**SUCCESS FACTORS IN TELECOM SERVICE DEVELOPMENT:
A GROUNDED THEORY**

Case Studies Research in the Latin American Telecommunication Sector

by

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of requirements for the degree of Master of Applied Science in Technology Innovation
Management.

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ABSTRACT

The successful development of new services is a key business driver for telecommunication service providers. The objective of this research is to establish factors and managerial practices that promote success in the telecom service development process. Drawing from twelve practitioner interviews and nine service development cases it develops a grounded theory to account for success measures and success factors to develop telecommunication services. The cases correspond to experiences from operators in Latin America. The research explores the characteristics of the service development and proposes five success measures and fourteen success factors to develop telecom services. The measures are related with sales performance, cost performance, competitive performance, time to market and development culture. The factors deal with development methodology, in-house resources, development office, content management, simplicity, competences in integration, massive market, road map plan, accurate information systems, tuning, free fee services, different ways of payments, resolving problems and customer operation involvement.

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1 INTRODUCTION

Nowadays telecommunications services are a key driver in the telecommunication industry (Ward, 1998). “A service organization has two choices in today’s combative business environment: Succeed at developing new service products, or fail as a company” (Cooper and Edgett, 1999). The amount of investment in the development of a new service by suppliers is very high, but the level of failures of new services is also high (Cooper, 1999). Empirical research in factors that determinate success or failure in services is very limited, even less so in telecommunication services (De Berntani, 1991). If managers can focus their roles and activities on determinants that provide positive impact in the introduction of new service, they will have a higher likelihood of success.

Very little had been written on service development and even less so in the telecom sector (Ward, 1998). Although researchers have shown interest recently in service development, the literature on this subject is scarce and usually based on conclusions from tangible product industries (Jimenez, Martinez, and Gonzales, 2006). The development of models, concepts, and theories to analyze and describe new service development is in an early stage (Edvardsson, Gustafsson, and Enquist, 2007).

The service sector accounts for more than 80 percent of the US gross domestic product (Spohrer, Maglio, and Gruhl, 2007). Similarly, services represent 80 percent of the total revenues in the telecommunication industry (ITU-International Telecommunication Union, 2006). The growth and crucial importance of services in today economy encourage both industry and academia to address the fundamental challenges to speed up service innovations. These interdisciplinary activities, called Services Sciences, Management, and Engineering (SSME), have been led by IBM with the participation of highly reputable universities across the world (Lusch, Vargo, and Wessels, 2008). Innovation in new services development demands its own frameworks. It is very hard to find literature with empirical results that address the question: What makes telecom services successful and what causes failure? These are the gaps that this research attempts to fill, with a focus on the Latin America telecom industry. This region has one

of the highest annual rates of growing in the telecom industry (Frost and Sullivan, 2007) with very little research in telecommunications and offers a multi country scenario to carry out the research. Past research has been focused in North American, European or Asian countries, which have different regional, cultural and legal characteristics. The frequent changes in regulation, technology, and customer demand together with vigorous competition make winning strategies in new telecommunication service development (NTSD) a necessity for success as a telecom provider (Ward, 1998).

This inductive study develops a grounded theory to determinate the factors that lead to success in new telecommunication services development in the Latin American telecom region. The research also explores the characteristics and the nature of the NTSD process itself. This research considered success factors as actions that lead to successful new service performance, and success measures as outcomes or results that are evaluated when determining success or failure.

Developing successful new services is critical for telecommunication service providers, particularly in emergent markets. Telecom service providers must not only constantly develop new services, but also develop very successful ones. Experience shows that the rate of failure in service development in general is high. More than 42% of attempts to develop services fail (Edgett, 1998). Frequently, common mistakes are repeated wasting time, consuming resources, and generating poor quality with resultant significant income losses, costly expenses and loss of market share for service providers (Cooper, 1999). The research will evaluate this reality in the Latin American telecommunications sector, providing managers in this region with factors or determinants that describe the issues related with developing new telecom services. The telecommunications sector in Latin America is a dynamic business with a highly attractiveness for investors, equipment providers and researchers.

1.1 Research Problem

Develop a theory to account for success measures and success factors during the development process of new services inside a telecom operator.

To address this research problem a grounded theory of success factors, success measures and environmental circumstances for new service development by telecom operators is developed. The key findings are summarized in section 1.4 and detailed in section 5.

1.2 Methods Overview

The research methodology used is a multiple case study (Yin, 1989) using grounded theory (Glaser and Strauss, 1967; Christensen et al., 2002) and qualitative cross-case analysis (Miles and Huberman, 1994).

The unit of analysis is a development project for a telecom service that some provider has introduced in the past five years. Nine service development experiences in six of the most representative operators in Latin America were evaluated as independent cases that helped to confirm emerging conceptual insights (Yin, 1989). The primary data were personal and detailed interviews with people involved in the process of developing a new telecom service in one of the nine cases. These individuals provided information about the development model used in each case and also about the experience of one new service in particular. Interviews were carried out according to accepted interviewing best practices (Foddy, 1993). The possible lines of inquiry for these interviews were identified from a questionnaire survey of twelve practitioners familiar with service development processes in Latin American telecom operators. This questionnaire was built using data sources including corporate web sites, quarterly and annual reports, and independent analyst reports. The elements comprising the measures and factors related with the development process of telecom services were continuously refined across the study.

The underlying methodology of this research was grounded theory building from real case data. As established by Glaser and Strauss (1967), this approach is appropriate for investigating rarely explored phenomena for which extant theory is not applicable.

1.3 Contribution

Recent research in service development starts from a product-based framework and fails to recognize that the distinctive nature of services may call for a more radical approach to theory development (Johne and Story, 1998). Most empirical research in service development is oriented to the finance services sector. Particular and specific research must be addressed to the development of telecommunication services, given the importance of the sector in world business. National boundaries have been prominent in service development research. This does not allow the application of findings to an international context with differences in cultures, managerial practices and business environment.

This research is relevant because a telecom service provider must understand and dominate the art of new service development to guarantee the firm's success or disappear as a company. "Creating new services, new business opportunities, and new products is not just part of business; it is the essence of business" (Ward, 1998).

This thesis makes the following contributions:

- It identifies managerial practices adopted by telecommunication operators to ensure success in the telecom service development life-cycle.
- It explores methods and models for service development used by Latin American service providers.
- It identifies environmental circumstances that influence the success of telecom service development process.

These insights will be very useful to people involved with the development of new telecom services, market analysts, and equipment providers, interested in the Latin American telecom market.

1.4 Summary of Key Findings

Five success measures were found to be relevant for a telecom operator during its service

creation process. These were: a) sales performance, b) competitive performance, c) cost performance, d) time to the market, and e) service development culture.

Fourteen success factors to develop new telecom services were found: a) service development methodology, b) in-house resources, c) service development office, d) content management, e) simplicity, f) competences in telecom platform integration, g) massive market objective, h) road map plan, i) accurate information systems, j) tuning, k) special free fee services, l) different ways of payments, m) resolving problems well, and n) customer operation involvement.

In addition three external environmental circumstances were found to mediate the relationship between success factors and success measures. These were: a) regulatory constraints, b) content availability and c) governmental national plans.

Based on the relationship among success factors, success measures and environmental circumstances a set of thirty-five testable propositions for telecom service development was identified and are described in chapter 6. The key findings of this study are drawn from these propositions:

- a) Adopting an official methodology improves resource efficiency, reducing costs and time to market.
- b) The methodology corresponds to a set of general and flexible guidelines that should be executed with discipline.
- c) A long-term roadmap plan to introduce new telecom services creates market confidence, company reputation and develops proficiencies in the provider to introduce new services.
- d) Skilled resources in content management contribute towards sales, cost reduction, time to market and enhance customer experience.
- e) Skilled technical resources in integration of telecom platforms contribute to optimize the solution in terms of cost/efficient and development time.

