A RESEARCH PROPOSAL

ON

A Study on Integrated, Innovative and Inclusive Framework for Mobile Telecom Service Users in Rural Punjab

Submitted to

LOVELY PROFESSIONAL UNIVERSITY

In partial fulfillment of the requirements for the award of degree of PHILOSOPHY OF DOCTORATE (PhD) IN MANAGEMENT

Submitted by: Lokesh Jasrai
Regn No. 41100123

Supervised by: Dr. Anand Thakur
Assistant Professor

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1. INTRODUCTION

Indian economy is witnessed with a bi-faceted change- a change from national to global on one side and, urban to rural on the other. With the evolutionary change and characteristics of a developing nation, a visionary entrepreneurship is required to respond proactively. Today, many FMCG companies like HUL, ITC, Godrej, P&G, Colgate-Palmolive and consumer durables makers like LG, Maharaja, have entered in rural markets through innovative approaches and realized a huge untapped potential in this market. Apart from the growth of FMCG and consumer durables, a substantial growth has also been noticed for mobile and telecom services in these areas. Rural and urban markets are entirely different due to demographic, behavioral, attitudinal and economic dissimilarities. Hence, marketers are required to apply innovative approaches for rural markets to generate customer value with affordable cost, better convenience, and efficient communication.

1.1 India’s Rural Potential

India has the largest potential rural market in the world. It provides wide and untapped market for many products and services which are being marketed for urban people. Nearly 53 percent of the sales of FMCG and 59 percent sale of durable companies come from the rural areas (Shukla and Tandon, 2011). The McKinsey report (2007) predicts that in twenty years, the rural Indian market will be larger than the total consumer markets in countries such as South Korea or Canada today, and almost four times the size of today’s urban Indian market. India’s rural potential can be examined with the following facts-

1.1.1 Improvement in Rural Income Distribution

Developments under five years plans, and other specialization programs like land reforms, rural electrification, rural communication and rural credit facilities made a dramatic shift towards the
prosperity in rural households. The lowest income class (25000 INR/annum & below) has reduced from 61 per cent in 1994-95 to 20 per cent in 2006-07.

Table-1.1 Showing Rural Income Distribution

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Above Rs. 100000</td>
<td>1.6</td>
<td>3.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Rs. 77001-100000</td>
<td>2.7</td>
<td>4.7</td>
<td>5.8</td>
</tr>
<tr>
<td>Rs. 50001-77000</td>
<td>8.3</td>
<td>13.0</td>
<td>22.4</td>
</tr>
<tr>
<td>Rs. 25001-50000</td>
<td>26</td>
<td>41.1</td>
<td>44.6</td>
</tr>
<tr>
<td>Below Rs. 25000</td>
<td>61.4</td>
<td>37.4</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Source: Krishnamacharyulu and Ramakrishnan, 2006

1.1.2 Rural Consumption Growth

As per the study of Mckinsey (2007), a substantial growth in rural consumption has occurred since last two decades. The rural consumption has increased from Rs 4,498 billion to Rs. 6,093 billion during the period of 1985 to 1995 with 3.9 per cent compound annual growth rate and it is expected to reach Rs. 16,701 billion by 2015 and Rs. 26,383 billion by 2025 with compound annual growth rate of 5.1 per cent. It is also predicted that by the end of 2025, the rural consumption will create a large potential market with a worth over Rs. 6 trillion.

Table- 1.2 Showing Annual Rural Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Rural consumption (In billion Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>4,498</td>
</tr>
<tr>
<td>1995</td>
<td>6,093</td>
</tr>
<tr>
<td>2005</td>
<td>9,688</td>
</tr>
<tr>
<td>2015</td>
<td>16,701*</td>
</tr>
<tr>
<td>2025</td>
<td>26,383*</td>
</tr>
</tbody>
</table>

1.1.3 Per-Household Consumption in Rural India

As per the study of Mckinsey (2007), Per-Household Consumption in rural India increased from Rs. 45,000 per annum to Rs. 50,000 per annum from 1985 to 1995 and it reached to Rs. 67,000 per annum in 2005. The research by Mckinsey predicted that Per-Household Consumption is expected to reach Rs. 104,000 and Rs. 158,000 per annum by 2015 and 2025 respectively.

Table- 1.3 Showing Per-Household Rural Consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Per-Household Consumption (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985</td>
<td>45,000</td>
</tr>
<tr>
<td>1995</td>
<td>50,000</td>
</tr>
<tr>
<td>2005</td>
<td>67,000</td>
</tr>
<tr>
<td>2015</td>
<td>104,000*</td>
</tr>
<tr>
<td>2025</td>
<td>158,000*</td>
</tr>
</tbody>
</table>


1.1.4 Rising Rural Prosperity

A substantial growth in prosperity has been observed in last two decades. The poverty ratio at national level has decreased from 37.3 per cent to 28.3 per cent (on the basis of Uniform Recall Period) from 1993-94 to 2004-05 and decreased from 27.1 per cent to 21.8 per cent (on the basis of Mixed Recall Period) from 1999-2000 to 2004-05 in rural India.

