investment in 3G. There are over 20 million Indians using 3G enabled handsets and this number is likely to increase to 39.5 million by 2013.

As per a spokesperson from Uninor, it may take till 2013 for even 10% of the current handset market to be 3G enabled that's 70 million handsets. This is because a handset

lasts 3 years, going through more than one user. So it is only gradually that a new type of handset can reach critical mass in the market.

Another issue which every mobile operator awaited was the government's decision with respect to Mobile Number Portability (MNP). Finally with the government giving a green signal with respect to MNP, there have been several changes in the market with reduced switching cost.

#### **Literature review on Diffusion of innovation**

Innovation and consumer adoption of innovation has been the focus of considerable research (Roehm and Sternthal, 2001). Organisations must continue to innovate or face extinction (Mc Dermott & O'Connor, 2002) and any failure to innovate places the organization at a competitive disadvantage (Byrne, 2000).

The term 'innovation' has been defined with varying orientations; firm oriented, product oriented, process oriented, customer oriented and market oriented. In general innovation is defined as "an idea, practice or an object that is perceived as new by an individual or other unit of adoption" (Rogers 1995).

Innovations need to get diffused into the social system and this definitely takes time. Diffusion being defined as "a process by which an innovation is communicated through specific channels over time among members of a social system that are linked via networks (Rogers 1995). Diffusion is related to another concept called adoption. The rate of adoption is the relative speed with which members of a social system adopt an innovation and reflects the fact that some people adopt innovations faster and more quickly than others. The market does not react to an innovation in a similar manner and all members of the population do not adopt the innovation simultaneously (Brown, 1981). Products and services should be customer-oriented for easier diffusion and quicker adoption to increase retention rate. Consumer adoption of new products has been a major concern for marketers especially in case of hi-tech products where new innovations make their way into the market in a sequential manner. Also the operation of Moore's law influences consumer's adoption of new innovations; where an assumption is made that the performance of high-tech products doubles every 18 months with no increase in price.

The process of adoption in case of new innovations involves three distinct phases before it is adopted.

- The bowling alley  
It is the period during which the new product gains acceptance in niche markets within the mainstream market but has to achieve wide spread adoption.
- The tornado  
It is the period when the general marketplace switches over to the new technology.
- Main street  
It refers to the period when the tremendous growth in the early majority market stabilizes.  
The speed with which innovation penetrates the social system is of importance to the organization. Especially in case of mobile telecommunications market which is characterized by rapid technological change with a number of technologies co-existing, collaborating and competing with each other in different markets.

Lyytinen & King (2002) posits that structure and form of today's mobile industry is enabled and shaped by the dynamic interaction/interfacing of 3 critical systems- the innovation system, the market place and the regulatory regime and argue that changing interactions are the key to understanding the development and evaluation of advanced mobile infrastructure and the resulting adoption and diffusion of mobile services across different national and regional markets. Fig 1 provides the schematic representation of the 3 interacting systems.

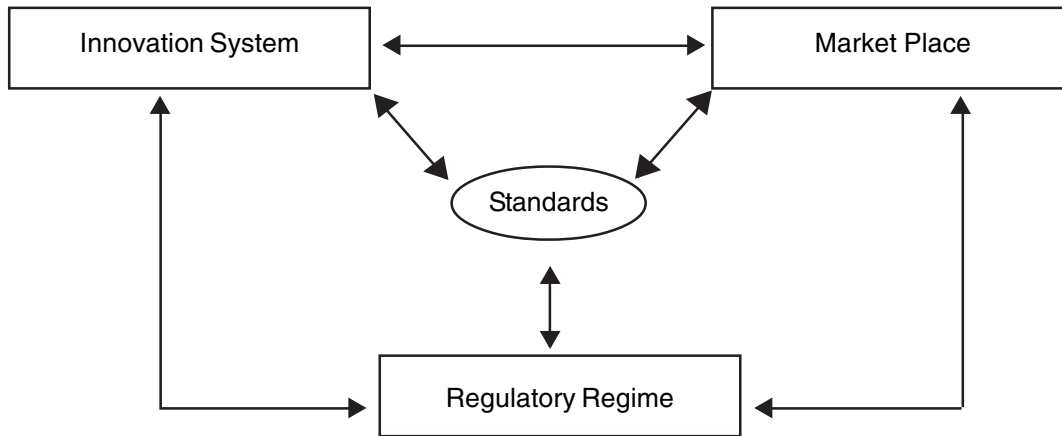


Fig. 1. Wireless industry's institutional environment (Lyytinen & King, 2002).

A brief description of the interacting factors follows

- Innovation System

It is the interlinked network of sites, competencies and resources which are capable over time of developing novel technologies and solutions.

- Marketplace

It is set of actors that produce telecommunication services and technologies

(Within the technological potential defined, within telecommunication standards and technical innovations).

- Regulatory regime

Any type of authority (industrial, national & international which can influence, direct, limit or prohibit any activity in the innovation system, the market place or the regulatory regime).

Wireless services are critically dependent upon the creation and implementation of intra and intersystem standards. Standards are seen as providing an essential and coordinating role between innovation system, the marketplace and regulatory regime.

Having understood the significance of the actors of the wireless industry's institutional environment; their role in the Indian Telecommunication market needs to be addressed to.

**Telecommunication industry and diffusion of innovations**

If we consider the history of wireless telecommunication services; the diffusion of innovations can be classified into four phases

**1995-1999-Phase I**

Infancy & teething troubles

- Wire internet introduced and tariffs as high as Rs.32 per minute for outgoing call and Rs.16 per minute for incoming calls

- By 1999 there were mere one million mobile subscribers in the country.