- f) Early involvement of customer operation across the development process has a positive impact in to time to market and sales performance.
- g) Post launch tuning and optimization of technical platforms executed directly by provider personnel facilitate competitive performance of a new service
- h) Innovation in new payment options is perceived by customers as new services with favourable results in competitive performance.
- i) The creation of new service with own operator's resources consolidate service development culture, and lets the operator to improve its competences and aptitudes to develop future new services.

1.5 Organization

The thesis is organized into seven sections. Section 1 is the introduction. Section 2 explores the academic literature. Section 3 describes the research model. Section 4 describes the case study methodology, the sample selection, the evaluation topics, the data collection and analysis. Section 5 shows the results. Section 6 presents the emergent theory. Section 7 provides conclusions, the limitations of the research and suggestion for future research.

2 LITERATURE REVIEW

The literature review includes research studies in service development and success factors in service development process. The main question that guided the literature review was: “What are the success factors and success measures for service development in a telecom service provider?” Although the literature in product development is extensive; the literature on service development is very limited and even less so in telecommunication services. The review of the literature in this field is organized on the following topics:

- Service development management
- Success factors and success measures
- Innovation in new service development
- The service development model
- Influence of the organization in new service development process
- Telecommunications as a unique service industry
- Latin America telecommunication industry, a general overview

2.1 Service Development Management

Cooper and Edgett (1999) claim that a service provider must not only develop new services constantly but must also develop successful services that customers are willing to pay for and to develop services in record time. According with Product Development and Management Association (PDMA), 24.1 % of revenues in service companies come from new services and 21.7% profits come from those new services also. Services represent 80% in US economy, 50% in Brazil and more than 35% in China (Paulson, 2006). ITU (International Telecommunication Union) statistics show that the telecom market reported services revenues for 1426 US\$ billion dollars during year 2005, representing the 78% of total revenues in the telecom industry world wide (ITU, 2006). The telecom equipment revenues represent between 20 to 25%.

Developing services is different than developing products. Johnes and Storey (2001) provide a review of recent research on new service development. The literature is most concerned with the development of new financial services. Only in recent years have academic researchers started the evaluations of issues and concerns with service development in a wide variety of industries. Three aspects are mentioned as differences between products and services: intangibility, service is process more than things; heterogeneity, services change quality; and simultaneity, service is produced and consumed simultaneously. This justifies studying service products development in a different way than product development. There are tangible products, however, that share some of the above mentioned services characteristics. This is the reason why some research on product development might be applicable to new service development. The phrases “new service development” and “new product development” are often used interchangeably (Johnes and Storey, 1997). There are differences and similarities between the nature of goods and services that allow the application of some results from new product development to services. In recent years a considerable body of specialist literature has focused on the development and marketing of services as distinct from tangible products. Because the interaction process with the customer is typically an integral part of the service, the development of a new service is usually far more complex, conceptually, than the development of a tangible product. Some writers, however, argue that it is unhelpful to differentiate between tangible and intangible product development.

Edvardsson, Haglund and Mattson (1995) emphasize that, in spite of the importance of service in the western economies, there has been little research carried out in this area. They carried out two exploratory studies based on the case approach, one of them in the Swedish telecommunication industry. They found that several quality factors were used in the development process: reliability, commitment to the service, and a distinct service concept. The principle obstacles in the service development process they found to be: a general lack of specifications and goals, no acknowledgement about who the sponsor was, poor dividing responsibilities, resources allocation, lack of systematic reporting of documentation and feedback. Critical was the general lack of market information. With

respect to how new services must be developed, one conclusion drawn was that complex processes like the development of a new service cannot be formally planned altogether. There must be some room to the improvisation, anarchy and some internal competition. In new service development, a contingency approach is needed and an adequate balance between planning and control can be very useful to get success on the introduction of a new service. Empirical research in these aspects was called for.

Most research in services is concentrated in a particular geography zone, mainly inside country boundaries (Johne and Storey, 1997). Few had covered a sample in a multi-country scenario. The results of such research cannot have a very wide span application. Competition across borders in many services has increased considerably following deregulation of the market. On the other hand, most research uses several kinds of approaches to gather information. Previous research conclusions, interviews and empirical research across a survey in one sample, are normally handled together in order to validate results. There is lot of important information accumulated in the experience of managers of service companies that for a lack of time, discipline or confidentiality is unknown. Crucially important in obtaining such information is the interview approach.

Given the increasing importance of the service sector there is a growing interest in service development (Edvardson and Haglund, 1995). Because the lesser needs of facilities investment in services development, imitation and threat from new competition is common. As a result, service providers must speed up their development process.

Some results on product development can be hypothesis to be applicable to new service development. Zirger and Mandique (1984) in their research about success and failure factors of product development highlight that managerial excellence is key to success. The likelihood of a new product success rises if its development process is well planned and implemented. Significant customer value, like low price, quality and reliability, is highly related to the success of a new product. A company must have strategic focus as a managerial practice to success. The organization has to choose projects that fit with the existing technology, marketing and organization competences. Management

commitment is also fundamental for the success of new products, in order to ensure resource for the development process.

Other research trend has identified important differences among to develop new products versus to develop new services (Nambisan, 2001). In a same high technology company it is possible to find synergies between products and services, but differences in the essence of their value creation and their delivery, demand different development models and decision frameworks. Five key differences between product and service development are identified: intellectual property rights; product complementarity, which is more important in products than services; returns from scale, meanwhile product industry is fix-cost based, service industry is variable cost; abstracting knowledge, meanwhile in product industry the knowledge is inside the product in service industry it is in the relation with customer; and finally integrating technology in which architecture level it is important for products but in service what is important is efficiency.

Customer participation and customer information are more common in product development than in service development (Martin and Horne, 1993). In service development, senior managers are more involved while in product development, are the technical research personnel who are more involved.

Decision making in high tech new service development projects is difficult, because the intangibility of the service, and the high levels of uncertainty and complexity. Improvements with respect to decision-making performance therefore substantially affect innovation process performance (Cyert and March, 1992; Shapira, 1997; Simon, 1997) and innovation success rates (Cooper and Edgett, 1996; Storey and Easingwood, 1993). Very little research has been devoted to the understanding of managerial decision making in the service innovation process in general (Martin and Horne, 1995), and in high tech service innovation in particular (Froehle et al., 2000).

It has been shown that organic business development can be pursued by means of four types of supporting development: market development, service development, service augmentation development and process development. A new service may achieve higher overall customer satisfaction through increasing the number of satisfied customers as well as increasing the satisfaction of existing customers. Satisfied customers provide referrals and may be willing to pay a price premium (Reicheld and Sasser, 1990).

Similarly, perceived service quality contributes to repeat purchases (Grönroos, 1990). In addition, building reputation for being innovative may make it easier for a company to introduce radical new services as consumers are more ready to accept such products from proven innovators (MacMillan and McCaffrey, 1985). New service introductions may also be used to change the perceptions of consumers within existing markets (Easingwood and Percival, 1990). Companies may introduce services specifically to increase their profile with intermediaries and consumers, especially in market segments or geographical areas where they have traditionally been weak, rather than opening up entirely new markets. New service development is about the future (Ward, 1998).