Fig. 1.1 Showing Poverty Ratio at National Level

Source- Annual Report 2010-11, Planning Commission of India
1.2 Rural Marketing

Rural marketing manages all those activities involved in assessing, stimulating, and converting the purchasing power into an effective demand for specific products and services, and moving them to the people in rural areas to create satisfaction and a standard of living to them and thereby, achieving the goals of the organization. Marketing practices in subsistence market places are based on the framework consisting of 4 Cs- customer value, customer costs, customer convenience, and customer communication (Kotler, 2003) and 4 As- acceptability, affordability, availability, and awareness (Prahalad, 2004). Some of the prominent examples such as entry of lifebuoy soap into rural market through product differentiation with extensive marketing campaign by Hindustan Unilever Ltd., rural financing strategy by ICICI bank, facilitating micro credit to rural community through Kisan Credit Cards and Kisan Gold Cards by SBI, rural distribution strategy by ITC’s e-Choupal, Choupal Sagar and HUL’s Project-Shakti show the initiatives for entry into rural market.

1.2.1 Approaches for Rural Marketing

Along with the evolution of rural marketing, distinct approaches viz., trickle down, undifferentiated, differentiated and bottom of the pyramid (3Is) have been developed by the marketers. Trickle down approach refers that rural house holders buys their wares from the nearby” feeder town” either on a special visit or visit for their work purpose and paradigms and tools of urban marketing can be extended to rural areas; Undifferentiated approach refers that rural markets are adaptive and adjunct to the urban market and do not require any differentiated strategy; Differentiated approach concentrates on the differences between urban and rural market and refers to add value through marketing mix. Bottom of the pyramid approach refers rural markets as new opportunity that demands innovation (in technology, products, services and business model), requires partnership (public-private partnership), need of rural entrepreneurs at village level. Hence, contemporary marketers are using 3 Is framework (Integrated- Innovative-Inclusive) for entry into rural market.
This 3I’s framework contains certain tasks of rural marketing such as entrepreneurial, educative, innovative and integrative to generate outcomes such as creating buying power, shaping aspirations, tailoring local solutions and improving access as shown in the diagram shown below.

Source- Krishnamacharyulu and Ramakrishnan, 2010
1.2.2 Rural Entrepreneurship

Rural entrepreneurship helps to improve competitiveness of a society by creating innovation that helps to create a collaborative approach and integrating partnership with institutions, implementation of special legislation from local government, business training, technical assistance, formation of small business development centre, investment in construction and renewal of infrastructure system, and strategic alliances, are imperative for initiating and developing rural entreprenurships (Ozgen, Minsky, 2007). Some of the contemporary examples depict successful rural entry, such as ITC’s e-Choupal and Choupal Sagar facilitate distribution of products and services into rural areas and procurement of agricultural commodities by developing village level microenterprises. HUL’s Shakti facilitates distribution in rural areas by appointing rural women (known as Shakti Amma) as sales force that run their own business as entrepreneurs and perform an agency role for HUL. DSCL’s Hariyali Kisan Bazar is an example of innovative business model that acts as a catalyst for social change, inclusive growth and considered as malls for rural entrepreneurs in India. PepsiCo in India has pioneered the concept of contract farming with both backward and forward linkages for agricultural products. It has developed ‘Partners in Progress” through innovative partnership model with incorporating seed companies, banks, insurance agencies, government departments, agri-input companies and farmers organizations with aim to facilitate small-scale enterpreneurships at the village level.

1.3 Public-Private Partnership

A public-private partnership (PPP) is a contractual agreement between the public and private sectors, whereby the private operators commit to provide public services that have traditionally been supplied or financed by public institutions. The ultimate goal of this partnership is to obtain more ‘Value of Money’ than traditional options. Singh and Prakash (2010) proposed a framework for the partnership between the public sector (which could be the Government or an agency) and the private sector (which could be a Private for profit provider or a Voluntary organization) as a dyadic relationship in a network. These relationships are guided by the policy of partnership. The partnership is based on a formal as well as informal relationship between the
two sectors. The two sectors pursue joint activities by engaging with each other in an exchange of resources and information, and establishing formal as well as informal co-ordination.