### 2000-2003- Phase II

Revolutionary but turbulent

- Major cut in tariffs and incoming calls becoming free in July 2003.

### 2004-2008- Phase III

Gravity defying growth

- Rapid growth in both prepaid and post paid services
- Approximately 8-10 million monthly subscriber additions in the year 2008.
- Fierce competition; India reaches lowest tariff rates in the world.
- Average Revenues Per User (ARPU) recorded at a low of \$5-6

### 2009 onwards- Phase IV

The rise continues but at a rapidly falling rate

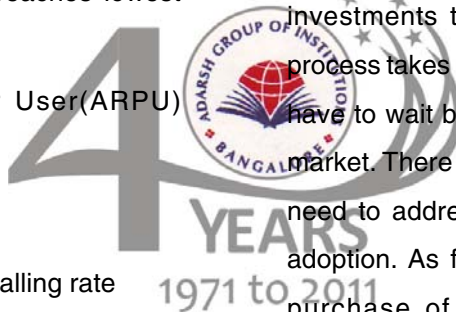
- Number of players to go as high as high as 12 in each circle.
- 3 G services launched
- Mobile number portability (MNP) to become a norm by end of 2009

With the innovation system, marketplace and regulatory system in India being in sync the wireless telecommunication industry has seen the emergence of new market leaders. The search for better service and tariffs continues and the first, since

the launch has seen Idea Cellular as one of the MNP winner. It saw 150,000 new subscribers “port in” in the first 30 days. Which is just 20,000 less than the biggest gainer ( Vodafone Essar ).Idea cellular always made the right calls by pumping in money in the under-penetrated ‘B’ and ‘C’ circles such as Bihar, Orissa and Rajasthan. While venturing into these new circles, Idea was able to give congestion free networks. The most appealing aspect of their strategy was the entry into ‘B’ and ‘C’ circles where penetration was low and customers came for a low cost. Idea has managed to keep up with industry changes with outsourcing i.e. tower sharing to manage competition.

Though telecom companies have been pouring in investments to diffuse an innovation; adoption process takes its own time. Telecom companies will have to wait before 3G technology penetrates the market. There are some concerns which marketers need to address with respect to the definition of adoption. As far as a company is concerned the purchase of a 3G enabled handset can be considered to be adoption but adoption in a complete sense will occur only when the consumer subscribes to 3G technology and further uses all the features associated with it.

This kind of complete adoption normally does not take place. This happens because laggards and early majority exist together. Even if customers have newer and better versions of a product, they are often resistant to change their old patterns of behaviour.



This happens because of reasons like fear, complexity associated with the technology and lack of comfort in using the technology. So the concern is that even if the 3G rural subscription forecast materialize most rural customer would not use the technology to the optimal level. Probably the use of internet would also be hampered because Indian language keys do not exist on mobile phones.

Also phone based internet is at least at this moment tightly controlled and applications have to be approved or certified. To overcome this hurdle rediff.com is developing software that will make composing Indian language text on the mobile infinitely easier. Leave apart the rural consumer; the urban educated consumer has his own reasons for not adopting the 3G technology to the optimal level. Even if an urban consumer who purchases the latest model of Nokia series of handsets, normally ends up preferring his old user friendly handset. It is surprising to know that there are quite a few features that many mobile phone users don't even know exist in their phones. For instance very few people know that you can access the internet on your laptop via a GPRS connection on your phone or that you can enjoy international radio station over the internet by simply downloading an internet radio application. Hence considering customer lethargy in unlearning old patterns of behaviour and adopting new ones; successful product leaders target innovators and early adopters.

#### **Strategies to influence customer adoption rate**

In order to improve adoption rate companies use segment wise strategies. In order to remove cash barrier to mobile ownership for the lower segment

of the market microfinance options have enabled people in remote areas to use innovative payment options. For the environment savvy consumer, Nokia has gone green with smart phones. For the starters the phones come with eco-minded wallpapers, and Ovi store. Nokia devices are 80% recyclable and the packaging material on the phones is 60-100% recyclable. Also Nokia has set up over 5000 recycling points around India where in one can drop a full handset package. All Nokia's products and solutions are backed by unparalleled retail and service care network across the country. Sony Ericsson has come up with the Green Heart series. These phones are created out of recycled water bottles and CD's. The phones are painted using waterborne paints from locally sourced water to reduce exposure to volatile organic compounds. The green applications in these phones include a carbon footprint calculator to check the carbon dioxide emitted each day. Such services enable customers to easily upgrade to a new technology. Given that rural India is not as tech savvy and literacy levels are low, in times to come voice SMS will gain more credence. One such venture was initiated by Bharti Airtel and IFFCO-TOKIO which enabled farmers to call and check weather conditions and get tips on type of crop to grow and measures to deal with pest.

It has been seen that most successful product leaders target innovators and early adopters. This basically helps brands to carve their niche. Later the innovation then captures the market with time. What ever the strategy adopted by the company; the use of technologically advanced telecommunication devices are not designed to suite rural India.

## Conclusion

Telecommunication industry has seen a lot of changes with innovative products and services on the rise. Competition among domestic and multinational companies has been more of warfare; with each one trying to grab a bigger pie of the market. Be it Blackberry or Idea cellular all are increasing their expenditure on advertising to improve brand recall. Technology has changed from 2G to 3G for the educated customer but for the rural customer 2G is only about voice. Even if 3G subscription forecasts materialize; how is the rural; not very educated consumer going to use it? Probably most of the customers with more disposable income will end up buying the innovative handset and use the device only for voice or may be for text. Finally they end up being laggards wearing the cloak of early majority. So the issue still remains; what is the strategy that companies are planning to devise so that all the customers use their mobile telecommunication devices for the purpose for which it has been designed?

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