Project learning and time to market are topics also researched. Blazevic, Lievens and Klein (2003) developed a conceptual framework on critical antecedents of project learning and time to market during new mobile service development. Flexible decision architecture, project team memory and a good fit between information requirements and capabilities are aspects with crucial influence in project learning. In regarding with time to market, results of essential impact aspects such as project complexity, top management support, information from suppliers and technology synergy.

The technical infrastructure for the development and production, that is to say, the hardware, software and delivery systems of one new service, can provide a platform for other new services (Shostack, 1984). The human resource infrastructure in design, production and marketing can be improved because the process of developing a new services and overcoming various administrative, legal and operational barriers generates expertise that can be employed in the future (MacMillan and McCaffrey, 1984). The development of a new service can lead to a better understanding of a market's particular

requirements, making it easier to spot further opportunities (Easingwood and Percival, 1990). An ideal new service is one that attracts new business (Berry, 1982).

The service concept and its role in service development design have been also explored (Goldstein, Johnston, Duffy and Rao, 2002). Service concept defines the “what” to be done for the customer and the “how” this is to be achieved. This concept combines the market content with the operation content. Service concept development is a critical stage in service design process. This lets to understand in detail customer needs and to align this with the strategy, culture and competencies of the firm. Services concept involves service operation, service experience by the customer, service results and value of the service. This concept is the foundation upon which the elements of the service delivery systems are built.

According to De Berntani (1990), the following managerial practices are fundamental in the development of new services inside a service provider company:

- *Top Management Support*, providing the necessary levels of organization support and a full backing and the necessary resources from the beginning. Senior level management must be available to lend support when needed. Service development should be made the central focus of the organization. This determinant was also found as a factor for fast product development.
- *Market Orientation*, across a clear understanding of customer needs. Projects for which the market task is executed in a quality fashion are found to be more time-efficient and to stay on schedule. To provide significant value to the end customers represented by low price, quality and reliability is a key factor to get firm marketing objectives.
- *Synergy*, focusing in services with which providers are familiar, mainly in the development of additions to the core offering and in those new services that fit well

with company capabilities and strengthens. The organization must choose projects that fit with existing technology, marketing and organization competences.

- *Prioritize and focused strategy*, concentrating resources and focusing in the development of the services which are priority, and according with the firm strategy. In this way it is possible avoid overload and to contribute with the seep up of the development of new services.
- *Turnkey solutions* provided by a single supplier with an integrated package can be a solution to secure on time delivery of equipment and systems required for the introduction of a new service. The development of a new service can require new equipment, installation, and the adaptation of existing telecom infrastructure. To manage these activities separately can generate problems in the coordination and delays in the development program.
- *Flow charting and formal organization*, formalizing a corporative model to development new services according with corporative standard requirements. The model also must include a general flowcharting to clarify the development phases and avoid the lost of time in not relevant activities.
- *Planning*, across an adequate and disciplined process in which goals, deadlines, milestones and individual responsibilities must be clearly established. Given the complexity of the service development process, there must be room for flexibility. In the development of new services, contingency and planning control must be balanced for success.

2.2 Success Factors and Success Measurements in Service Development

Scott and Edgett (1998) provide valuable insights related to best practices in the service sector. They show that the success rate of launched new services is 57%. To successfully introduce a new service a company must carry out a number of business tasks such as: enhancing corporate reputation, improving customer loyalty, helping the

sale of existing services, developing knowledge for creating future services and attracting new customers. The failure of a new service costs a company in many ways: damage in the company brand, losses in customer trust and goodwill, and a negative impact of cross-selling other services.

De Berntani (1990) investigated success and failure factors in the business services sector. His work compiled results in a sample of 184 companies with active operation in new service development, involving 12 different business services sectors. He identified four composite measures used by firms to evaluate success or failure of a new service development projects: sales performance, competitive performance, cost performance and the impact of a new service over existing offer.

The relationship between success measures and success factors has been also studied. De Berntani's (1991) research established 17 determinant factors related to success measures. He grouped these determinants into four categories: proficiency in new service development, project synergy, market characteristics, and nature of the new service. Determinants with positive impact in sales performance were: clear answer to identified customers needs, orientation to markets with high potential of growing, organization proficiency with effective management, the use of expert personnel to interface with clients, the use of highly complex/customized services and focus on those services where company is familiar with, mainly development of addition to the core offering. As key success factors for sales performance, Story and Easingwood (1995) also identified effective communication with customers, distribution strength and a product champion. In competitive performance, De Berntani (1991) observed that key factors to success are: the nature of the service, innovativeness, people expertise and experience, and also market attractiveness. This research also deduced that effective management, a detail and formal process, new services based on modifications or additions to core offerings and those that leverage the competitiveness aspects of a company are factors highly related with an appropriated cost performance. With relation to boosting others services the relevancy is in factors like focusing in to reach a small number of customers and to develop new services that fit well with company capabilities

and strengths. A firm reputation approach in new service development is also responsible for high performance. Also important is the effective application and selection of new technologies that support innovation and competitive advantage in offering superior services. De Berntani (1991) concluded that market newness, equipment-based services and standardization of process are not relevant factors to get success in new service development. Market strategy, effective market research, quality, and organization factors have been identify as key success criterions during the service development process (Cooper and De Berntani, 1991). The quality problems appear as a repetitive issue into the development process (Crosby, 1989).

Additional researches to establish determinants that lead success in service development have been developed. Edgett (1994) identified 53 variables which grouped in eleven constructs that have positive impact during the development of new services: organizational, resource allocation, formalization, preliminary assessment, design testing, market research, market potential, business/financial analysis, project update, market synergy, and launch effectiveness. From these constructs synergistic fit (Johne and Storey, 1998), product/market fit, high quality launch and a well supported new product development process are identified as the constructs with major contribution to new services success. Success in service development is a multi-factoring result of managing several activities brilliantly (Johne and Storey, 1998). Jimenez, Martinez and Gonzales (2006) reviewed and summarized the existing literature in service development, identifying five category factors that can determinate success in service development. These categories are: organization culture that includes principles, guides, internal function and the behaviour of the company related with service development; marketing factors refer to the organization marketing skills; the service factors that are related with differentiation and superiority of the new service and its fit to the organization; the market factor that includes the market potential and the market fit of the new service and finally the organization factors that are related with the development and evaluation process to create new services.

The differences to get success among innovative versus incremental new services have been also studied. De Berntani (2001) found that for low innovativeness new services their performance can be enhance with a strong corporate fit, implementing a formal development process and controlling cost with no complex solutions. For high innovative services the fundamental feature impacting performance is the corporate culture of the company, with an active involvement of senior managers as mentors and visionaries for new service development. In addition appears good marketing tactics to communicate the market the benefits and nature of a really new services. Both, incremental and highly innovative new services are necessities in the long term vision roadmap of the company. Success in both development scenarios is essential for high performance in service firms. Factors that have a strong performance effect in both types of services are: to develop based on customer needs, problems and operating systems; expertise and motivation in the front line resources; and to implement a formal and well planed product testing and launch stage within the service development process.

Causes of failure in the development of new services have been also studied. Edvardson and Haglund (1995) identified the following problems as factors that reduce the success likelihood during the creation of a new service:

- Interdependence of news services with existing and future technology.
- Lack of a project champion.
- Lack of information about specifications and goals of the project.
- Very limited market research.
- Lack of communications between the units of the organization.
- Intra organizational conflicts and struggles for power.
- Lack of systematic reporting, feedback and rudimentary documentation.