Fig. 1.4 Showing Framework of Public-Private Partnership

1.3.1 Mutual Objectives of Public-Private Partnership

<table>
<thead>
<tr>
<th>Government Perspectives</th>
<th>Private Sector Perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limitations of government resources and challenge to meet infrastructure gap</td>
<td>Public-Private partnership represents enormous, long- term business opportunity</td>
</tr>
<tr>
<td>Need for a new financing and institutional mechanism</td>
<td>Initiatives taken by government to promote public-private partnership</td>
</tr>
<tr>
<td>Need for improvement in delivery of public services by efficient use of resources, modern technology, better project design</td>
<td>Huge potential for private participation in telecommunication, transportation, industrial infrastructure and energy sectors</td>
</tr>
<tr>
<td>Access to funding from private sector</td>
<td>Opportunity of growth in the business</td>
</tr>
</tbody>
</table>


1.3.2 Types of Framework for PPP Projects

Involvement of private sector in public partnership requires inducements like financial incentives, an environment of least government regulations and actions, and explicit government
deeds in support of the private sector. With the aim of providing all these inducements in the partnership, various modes of partnership projects have been operated with a slightly different legal framework as follows-

- **Build Operate Transfer-** It is a form of project financing, in which a private body obtains a concession from the private or public sector to fund, devise, build, and activate facilities stated in the concession contract. The infrastructure that is created as per this mode, traditionally, gets transferred to the government at the end of the dispensation period. The earnings of the project become the source of loan repayment for the lenders of the project.

- **Build Own Operate and Transfer-** Under this deal, the developer designs and builds an entire project or facility at no cost to the government or a joint venture partner. The developer owns and manages the facility as a business for a specified period (usually 10 to 30 years) and transfers it to the government or partner at a formerly agreed-upon price or market price.

- **Build Own and Operate -** Under this, all the activities of the project—building, owning and operating—lie with the private sector. It is almost equivalent to the private investment doing for private purpose, with a mere point of distinction that in this project, there is some continuing level of government involvement which is absent in the private investment.

- **Build and Transfer-** This model involves a contractual understanding in which the project promoter takes on the financing and creation of a given infrastructure or development facility and after its conclusion, the promoter turns it over to the concerned government agency or local government unit.

- **Build Lease and Transfer-** Under this model, a project proponent is approved to finance and construct an infrastructure or development facility. As the project gets completed, the proponent turns it over to the concerned government agency or local government unit on a lease arrangement for a fixed period. After the lease period, the ownership of the facility gets automatically transferred to the concerned government agency or local government unit.
1.4 Indian Telecom Industry

India's telecommunication network with its 787 million telephone connections is considered second largest network in the world after China (Annual Report: 2011, Department of Telecommunication). Indian mobile market is also one of the fastest growing markets and is forecasted to reach 868.47 million users by 2013 (Telecom Regulatory Authority of India, 2011). The status of development of the various services of the telecom sector is outlined below:-

a. Wire-line- The decreasing trend in wire line subscriber base is shown in the table below-

Table- 1.4 Showing Wire-line Subscriber Base

| Wire-line subscriber base (In Millions) |
|-----------------|-----------------|
| March’05        | 41.43           |
| March’06        | 41.50           |
| March’07        | 40.75           |
| March’08        | 39.42           |
| March’09        | 37.96           |
| March’10        | 36.96           |

Source- Annual Report 2009-10, TRAI

b. Wire-less- The increasing trend in wire line subscriber base is shown in the table below-

Table- 1.5 Showing Wire-less Subscriber Base

| Wire-less subscriber base (In Millions) |
|-----------------|-----------------|
| March’05        | 52.22           |
| March’06        | 98.77           |
| March’07        | 165.11          |
| March’08        | 261.07          |
| March’09        | 391.76          |
| March’10        | 584.32          |

Source- Annual Report 2009-10, TRAI

c. Growth in Tele-Density- Overall growth in Indian tele-density (number of telephones per 100 population) is noticed from 7.02 per cent in 2004 to 53.46 per cent in 2010 and growth of urban tele-density is noticed from 20.79 per cent in 2004 to 122 per cent in 2010 (Annual Report 2011, Department of Telecommunication).
1.4.1 Indian Mobile Service Industry

The Indian mobile service industry is providing affordable telecom services with aim to empower common man, driving wider economic growth and contributing to government finances. However, after a phase of robust growth over the recent past, the Indian telecom industry appears to be slowing down. The number of net mobile connections in May 2011 was around 35% less than those of in March 2011. Intense competition with 10 to 12 operators in the service area has led to a free-fall in tariffs. However, this free-fall in tariffs has not been matched by an increase in minutes of use per connection per month (MOU), which on the contrary, have witnessed a drastic fall from a peak of 465 minutes in 2007 to 369 minutes at the end of 2010. As a result, average revenue per user per month (ARPU) has witnessed a steep fall and India, currently, has one of the lowest ARPUs in the world. The consequences of these trends are a sharp decline in the revenues of telecom market (Cellular Operators Association of India, 2011).

Fig. 1.5 Average ARPU per month

1.5 Innovation in Mobile Communications Services

Classification of innovation in services is proposed by Gallouj and Weinstein (1997) to distinguish new tariff plans according to their degree of novelty. Innovation may be the result of either intentional efforts, e.g. planned R&D activity, or unintentional processes, e.g. learning mechanisms. Six distinct dimensions of innovations have been given by Gallouj and Weinstein (1997) viz., radical innovation, incremental innovation, improvement innovation, ad hoc
innovation, recombinative innovation, formalization innovation. Radical innovations are related with introduction of a totally new product (service). Incremental innovations involve the substitution of existing characteristics or the introduction of new ones. Recombinative innovation requires the combination of different final and technical characteristics. They may also involve the creation of a new product by combining the characteristics of two or more existing products. Ad hoc innovations refer to social, interactive constructions of a solution for particular problems posed by specific customers, and imply that firms and clients cooperate by sharing their knowledge and experience on the specific issue. Improvement innovations refer to the process of improving selected characteristics without changing the overall architecture of the system. Finally, formalization innovations refer to the process of putting the service characteristics in “order”, by specifying them and making them concretes. In the mobile communications sector, four innovations stand out as particularly relevant: radical innovation, incremental innovation, recombinative innovation and improvement innovation.

1.6 Need, Scope and Objectives of the Study

The present study investigates the three dimensions of popular 3I’s (Integrated- Innovative- Inclusive) framework applicable in rural marketing (As advocated by Krishnamacharyulu and Ramakrishnan, 2010). The first one i.e. integrated approach seeks to integrate the efforts of organization and government in the form of public-private partnership for the rural development. The focus, here, will be on identification of problems encountered by the companies, rural mobile users, and central and state governments’ agencies entrusted with the task of rural development. Second one i.e. innovative approach will focus on determining various factors inducing innovations in mobile services in rural market. Such analysis will provide useful impetus for marketers in enhancing the customer satisfaction and brand loyalty. Third one i.e. inclusive approach focuses on inculcating entrepreneurial skills among rural people by regarding them as change agents and one useful contribution will be suggesting some framework for evaluating the entrepreneurial competency of rural people. Hence, the third approach will focus on evaluating entrepreneurial competency for rural people and suggesting criteria for deciding about their entrepreneurial competency. This will assist telecom companies in perusing the 3I’s frame work for the bottom of pyramid marketing. The study is mainly conducted for mobile
users in rural Punjab, hence rural population is considered as population for the study. The specific objectives of the study are as follows:

1. To identify problems associated with mobile telecom services in rural areas and developing a conceptual framework for strengthening public-private partnerships in rural mobile services.
2. To evaluate rural preferences & satisfaction towards mobile telecom services.
3. To measure consumer innovativeness and factors stimulating innovativeness in mobile telecom services.
4. To offer road map for entrepreneurial building in rural areas for mobile telecom services.

2. LITERATURE REVIEW

2.1 Problems Associated with Expansion of Rural Mobile Services

Problems associated with expansion of rural mobile services can be classified into three distinct categories viz., infrastructural, technical and manpower. The rural mobile teledensity is 35 per cent that is one-fifth of the urban mobile teledensity and the gap between urban and rural teledensity has widened significantly over the past decade. The reasons for low teledensity are due to lack of infrastructure facilities coupled with lower per capita income. Massive need of towers are required in low and spread out population in rural areas for establishing consistent network coverage (Cellular Operators Association of India, 2011). Acquisition of land in the rural areas for setting up fiber cable and developing others infrastructure facilities is very slow as land is under the government and gram panchayat. Apart from this, maintenance of towers depends on battery backup because of shortage of water and electricity. Hence, operational cost per user has become very high in rural areas as compared to urban. Instead of technical problems, the education level in rural areas is still relatively low as compared to urban areas, hence, it is required to develop content in vernacular language and to design user-friendly and menu driven software with innovative graphics to overcome the limitations of illiteracy (Department of Telecommunication, 2010). Some other problems such as shortage of technical infrastructure, diverse cultures, low educational standard, low technical knowledge, frequent power shortages, rugged environmental conditions, bearing high costs of acquiring and serving
rural customers, to drive future growth and higher valuations with the right kinds of services for this population represent the challenges and problems that exist in rural areas (Accenture Research, 2009).