Quality factors like reliability of service, commitment to the services from all the involved parties and distinct service concepts, were also identified as crucial to success for both customers and employees (Edvardson and Haglund, 1995). Service quality is an important factor of success and it is related to other variables associated with success (Landrum and Prybutok, 2004). High-quality service design is a multidisciplinary

process which involves interactions among customers, operations, employees, information systems, market, products, finance, corporate and functional strategy and products (Hill, Collier, Froehle, Goodale, Metters, and Verma, 2002). Johnston (2004) suggested that service excellence is about to deliver the promise, to provide a personal touch, to go the extra mile and to solve problems well.

Time to the market remains as an important measure of success for telecom service development process (Blazevic, Lievens and Klein, 2003). Fast pace to market is highly correlated with factors like management support, information power from suppliers and technologic synergies. Flexible decision architecture, project team memory, information awareness, and a good fit with the company's capabilities are managerial practices that have crucial influence on success in service development. The mobile telecommunication industry for example, operates in a highly competitive, dynamic and uncertain environment (Lal et al, 2001).

High velocity in the introduction of new service is a key aspect to success, creating a sustainable competitive advantage. Innovation speed increases resources efficient (Eisenhardt and Tabrizi, 1995), reducing the risk of launching an obsolete service to the market. The velocity to introduce a new service to the market depends on project learning, market and technology information. Technology information is related with the acquisition, the dissemination and the interpretation of information within the project team. Telecom service providers are faced with rapid technological developments, fast changes in customer requirements, and hyper-competition, leading to exceedingly short service life cycles (Bogner and Barr, 2000; D'Aveni, 1994, 1995). Survival chances and profitability depend increasingly on the capability to innovate and develop quickly and successfully (Lehmann, 1997). Multifunctional teamwork, a well done front-end planning, good service definition and parallel tasking are practices for fast new service development process (Himmelfarb, 1996). Faster service development can be reached also by establishing clear revenue goals for new services, rewarding development team based on performance and setting a separate unit for developing (Drew, 1995).

Internal and external factors appear as determinant to success in the service development process (De Berntani and Ragot, 1996). Internal success factors are associated with strengths, weaknesses and competences of the operator (Menor, Tatikonda, and Sampson, 2002), including the organization model of the firm to develop new telecom services (Froehle et al, 2000; Storey and Easingwood, 1995; Tax and Stuart, 1997). External success factors are features of the new service that answer to opportunities and threats in the environment. While the customer perceives external success factors as benefits of a new telecom service, the internal factors affect consumer benefits only indirectly (Storey and Easingwood, 1995). So far, a majority of studies has focused on the identification of external factors (Edvardsson et al., 1995), such as the fit between customer requirements and benefits of the telecom service offer or the fit between the new service and the existing product portfolio. Researching internal success factors, Storey and Easingwood (1993) found that amount and quality of appropriated market research, service development speed, technological advantage and synergy between the new service and the organization all contribute to the success of service innovations.

Van Riel and Lievens (2004) investigated decision making performance during service development. The success in a new service development projects depends on the level of information processed by individual managers and their decision making performance. The information is related with the knowledge about the interfaces between services, customer, technology, regulation and the organization.

Avlonitis, Papastathopoulou and Gounaris (2001) suggest that the performance result of a new service is the outcome of the development process and the innovativeness of the services. The most and the least innovative new services are less successful in terms of financial performance. The most innovative services make the strongest contribution to non financial performance (firm reputation, top of mine, company image, building loyalty and attracting new customers).

Comparisons have been made between key success factors in product industry and services industrial. While in product industry the key success factors are the product

advantages, in consumer services the key factors to success are the interaction between customers and the organization mainly the contact staff (Story and Easingwood, 1995). Very little however has been written in the area of telecommunication service development, even less in empirical research to determinate factors of success and failure.

2.3 Innovation in New Service Development

Innovation in services is crucial for the long term success of mobile companies operating in a high competitive and uncertain environment (Blazevic, Lievens and Klein, 2003). Hamdouch and Samuelides (2001) analyze the importance of innovations in the service industry, in particular in telecommunication services in France. The innovations deal with commercial matters and customer relationship. The commercial matters are mainly related with tariffs, marketing formulas, promotion, discounts, free traffic, and service content. A telecommunication service provider normally reconfigures its organization, when new tools are used and new alliances are created. Innovation in new service development demands an active participation of customers in service co-creation (Edvardsson, B., Gustafsson, A. and Enquist, 2007).

The key success determinant in telecommunication has been, is and will continue to be innovation (Picot, 2006). But is not only innovation in networks, it is also in services that will go to be bundled with the telecom infrastructure that are going to be important. In this context intense competition between service providers is best to promote innovation. In complement, a collaborative model where telecomm service operators and equipment or content providers, joint efforts to develop new services is other strategy for innovation.

Due to frequently imitation in services, incremental or architectural innovation is favoured. For this reason in occasions, service providers are urged to develop services with radical innovations. In several other services industries, for example e-commerce and consulting, service innovation represents the main objective of the company's strategy and is the most important aspect of competition.

Product augmentation development is important to telecom suppliers because the same basic product attributes can be offered in different ways and at different prices to separate customer segments (Johne and Storey, 1998). An appropriate premium price can normally be charged when support is provided, which can lead to higher profit margins.

The conception and development processes generating service innovation are less formalized than tangible product development. Companies that develop new services are based on organization and commercial skills, rather than scientific knowledge (Callon et al, 1997; Francois 1998). Differentiation appears as one of the main reason for service providers to introduce new services. Many specific characteristics of services innovation can be applied to manufacturing (Drejer, 2004).

Researchers have identified several types of distinct service innovation (Avlonitis, Papastathopoulou and Gounaris 2001). Depending of the degree of innovativeness six types of new services are established: new to the market, new to the company, new delivery process, service modifications, service line extensions, and services repositioning. Each type of service is associated with different development pattern. The development process is studied through three set of components: new service development activities, process formality and cross functional involvement.

Pioneering advantages in service development have also been established (Song, Di Benedetto and Song, 2000). Innovation and pioneering result in enhance firm performance generating economic, pre-emptive, technological and behavioural advantages. Economies of scale or learning curve economies in service industry with high equipment intensity, can keep competitors out. The pioneer can pre-empt competitors by identifying high potential market segment and offering services with attributes that best meet niche's demands. Pioneering provides to the companies the reputation to be a technological leader in the service industry. In complement when a new pioneering service is launched, the image of the company as a capable provider and successful pioneer plays a very important role in increasing the customer's credibility in the new service and achieving behavioural advantage. The pioneering advantages are

greater perceived among manufacture managers than among services provider's managers.

Services development had become an area of crescent interest encouraging the academia and industry to establish the fundamental challenges to accelerate service innovations. These interdisciplinary activities are called Services Sciences, Management, and Engineering (SSME). IBM is leading this visionary project with the participation of high reputation universities across the world in more than twenty countries encompassing US, China, Germany, Japan, India, Finland, England, Thailand, Australia, Korea, Taiwan, New Zealand, and Italy (Lusch, Vargo, and Wessels, 2008). Participating schools in SSME activities include US's Massachusetts Institute of Technology and University of California, Berkeley; Switzerland's, École Polytechnique Fédérale de Lausanne; Italy's Bocconi School of Management; and the UK's University of Manchester. These universities have starting to offer graduate programs in services. Between the companies associated with this initiative of service science are: Accenture, Electronic Data Systems (EDS), Hewlett-Packard, and IBM. Services science is a multidisciplinary field from a technology-centric view to a holistic view that merges technology with an understanding of business processes and organization (Paulson, 2006). It is oriented to bring knowledge from diverse areas to improve the service industry in operations, performance, and innovation. These areas include computer technology and other fields, such as engineering science, operations research, organization theory, industrial engineering, social sciences, business strategy, management sciences, social and cognitive sciences, legal sciences, and innovation management (Sawatani, Nakamura, Sakakibara, Hoshi and Masuda, 2007). These researchers establish the tenets of service science, those are: service as a process, focus on dynamic resources, such as knowledge and skills, and value creation process among providers and customers. Services science research could be oriented to establish models, methodologies, processes, and software tools that develop and deliver services more efficiently. Services Sciences, Management, and Engineering (SSME) aim to understand how an organization can invest effectively to develop service innovations and to realize more predictable outcomes (Spohrer, Maglio, Bailey, and Gruhl, 2007).