2.2 Consumer Preferences and Satisfaction towards Mobile Phone Services

Five constructs viz., brand image, perceived call rate, strong network coverage, perceived value-added services, and perceived customer services affect selection of operators in telecom service industry and two factors, brand image and perceived call rate, have strong positive and significant influence on consumers’ selection of a cellular operator. Three another constructs viz., price, service quality and brand image are also important for choosing a particular mobile operator. It is evident that the price and service quality hypotheses are more important than the brand image hypothesis (Alom et.al, 2011; Rahman et.al. 2011). In mobile telecommunication, customer satisfaction directly affects customer loyalty and geographical coverage, network quality, call at peak hours, better calling rate, convenience in switching phone number, low server problem, value added services, better customer care, resolving complaints are considered as customer loyalty variables. The results indicated that network quality, customer service along with value added services enhance loyalty of the customers (John, 2011; Santouridis and Trivellas, 2010). There is a significant role of consumer’s perception for selecting a particular mobile telecommunication service. Consumers’ perception is widely varied in accordance with communication quality, call service, facilities, price, customer care and service provider’s attributes. It has been observed that communication and price are the most influential and most preferential factors in selecting telecommunication service (Rajkumar and Paulrajan, 2011). Price is the most important factor to select the telecommunication service followed by service quality, product quality and promotion (Haque, Rahman and Rahman, 2010). There is a significant relationship between service quality and customer satisfaction in telecom industry. The service quality variables that significantly affect customer satisfaction include competence, courtesy, tangibility, reliability, responsiveness and communication. It is required to improve the service quality by giving what customers want and when they want. Thus, identifying and satisfying customers' needs could improve network services because what is offered can be used to separate the company's own services from competitors' (Agyapong, 2010). Apart from the
technical features of service quality, the role of service employees in after-sales service delivery is considered one of the important factors in service quality. Provision of information, service delivery, maintenance and repair, billing service, and complaint handling service are considered the major components related to after-sales support in telecom service. Lack of clarities of bills and delays in making decisions on complaints are identified as some of the main reasons for customer’s dissatisfactions (Potluri and Hawariat, 2010). Customer loyalty in mobile services is related with the impact of service quality and customer satisfaction. Service quality is conceptualized by choosing six constructs viz., quality of network, value added service, mobile devices, customer service, pricing structure and billing system and customer loyalty includes repurchase intention, resistance to switch to a superior competitor’s product and willingness to recommend the preferred provider to others. The study revealed that service quality is a major predictor of both customer satisfaction and loyalty; customer support, pricing structure and billing system are having significant positive effects on both the concepts. Furthermore, the network quality dimension was found to have significant positive effect on loyalty (Santouridis and Trivellas, 2010). Six salient attributes in mobile services viz., connectivity of network, customer service, tariff of mobile services, variety of plans, value added services and technology deployed by network are identified by Tripathi and Siddiqui (2009). The customers accorded the greatest importance to the connectivity of network attribute, followed by customer service and tariff of mobile services. It is required for mobile service providers to deploy benefit segmentation and develop customized mobile service packages for different customer segments. Apart from the service quality, demographic characteristics of mobile users influence the choice of a particular mobile service provider as well as the choice of concerning the type of connection either pre-paid or postpaid. Age, occupation, gross income per month, educational qualification, nationality, marital status, gender and number of years in staying are considered under the study. The study reveals that gender is found to be significant in influencing the users’ choice of mobile service with reference to the type of connection, pre-paid and post-paid connection (Shrivastava and Israel, 2010). There is a great need for value proposition of mobile services to rural customers and emergence of a new business model. An important prerequisite in the creation of successful business models is an understanding of the needs and buyer values of the emerging rural consumer. The research has found that some fundamental disconnect exists between the
current presumptions of mobile network operators and the reality of consumer needs and desires when it comes to mobile services. Operators must develop a more accurate understanding of the mobile value proposition in rural communities, as well as potential barriers to adoption, if they are to achieve profitable growth and high performance through rural expansion (Accenture Research, 2009). Perceived expectations and perceived quality have a great positive and direct impact on perceived value of mobile services. It is evident that perceived expectations have a positive effect on perceived quality of mobile services; therefore, as the level of perceived expectations increases, the level of perceived quality also increases. Perceived quality and value creates positive effect on customer satisfaction (Tung, 2010). The rural markets are an important and growing market for most products and services including telecom. The characteristics of the market in terms of low and spread out population and limited purchasing power make a challenge for marketers to serve. 4 A's model of Availability, Affordability, Acceptability and Awareness provide a means of developing appropriate strategies to tackle the marketing issues for marketing telecom services in rural areas (Mukhopadhyay and Aithal, 2007).

2.3 Rural Entrepreneurship and Social Empowerment

Successful penetration in rural areas needs a public-private partnership between a corporation and NGOs with aim to generate micro-entrepreneurship. Hindustan Unilever Ltd. adopted an innovative mechanism for distribution of goods to villagers in relatively remote areas by establishing Shakti dealership. The successful rural penetration is based on the compatibility between the corporate interest and the rural people under the target. The aim of project Shakti is to empower women in rural India through creation of income generating capabilities for underprivileged women, with developing a sustainable microenterprise opportunity, and to improve rural living standards through health and hygiene (Rohatynskyj, 2011). Indian rural market is the complex operating environment due to lack of key infrastructure and shortage of skilled people. Several mobile telecommunication firms strategically entered in bottom of pyramid (BOP) market and reveal a requirement of right business model to deliver needed services by understanding local communities, realization of sustainable profits and enabling local economic empowerment. Some of the telecommunication firms’ viz., Celtel in Nigeria, Grameen Telecom in Bangladesh, MTN in Uganda, and Smart Communication Inc. in Philippines made
efforts to win community trust and community buy-in by establishing non-traditional partners with aim to provide unorthodox benefits by the firms and receive in return unorthodox benefits. Winning a community buy-in involves two specific activities: promoting local entrepreneurship i.e. developing local individuals as entrepreneurs that can help build their communities in the long term; and initiating corporate social responsibility activities (Anderson et. al. 2010). Apart from the right business model, entrepreneurial skills are also mandatory to measure the success of projects. Entrepreneurial success is a function of three constructs viz., entrepreneurial traits, attitude and business skills. Drive and energy, responsibility, persistence, self-confidence, initiative, need for independence, tolerance for uncertainty, optimism, innovativeness and creativity and perseverance are used under entrepreneurial traits; long-term commitment, persistence in problem solving, attitude to risk taking, dealing with failure, use of feedback, seeking assistance, flexibility, need for achievement, profit-orientedness, integrity, resolving issues without procrastination, positive influence and self-resolution of entrepreneurial stress are used under attitude and setting goals; developing business plans, delegating, dealing with work disputes, training subordinates, dealing with customers, dealing with government officials, keeping financial records, talent acquisition, marketing skills, catering to multiple customers and ethical competition are taken under business skills by Shaw (2010). With the help of discriminant analysis, entrepreneurs are classified into ‘successful’ and ‘unsuccessful’ categories based on entrepreneurial traits and business skills (Shaw, 2010). Development of social enterprise is one of the important features to enter in bottom of pyramid market. Economic opportunity, income generation, human capability building, and community development are key success factors for developing social enterprises. Bottom of pyramid market can be better served by adopting social enterprise development model given by Nielsen & Samia (2008) and Ozgen & Minsky (2007). The key success factors of this model depend on entrepreneurial spirit of the initiator coupled with a motivation to improve one’s life and that of one’s group (family and/or cooperative) through participation in the economic marketplace. Initiators should have a clear understanding of their customers’ needs and requirements as reflected in their innovative product, promotion, pricing, and distribution strategies. Social enterprise development model requires cooperation among multiple players drawn from both the private and public sectors, including NGOs, government agencies, and cooperatives are essential partners in the process.
Some of the innovative consumer marketing approaches are also developed by marketers for business success and social empowerment at bottom of the pyramid by creating consumption, entrepreneurship, and social capital in impoverished environments. Businesses must follow three principles of consumer marketing – deep understanding of subsistence consumer psychology, social embeddedness, and entrepreneurial empowerment (Sridharan and Viswanathan, 2008). Recognition and creation of entrepreneurial opportunities in rural areas are utmost important factors for the success of rural entrepreneurship (Ozgen and Minsky, 2007, Guclu et. al., 2002). Recognition of opportunities of rural entrepreneurship in developing countries are based on certain resources such as intellectual & human resources which consist of education, knowledge and training, environmental resources which consist of developing partnerships or cooperatives, and socio-cultural resources such as socio-cultural infrastructure (Ozgen and Minsky, 2007). Apart from the opportunity recognition process, another important aspect is opportunity creation process; this process consists of two parts viz., generating promising idea and developing promising idea into attractive opportunity. Idea can be generated by evaluating the social needs and social assets in rural area. The chances of success are significantly increased if the action and research are grounded in a set of plausible hypotheses about the underlying social impact theory and business model, which includes an effective operating model, and a viable resource strategy. These elements represent the core of any worthwhile social venture idea (Guclu et. al., 2002). The innovation also acts as a driving factor in the opportunity recognition process. Some of the business models in developing countries represent the successful entry into rural market by creating rural entrepreneurship such as Village Phone Program in Bangladesh (Islam, 2005) and Smart Communication Inc., Philippines (Smith, 2004). The village phone program is based on the shared access business model with multi-stakeholder partnership among grameen telecom (non profit rural telecommunication company), grameen phone (joint venture involving four companies), grameen bank (microfinance institution), and village phone operators (rural women entrepreneurs financed by the grameen bank). The business model creates win –win situation to all its partners and stakeholders from Telecom Company to village community members. Grameen telecom earns revenue from untapped rural market, Grameen Bank makes profit from the interest of the loans provided to the Village Phone Operators, Village phone operators earn
money thorough selling mobile phone services and village community members are benefited through telephone services at an affordable cost (Islam, 2005). Another business model that is initiated by the Smart Communication Inc., Philippines, facilitates telecommunication services to bottom of pyramid market. Smart Inc. introduced innovative products and services for BOP market and developed smallest denominations of recharge. It also introduced an innovative approach for minimizing physical product distribution costs and created a demand response stocking system for reducing the risk across the firm. The company has used local retailers as a mean of distribution channel in rural areas (Smith, 2004). Certain inputs and outcomes have been identified in an entrepreneurial process. Five key elements which act as inputs for the process are; environmental opportunities (demographic changes, development of a new technology, or modification to current regulations), individual entrepreneur who develops a creative approach to solve a particular customer need, an organizational context which could range from a sole proprietor to an autonomous business unit, unique business concept to serve the target market and requirements of financial and non-financial resources. The outcome occurs in the form of “entrepreneurial intensity” that includes value creation, new products and processes, new technologies, profits, jobs and economic growth (Morris et.al., 1994). Nature of demand and investment & revenues are two key issues that affect the entrepreneurship in rural areas for provision of telecom access. Adoption of a particular approach in rural areas can be analyzed by 2X2 matrix, consisting of two dimensions. One is the size of demand and the second is the kind of investment that would be required to provide telephone access to a specific rural area. This matrix suggested that if demand is high and investments are low, emphasis should be on delivering reliable service through small private/local entrepreneurs. In cases, where the existing demand is poor, other services should be bundled with telecom services. The best way to do it is to allow co-operatives and NGOs to take the lead so that telecom access could be useful for the primary tasks of such organizations. The areas that require high investment with large potential demand, large operators should be allowed to franchise the operations at a village exchange level (Bhatnagar, 2000).
2.4 Innovations in Mobile Communication Services