2.4 The Service Development Model

According with the literature review, there is not a unique model, or a single set of strategies, to be successful in the development of new services. There is not a unified conception of the development activity itself. Some authors divide the development process in two main parts: definition of the core services attributes and definition of the service delivery systems. Others argue that service development can be broken in three activities: service concept development, service system development, and service process development. Ward (1998) identified six phases in the cycle for telecommunications service development: opportunity analysis, definition and feasibility, design and testing, development, implementation and trials and finally commercial launch and review.

Some researchers propose the use of generic development models for products and services, based in models previously tested for good industries (Hull, 2004). A composite model is suggested comprised by four types of practice sets dealing with organization of cross-functional teams, disciplined development processes and the application of tools/technologies. The synergy between these components of the model has impact on product development effectiveness, especially on performance measured as time development and cost reduction.

Research in process development estimates that although the importance, convenience and high need of a formal process for services development, only 44% of the companies use a formal work process for process development (Lager, 2000).

2.5 The Influence of Organization Culture on New Service Design

The influence of organizational culture during the introduction of a new service has been also studied. Organizational culture influences both the range of new services selected and the pace at which new services are introduced. Services can be rejected or failure result due to organizational culture and internal resistance to change (Barclay, 2001). A service firm's culture is defined with reference to politics, procedures, process, personal, training, control procedures and customer care. Culture is the glue that binds the four

basic service elements: concept, delivery system, market and image (Cooper, 1999).

Organizational culture should match a new service offering. Telecommunication service providers need adaptable cultures that focus on rapid changes in the external environment in harmony with internal flexibility and innovativeness to meet these changes.

The most important factors to new product success are under direct control of companies: choose the correct development and then executed it well (Barclay, 2002). Initial screening of correct development is maybe the most relevant factor for overall performance. To be a winner as a company in new product development demands to invest in people, their skills and competences (Barclay, 2002). One of the key aspects to get efficiency and effectiveness during new product development process concerns with well training and motivated staff working in teams under an appropriate culture and development guidelines.

The cultural context, customer satisfaction and the need of integration to the existing services clientele imply enormous challenges to service providers in the development of new services (Stuart, 1998). Modification, redesign and enhanced of existing services are also part of new service strategy (Barclay, 2002). In most cases, managers need to incorporate new services within an existing service system. New services affect existing service offerings and, reciprocally, exiting services affect new services. This is particular evident with existing resources such as customer care, billing, training, physical and operational facilities. In the introduction of new services, it is important to balance innovation with current service culture in order to manage risk. The risk of failure in the introduction of a new service is directly related to low fit and integration with the exiting service culture. A new service generates reaction in existing organizational culture. Modifications and redesigns of a new service prior launch with the purpose to fit the exiting service culture can produce failure of the new service and customer dissatisfaction.

Recently a resource oriented perspective has been studied in complement to the service development process. Froehle and Roth (2007) proposed a framework that integrates

process and resources of new service development. Resource perspective is oriented to motivate, cultivate and develop intellectual, organizational and physical resources that supports and enhances the competences of a firm in the process of creating new services. Intellectual resources are related with the education, culture, experience and knowledge of human capital. Organizational resources deal with management systems, behaviours and personal relationship developed by the firm. Physical resources include assets, facilities, tangible technologies, capital equipment, geographic location and raw material. Resource building practices are posited to support firms compete based on competences to innovate and develop new services.

Service design is intrinsically multidisciplinary. Operation managers can get high quality service design across the complex interactions among customers, systems, employees and products, involving all the disciplines within an organization including: marketing, sales, organization behaviour, corporate and functional strategy, information systems, operations and economics (Hill, Collier, Froehle, Goodale, Metters and Verma, 2002).

2.6 Telecommunications as a Unique Service Industry

Telecommunication service providers must sell managed communication services, where service must be delivery on continual basis (Ward, 1998). Telecom services must be always available, 24/7. Developing continuous services is very different from developing services that are offered episodically. For example, in the financial industry a transaction or a trade is not continuous but rather a discreet event. Telecommunication industry needs service development models designed specifically for its service delivery environment (Ward, 1998).

The difficulties that service providers face in delivering new services are related to the development process itself, the complexity of the industry and the challenges of telecommunication service delivery. Telecommunications is part of the information industry, but is unique in that is service-based. The literature highlights several aspects that are exclusive to the telecommunication industry which have impact in the service development process itself:

The service development challenge

Telecom providers must deliver communication services that must be continual managed and maintained (Ward, 1998). Telecommunications services involve a highly complex service delivery process: to purchase an intangible service, to understand its capabilities and functionality, to get the installation experience, to be simple and easy to use, to be continuously available, to maintain continuous customer relationship management, to obtain a clear and accurate monthly bill, and to enjoy an acceptable quality. Each customer has a unique service delivery experience. How well the service is offered is part of the offering, (Ward, 1998). Telecommunication is a business based on people, complex processes, and complex service delivery systems; all performed in a continual basis, time and time again, consistently well, each and every time a service is sold and is used.

The industry challenge

Telecommunication service must always be ready to use and available to every body around the world. The service must be universal. The telecommunications industry is global. All the telecom networks around the world must work together as a unique interconnected and integrated network. That obligates operators to use well defined, international telecommunications standards. Those standards not only pass between markets but also across regulatory boundaries. The lack of clear ownership for standards is a significant issue for the telecommunication industry. A significant challenge is that there is no accepted standard in the telecom industry for developing new telecom services. The telecom industry needs some flexible development models that can support a wide range of solutions and business and international applications.

The organization impact

The development and introduction of a new service in a telecom organization is an experience that involves and affects all areas of the organizations. In fact, technical and maintenance, finance, legal and regulatory, information technology, billing, customer care, sales, logistic, supply management, administrative, marketing, accounting and taxes

people, will have some kind of impact during the process of introducing a new telecom service. This situation is not the same in other industries where the service development process affects only some specific or isolated areas of the company.

New service needs education process

When telecommunication service providers offer less expensive and more efficient communications alternatives, it is relative easy to explain and sell to the customers. However it is necessary to explain the benefits of new features before the selling process. Customers are often unwilling to pay for a service they never imagined needing (Strouse, 2002). Sometime customers' interest far exceeds the potential market estimated for a new service that was obtained previously on surveys and preliminary projections. Promotions that include free usage for a short period of time are very effective to promote new services. New networks based on IP will be far more feature-rich than those provided by today's infrastructure (Strouse, 2002). Service providers will face new challenges to educate customers about the benefits of new services.

Rapid pace of technology

This is one of the primary market drivers in the telecommunication industry. Most telecommunications service providers do not presently support in-house research and development (Strouse, 2002) due to legal, market or economical restrictions. Service providers do not spend very much on research and development R&D (Picot, 2006). High tech manufacturing enterprises usually spend between 10 to 15 % of sales in R&D. The average of this investment in providers of telecommunications services world wide is not more than 2 % (Picot, 2006). In Latin America, with the exception of Brazilian operators, no operator has in-house research and development.