Massachusetts Institute of Technology (2006) developed “innovation radar” which consists of 12 dimensions of business innovations anchored by the offerings a company creates, the customers it serves, the processes it employs and the point of presence it uses to take its offerings to the market. These dimensions are viz., developing new products and services (Offering), power of commonality (Platform), creating integrated and customized offering that solves end to end problems (Solution), identification of underserved customers or discover unmet customer needs (Customers), redesign customers interaction across all touch points (Customers Experience), how company gets paid or create innovative revenue stream (Value Capture), redesign core operating processes (Processes), change scope, activity, functions (Organization), think differently about sourcing and fulfillment (Supply Chain), creates new distribution channels, or innovative time of presence, including the places where offerings can be bought and used by customers (Presence), create network centric-intelligent (Networking), and leverage a brand into new domain (Brands). Innovations can be generated either in technical characteristics or in service characteristics as every product is a combination of these two characteristics. Technical characteristics describe the internal features of the technology, while service characteristics refer to the characteristics of the product as seen by the end users. Innovation stems from different types of changes, e.g. introduction of a new technical or service characteristic, or change in the relative importance of existing characteristics, or even change in the combination of technical and service characteristics (Saviotti and Metcalfe, 1984). In mobile communications, services can be seen as sets of technical (tangible and intangible) and service characteristics. Services include voice calls, short message services, and multimedia services. Technical characteristics include standards for voice and data transmission, software to write short text messages. Service characteristics refer to the main features of the service itself. Firm’s installed base of customers positively affects the availability of information that can be acquired from users’ needs and behaviors, which in turns determines the capability of segmenting the market by designing specific tariff plans or other innovations. In this spirit, it is reasonable to argue that firms with a large installed base are more likely to implement aggressive innovative strategies by exploiting the information collected from the end users (Corrocher and Zirulia, 2009).
2.5 Public-Private Partnerships for Improving Rural Mobile Services

Viom Networks, India’s leading independent telecom infrastructure Company launched Rural Service Centre (RSC). RSC is an innovative concept of ‘Power of Tower’ for leveraging its existing infrastructure through the public-private partnership to achieve the Government’s vision of providing telecom services to rural people in Gurgaon. This partnership facilitates Government to achieve their vision of bridging the digital divide through a range of telecom services, enhancing literacy in rural India, driving the agenda of financial inclusion, providing healthcare facilities & consultation using telecom infrastructure, plugging inefficiencies in the rural system by driving e-Governance and offering various other services aimed at bringing rural India into the mainstream, thus contributing to the Government’s vision of Bharat Nirman (Ministry of Communications & Information Technology, 2011). Public-private partnership acts as a true possibility to exploit the management qualification and the efficiency of the private sector without giving up quality standards of outputs. A well designed public-private partnership redistributes the risk to the party that is best suited to manage it and to do it with least cost. In general, a public-private partnership can be said to generate value improvement whenever it provides the following advantages - more efficient allocation of risk, reduced life cycle costs, faster implementation, improved service quality and source of additional revenue (Dalal, 2010).