Market information is not accurate available for new services

New telecom services frequently change the customers live and the way they carried out business (mobile phone or high speed internet access). The patterns in the use of a new service and customer's behaviour are not easily predictable. Success services can generate unexpected traffic or demand. There is too much of speculation in the

expectations about a new service. On the other hand users are less tolerant to fails or congestion in the telecom network. A telecommunication service provider must have the adequate infrastructure (technology dimensioning and business process) in place to provide high quality. This requirement is especially demanding for new services. These could fail or harm existing services or damages existing brand, if the operator does not have a very well supporting infrastructure. The quality of the available market information to the service provider can be the difference between to get success or failure in the launching of new services.

Time to market, a key element

Timing the deployment of new telecom services within strict limits and objectives is essential, especially in a highly competitive arena like Latin America, whereas it is irrelevant in monopoly conditions. Time to the market is a success factor in a complete telecom business (Strouse, 2002). Companies moving from regulated to competitive markets must learn to launch new services quickly. Because the increasingly global nature of the telecommunications industry, ideas and initiatives spread rapidly and the imitation or adaptation of successful telecom services have become a universally adopted innovation strategy. The resulting hypercompetitive marketplace makes a fast and efficient new service development process an essential competitive competence. In these circumstances, telecom operators must be highly innovative and dynamic. This directly affects the task conditions of decision makers in telecom new service development projects.

High churn rates

Churn is defined as the turnover decision of one customer from an operator to another. In some countries of Latin America the churn rate in the mobile industry can be over 30% per year (Pyramid Research, 2005). This generates enormous customer acquisition costs. These churn rates will remain high until the market reaches stabilization or until telecommunications service providers improve their ability to develop new service that can differentiate their offerings against competitors.

Customer-supplier interaction

While tangible or physical products are offered with or without customer service infrastructure, this support is always required in marketing and selling telecom service products. All telecom service products require a very close interaction between the supplier and customers. Interaction is the differentiating feature of service offerings. In the telecommunication sector the interactive infrastructure is the very essence of the service offer. This means that telecom service providers must develop not only the right form of the service, but also the appropriate process and procedures of interaction with customers. Since the interaction process is normally an integral part of a telecom service, the development of a new telecom service is usually far more complex than the development of a new tangible product.

Johne and Storey, (1997) provide the following insights related with the condition of telecom services as intangible products.

Intangibility

Service products are essentially intangible even though efforts may be made to make them more tangible, for example, by supporting telecom service products with attractive telephone sets. Telecom services are basically processes rather than “things”.

Intangibility has important operational requirements in the telecom sector. For example, intangible products are especially difficult to test and evaluate. Services can be more easily modified or adapted than physical products. For these reasons changes or modifications to a telecom service offering may be made relatively easily by personal service workers without management instructions or adequate organizational training. These changes can generate distortions at the expense of customer service quality. Especially in the telecom industry, a critical result from intangibility is that new service development is normally easily copied by competitors. Telecom service developments are not patentable, moreover, so copying is rarely preventable.

Heterogeneity

Telecom service products often vary in quality because telecommunications services are commonly produced and consumed simultaneously. Since it is generated and consumed at the same time, the telecom service experience can vary each time. In addition, customers play active roles in the delivery of service. The level of variation experienced depends on the degree of standardization of the service. Customers of telecom industry take risk buying a service which they can not fully assess before purchasing. This reality demands constant training and practice by marketing, selling and customer care staff.

Simultaneity

As was mentioned above, telecom service products are produced and consumed simultaneously. This means that most services are inherently perishable and, for this reason, cannot be held in stock. Capacity planning is essential. Telecom demand can vary greatly and abruptly across a day, but must be met immediately or lost. Since telecom services are both intangible and simultaneous, the process of evaluation, purchase and consumption is critically important. This is the justification for studying service product development in its own right (Booz *et al.*, 1982; Lovelock, 1984).

2.7 Latin America Telecommunication Industry, General Overview

The Latin America Telecom sector is one of the most dynamic sectors in the world wide industry. According with a research from Frost and Sullivan (2007), the region shows a CAGR (Compound Annual Growth Rate) of 18% in revenues between years 2003 and 2008, one of the biggest growths around the world. The market for telecommunication services in the region has changed radically over the past decade. Consumption patterns, customer knowledge and customer requirements change continuously, and services rapidly become obsolete, resulting in increasingly short product life cycles.

Telecommunications also represent one of the most important economic segments in Latin America. The telecom industry can represent more than 5% of a nation's gross national product (Pyramid Research, 2005). The ITU indicators for telephone subscribers (fix plus mobile lines) in the region for 2006 are showed in Figure 1. Latin America has

about 18% fix line penetration with near to 103 millions of fix telephone lines and more that 300 millions of cellular mobile lines, with a penetration of 55% in the region. A world wide comparison between Latin American and the rest of the world is also shown in Figure 1

Figure 1: Latin America-Telecom Basic Indicators

Source ITU Statistics 2006

Figure 2 presents a general overview about the status of the information technology in the Latin America. This exhibit shows the percentage of penetration in terms of internet users and broadband users. The penetration in Internet connections per 100 inhabitants is 17 per cent, but the broadband penetration is lower than 10 per cent.

Figure 2: Latin America Information Technology Indicators

Source ITU Statistics 2006

The average income per capita GDP in the region was \$US 3400 in year 2005 as it is shown in Figure 1. This special condition gives the region an important opportunity for growing and investments. The early 2000s were a turbulent time for most Latin American economies, with Argentina, Venezuela and Brazil taking particularly hard blows which negatively affected subscriber and revenue growth in those markets. Nevertheless, the region began recovering in late 2003 and in 2004, and looks to experience average per capita growth rates of 2-4%, which will ultimately have a positive impact on continued subscriber and average rates per user growth in the region. Figure 3 shows the behaviour of different Latin America economies, with steady and good trends. This was demonstrated in 2004 with the acquisition by Telefonica-Spain of near of 11 millions mobile lines for US\$5.5 billion from BellSouth.

Figure 3: Tendency of Latin American Economies

Source Pyramid Research 2005

There are four dominant, international Latin American operators: Telefonica from Spain, America Movil, from Mexico, TIM from Italy and MIC Millicom Cellular International from Luxemburg. The presence of these big competitors has important impacts in the new service development process. Services are developed to satisfy expectations of customers from different cultures. Because providers have service development teams in different countries, a new service developed in one country can easily be replicated by other subsidiaries of the firm in a different country. With this strategy important cost reduction can be obtained when services are developed for a massive and multi country market. Telefonica-Spain and America Mobile together have more that 85% (approximately 250 millions lines in year 2007) of the region's mobile sector.

The market in the region is dominated by Mexico and Brazil. Interestingly, although Mexico's population is 58% than of Brazil, it generates virtually as much revenue (82%) as Brazil. Figure 4 (Pyramid Research, 2005) relates the GDP per capita of each country, mobile penetration and size of the mobile market.

Figure 4: Nominal GDP per Capita (US\$)

Source Pyramid Research 2005

Telecom in the region, until recently, had been focused in basic service, mainly voice, with some discrete presence in added value and Internet services. With the introduction of new technologies and the saturation of some voice markets; the industry is oriented to broadband services. Fix line penetration at the regional level appears to have reached a plateau, nearing 18% by the end of year 2006. In the next five years, analysts expect that this penetration will increase by only 1% mostly due to growth in Mexico. Increases in connectivity will be come predominantly from mobile platforms. Mobile penetration, which currently stands at 65%, (Frost and Sullivan, 2007) is more than three times that of fixed line penetration in the same year. This is the reason why the focus in service development will be in the mobile market and some initiatives in fix and mobile convergence. In the other hand important challenges have the operators to develop new services to customers with medium and low level income; such is showed in Figure 1. In the mobile market, prepaid users will tend to reach around 90% of total subscriber base (Pyramid Research, 2005). The ARPU per mobile subscriber per month in the region is low, in average \$US15 (Frost and Sullivan, 2007). According with the levels of GDP per capita the Latin America Region can be qualify as an emergent economy, in comparison with others countries in North America and Europe.

With respect to telecommunication technology management, the Latin American market has its own characteristics. Unlike the North America or Europe markets, Latin America does not have regional equipment suppliers. Equipments must be imported and adapted to local requirements. There are less frequent interactions between service providers and equipment vendors to develop new solutions together. This particular situation creates a dependence on suppliers that affects the development of new telecom services.

GSM technology is the dominant mobile standard in the region (Pyramid Research, 2005). Technologies for mobile data such as GPRS (general packet radio access) and EDGE (enhanced data rates for GSM evolution) have been deployed in several Latin countries. The main data traffic and revenues come from SMS short messages. MMS (multimedia messages) are becoming popular as new phones have built-in cameras. Third generation technology like 3G and UMTS (universal mobile telecommunications system) is been introduced in the region from year 2007. This technology trend provides the opportunity to introduce new telecom services. In the fix lines markets, operators are focused on introducing broadband technology to maximize the return from their expensive investments in fixed wire-line networks. Cable TV is also a line of telecom business with high potential of growing in the region.

National telecom markets in the region are characterized by intense rivalry between few firms. This rivalry directly affects the working conditions of managers, as it puts great pressure on the speed with which they bring new services to market (Kessler and Chakrabarti, 1996)

3 RESEARCH MODEL AND THEORY

3.1 Research Model

The objective of this research was to identify success factors and success measures for new service development process for telecommunication operators.

Figure 5: Research Framework

Figure 5 shows a model used by the researcher for this study. This model considers that proactive actions taken by a telecom operator during the service development life-cycle influence service creation success. Actions were assumed to be special procedures and tactical activities taken by the operator during service development. Service managers and service participants are assumed to be responsible for implementing these initiatives. The mentioned actions are assumed to be oriented towards achieving success in telecom service development process. In addition, it is assumed that internal and external environment conditions (circumstances) influence the success of new service development. These circumstances are assumed to be present at the beginning of the service creation and maintained during the development process. These circumstances can affect in a positive or negative way the performance of the service development

process. Circumstances that facilitate the actions and success of service development were of special interest for the objective of this study.

This model led the researcher to investigate responses to the following questions: a) what are the relevant actions for service development, b) how does an operator measure service creation success, c) what are the relevant environmental conditions for telecom service development, d) how are these constructs (actions, environmental conditions, success) related?

For the objective of this research, actions taken by the operator that contribute to a successful new telecom service were called success factors. Similarly, measures perceived by different stakeholders associated with the success of a new service development experience were called success measures.

Since success factors and success measures for telecom service development have not been well established in the current literature, particularly in Latin American region, this research used multiple case study (Yin, 1989) applying grounded theory (Glaser and Strauss, 1967; Chistensen et al., 2002) and qualitative cross-case analysis (Miles and Huberman, 1994). The grounded theory building approach is appropriate for studying rarely explored phenomena for which extant theory was not applicable. The aim of this inductive-model research was to build theory directly from observed data.

Success factors and success measures in telecom service development could be made operational by categorizing them. According with Christensen's grounded theory, the following were the steps used in this inductive-mode research:

- Data as obtained from experiences in the process of service development inside telecom operators.
- A typology of telecom service development process was created.
- Based on data analysis, success factors and success measures were found across typology service development process.
- Theory based on the above detailed analysis was proposed.

4 RESEARCH DESIGN

The literature survey in section 2 indicated the importance of a service development process for telecom operators, especially in emergent markets. There is no a generally accepted theory for success measures and success factors found among practitioners or researchers regarding best practices in telecom service development process. For this reason, the grounded theory building approach was used to study the development process of a new service in a telecom operator and to build theory for success measures and success factors, in line to those suggested by Eisenhardt (1989) to build management theory from case-based research.

4.1 Methods

The underlying concepts of this qualitative research will be grounded theory building from field-based case information, in order to generate a theoretical framework for telecommunication service development. This method uses a multiple case study (Yin, 2003), with the explanatory or causal application and qualitative cross-case analysis (Miles and Huberman, 1994). Case studies maintain such real life characteristics like organizational and managerial processes. Case study research is particularly appropriated when there is little or no empirical research available on the subject (Bonoma, 1985), i.e. when the study is of an exploratory nature. According with Glaser and Strauss (1967), grounded theory is appropriated for researching rarely evaluated phenomena. The three basic elements of the grounded theory are: concepts, categories and propositions (Corbin and Strauss, 1990). The concepts are the conceptualization of data; the categories are the cornerstone of developing theory, which are generated making comparisons and differences between concepts. The grouping of concepts forms categories. The third elements of grounded theory are propositions produced by generalizing relationships between a category and its concepts. Because the term propositions (Whetten, 1989) involves conceptual relationships, grounded theory does not use hypotheses that requires measured relationships. The generation of concepts, categories and propositions is an iterative process. Grounded theory is not generated a priori and then subsequently tested.

Rather it is an inductive process derived from the study of a relevant area of study (Strauss and Corbin, 1990). Theory is discovered, developed and verified across a systematic data collection. Grounded theory is related to the categorization stage of theory building, where researchers classify an area of interest into categories of similar things that highlight the most relevant differences (Christensen, 2002). This research uses the five phases of grounded theory: research design, data collection, data ordering, data analysis and comparison with the extant literature. Table 1 presents a general overview of these phases and steps applied in this study (Strauss and Corbin, 1990; Glaser and Strauss, 1967).

Table 1: Overview of Grounded Theory Method

Phases and Steps	Activities
1. Research design <ul style="list-style-type: none"> • Review of technical literature • Selecting cases 	Definition of research question Theoretical, not random sampling
2. Data Collection <ul style="list-style-type: none"> • Create data collection protocol • Entering the field 	Develop case study database, employing multiple data collection methods and triangulation of evidences (synergy). Overlap data collection and analysis
3. Data Ordering	Chronologically arraying of events (Yin, 1989).
4. Data analysis <ul style="list-style-type: none"> • Phase Data analysis related to the first case • Theoretical Sampling • Reaching Closure 	Use open, axial and selective coding to develop concepts, categories and propositions. Data are broken down, conceptualized and put back together (Strauss and Corbin, 1990). To develop connections between a category and its sub-categories. Literal and theoretical replication across cases (Go to step 1, Selecting cases until theoretical saturation). Theoretical saturation when marginal improvement becomes small
5. Comparison of emergent theory with existing literature	Comparison with conflicting and similar frameworks.

The principal unit of data of this research was a successful service development project related with the case evaluated in each telecom operator. This research is based on nine descriptive case studies from different Latin American telecom operators. The telecom service development projects chosen corresponded to services that were new to the organization, but not necessarily to the industry. The primary data were derived from interviews with people involved in developing a new telecom services in one of the nine cases. These individuals provided information about the development model used in each case and also about the experience of developing, launching and operating one new service in particular. Interviews were executed according to accepted interviewing best practices (Foddy, 1993). Each interview was taped and transcribed.

The possible lines of inquiry were identified from the answers to a survey questionnaire answered by twelve practitioners familiar with service development processes in telecom operators in Latin America. These surveys answers were collected using survey instrument which were built using data source including corporate web site, quarterly and annual reports, and independent analyst reports. The elements comprising the measures and factors related with the development process of a telecom services were continuously refined across the study.