It is also required to provide sustainable inclusive growth of rural people enabled by mobile technologies and services. The model of public-private partnership consists of three stakeholders’ viz., public, private and society at large. The public entity provides funding and monitoring support for the inclusive growth and economic sustainability of rural people by enabled mobile services. Private bodies include profit organization that provides requisite technology, expertise and offer customized mobile solutions for improving the livelihood of rural people. Telecom service providers, value added service providers; Mobile virtual network operators can be included in private bodies (Sridhar et.al, 2010). Number of measures has been taken in the past to encourage the private sector to venture into rural ICT market and to compensate the public sector incumbent for its efforts in this direction. One of the encouragements is that private investment in rural ICT by means of public private partnership programs as is being done under the Government’s Universal Service Obligation Agreements and Common Service Centre Program (Gulati, 2007). According to Oregon Telecommunication...
(2003) public-private partnership enhances the quality of services with optimal utilization of resources. It facilitates private-sector partners to practice cost efficiencies to hold down expenditures, while also taking advantage of additional revenue streams. Both problems and opportunities need to be put on the table while formulating public-private partnership in telecommunication. Developing a list of needs and issues is an excellent starting point for developing the public-private partnership.

3 RESEARCH METHODOLOGY

The present study investigates the three dimensions of 3I’s (Integrated-Innovative-Inclusive) framework for mobile users in rural Punjab. First part of the study is exploratory in nature. It focuses on strengthening public-private partnership by understanding the problems associated with rural mobile services. Infrastructural, manpower and operational problems (Cellular Operators Association of India, 2011 and Department of Telecommunication, 2010) will be probed by taking in-depth interviews of company representatives of main telecom operators such as Bharti (25%), Vodafone (19%), Idea (15%), BSNL (13%), and Reliance (11%) in selected districts of Punjab (Market share in rural areas is shown in brackets). Both primary and secondary data will be used for developing conceptual framework for public-private partnerships.

Second part of the study aims to find out various factors inducing innovation in mobile phone services by evaluating rural preferences and satisfaction. Based on the previous studies conducted by Alom et.al, 2011; John, 2011; Rahman et.al. 2011; Rajkumar and Paulrajan, 2011; Potluri and Hawariat, 2010; Santouridis & Trivellas, 2010; Shrivastava and Israel, 2010; Tripathi & Siddiqui, 2009, three constructs viz., service quality, after-sales service support and tariff of mobile service will be evaluated for preferences and satisfaction. Both primary and secondary data will be used for finding out various factors inducing innovation in mobile phone services.

Third part of the study is to propose criteria for evaluating entrepreneurial competency for rural people. It is based on the demographic characteristics such as age, income, number of dependent persons and duration of staying in village (Shaw, 2010).
3.1 Research Design

3.1.1 Sample selection

The rural people of Punjab will be considered as population for the study. The sample will be collected from three regions viz., Doaba, Malwa and Majha. In Doaba- Jalandhar, Kapurthala, and Hoshiarpur will be taken; Amritsar, Gurdaspur and Tarntaran will be taken under the Majha region and; Fatehgarh Sahib, Ludhiana, Patiala, Bathinda will be taken under the Malwa region. The selection of districts is based on Socio -Economic and Demographic Indicators (Ranking and Mapping of Districts-2006, International Institute for Population Sciences, Mumbai).

3.1.2 Sample size and sampling technique

A sample of around 600 households will be collected for the study. Five blocks will be selected randomly from the each district; hence total fifty blocks will be selected from all the ten districts. From each block, three villages will be selected randomly covering four households on convenience cum judgment basis. In this way approximately 200 households will be collected from each region.

3.2 Scale Construction and Design

A well structured, pre-tested and undisguised questionnaire will be used for primary data collection. Questionnaire will be divided into following three parts-

Part I includes the questions related to preferences and satisfaction towards mobile services. The variables namely; quality of network, value added services, customer service, pricing structure, variety of plans, technology deployed by network (GSM, CDMA) and billing system will be used for service quality; the variables namely; provision of information, service delivery, maintenance and repair, billing service, and complaint handling will be used for after-sales support, and the variables viz., call rate, call at peak hours, variety of tariff plan, denomination of recharge coupons, and communication quality will be used for tariff mobile service.

Part II includes the questions related to challenges (poor reception, inability to access, lack of information, inability to understand different tariff plans, absence of after-sales support,
expensive to operate, inability to acquire mobile connection, reliability of network coverage, lack of information sources) faced by rural people for adoption and consumption of mobile services.

Part III contains the questions related to demographic profiles such as age, occupation, income, number of dependent persons, and duration of stay in village.

3.3 Use of statistical tools:

Appropriate statistical tools will be used to analyze the data and interpret the results there of. Advanced Multivariate data analysis techniques like Discriminant analysis and one sample tests will be used with the help of SPSS.
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