Figure 6 is a diagram of the research method used in this work. The method followed the research stages and phases suggested by Eisenhardt (1989). The development of these stages was highly parallel and interactive.

Figure 6: Research Method

4.2 Preliminary Work

Once the research question was established, a literature review was carried out. The preliminary references were mainly oriented to cover the following topics: a) general research about service development, b) success factors and success measures, c) innovation in new service development, d) the service development model, e) influence of the organization in new service development, f) telecommunication, a unique service industry, and g) Latin America telecommunication industry, a general overview. The key findings from literature review were described in section 2. Based on these findings, a research model was introduced in section 3. A preliminary archival data collection was created with the objective to establish an initial data collection framework. Appendix A presents the format that was created with the aim to analyze service development historical data. This format was developed based on the observation of elements of interest and guidelines within eight archival cases. Some archival cases had more information than others. It was observed lack of discipline and absence of formal

procedure among service providers to archive information about service development past experiences.

Each of the eight archival cases was coded and these codes were classified in a Microsoft Excel spreadsheet based on the followings criteria:

- Operator dimensions: e.g. development model, pros/cons, developer's competencies.
- Environment, e.g. regulation, country economical conditions, competitors offer in relation with the service.
- Service development dimension related to the real execution plan.
- Success measures, identified as company business objective.

Based on the analysis of archival data, one preliminary set of lines of inquiry was created. This set was tested and complemented with the findings from the literature review to establish an initial survey instrument. This first instrument was used during the written or oral interviewed surveys with service development practitioners in the telecom operators along Latin America, to collect information about completed service development experiences in the telecom operators during the last five years. The aim of these surveys was to gather information from service development practitioners in the operators to add the data set and develop a second survey instrument to be used later in the case studies analysis. Initial feedback on both survey instruments was obtained across pilot surveys with two managers who were responsible to lead service development process in two telecom operators. The survey instruments were enriched with the feedback received during the pilot tests.

The names of service development practitioners were selected from a list of twenty-two new service development projects suggested from six telecom operators. The primes for each project were contacted via email and by phone to ask for their participation in the practitioner survey. Twelve service development primes responded and agreed to participate. Initially, an email with the survey format was send to the twelve practitioners. The respondents were asked to return the completed surveys in four weeks. It was important to avoid long periods to get the answers. Periodical follow up was

executed supporting and providing clarification the practitioners. In some cases the survey was answered by a personal interview. This mix approach email, interviews and constant follow up worked well for this phase of the research. The interviews were carried out in Spanish. Appendix B shows the version of the first survey instrument that was used to collect information from service development practitioners. Based on the information gathered from practitioners a second survey instrument was developed with lines of inquiry to be used during the multiple case studies evaluation.

A list of candidates to be part of case studies was selected with the advice of service development practitioners. Each survey participant was also required to include service development experiences that were perceived to be success by the telecom operator and by the market. The mentioned list was complemented with the input of service development managers. The cases were selected from this expanded list, as described in section 4.3. These managers also provided names of experts that had been primes for these development projects for potential case interviews.

4.3 The Research Sample

A research population of six telecommunication operators across Latin America region was chosen as a data sources. These operators include different line of business such us local fixed telephony, long distance, Internet providers, carriers and mobile. The number of cases selected (nine cases) coincides with the recommendations of Eisenhardt (1989) of between four and ten cases for case-based management research. Special care was necessary to manage the confidentiality of information. Cases were selected using theoretical sampling with the aim to sample towards saturation and theoretical completeness.

There were several reasons for selecting telecom operators in Latin America. First, the social and economic conditions for the countries in the region are similar. Second, the regulation in the telecom industry is at same level among the countries. Third, all the operators selected in the sample are key players in the region. Fourth, the telecom operators that accept to participate are in the same stage of the art of telecommunication

technology and have similar practices to acquire technology platforms. Finally, the accessibility of the researcher to service development practitioners and data offered an adequate sample space for the research.

The sample space was restricted to new telecom services launched after year 2002, a period in which the telecom industry in Latin America has experienced growing both in mobile and fix operations.

An inductive process was used, as the researcher moved from observation to the development of hypotheses (Judd *et al*, 1991). A project was defined as a process of transforming a service idea from initial screening to commercial launch. Each participating manager was asked to select projects with the following criteria:

- The projects had been developed recently and launched during the last five years.
- The projects are internal projects, in which personal from different departments participated in the development of new project.

After the initial work presented in section 4.2 was executed, the information from the survey responses provided lines of inquiry used in the interviews to collect the initial data on telecom service development process. From the list of relevant service development projects and with the support of managers and primes of service development, an initial sample of two cases was selected for which experimented respondents for both, services and model development, were available for detailed interviews. These two cases corresponded to operators with presence in the same country in the mobile sector. The respondents for each case included: a) a service champion responsible for the complete service development process and or b) a technical or commercial expert directly involved in the creation of new service. In parallel the researcher also collected archival information related to the selected cases, focused on sales, market perception and customer satisfaction. This archival information was gathered from Internet and official reports.

After the data on the first two cases was collected and analyzed, two more cases were selected based on their potential to extend the emergent theory. These cases were relevant because they corresponded to service development experiences in two different countries. After the data on the third and four cases were collected and analyzed, three additional cases were added to the study. These additional cases were selected from the IP and fix telecom sectors, because they complemented the research of the previous four cases. After the data on the seven initial cases was collected and evaluated two final candidates were selected. These final cases correspond to service projects developed for operators with presence in a country of Latin America different from the previous seven cases, and related to a new technology.

The selected nine cases did not overlap with any of the service development projects evaluated during the preliminary work. The practitioners who participated in the survey phase did not overlap with the respondents who participated in the cases evaluation. This strategy avoided biases from the preliminary stages becoming part of the primary data of the study.

4.4 Data Collection

The data gathering process was designed to use triangulation of multiple data sources (Jick, 1979). Appendix C includes the lines of inquiry used during each interview with each case study respondent. The data included:

- At least one key participant in service development process was interviewed.
- Archival information from public source, including government reports, media, financial documents, press release and marketing.
- Relevant remarks from other interview respondents.

The format for each interview was semi-structured, with some opening questions to establish general context and probing questions to establish details. The interview format used the best practices suggested by Foddy (1993). The objectives were established at the beginning of each interview and the context of each question was framed for each

question according with the particular perspective. These questions covered the potential lines of inquiry established previously.

A total of nine interviews were conducted, five of them face to face and four by telephone. The duration of the interviews was in the range of 30 to 60 minutes. Some interviews respondents, especially managers of service development process, were able to provide information on more than one case. Prior to each interview, the researcher got available archival information related with the cases. Via email the respondent was provided with a general description about the research objective, an overview of the interview format, and a list of general topics to be addresses during the interview. Each interview was tape-recorded and subsequently transcribed by the researcher. Notes on the interviews were taking to facilitate the review of the answers along the established lines of inquiry.

4.5 Data Analysis

Nine descriptive case studies were developed. Each case shared a common format including transcribed text of interviews and researcher's notes in the following aspects: summary, historical timeline with important milestones in the service development process, technical overview of the platform used in the service development process, objectives of the development, business model, development model, descriptive story of the operator, lessons learned during the development process, environment, and the support of top managers.

A Microsoft Excel spreadsheet was used to classify codes based on the preliminary data. This information was permanently updated based on collected data. This coding list was expanded and refined through the study by adding, eliminating, sorting, clustering codes according with their rate of occurrence.

Interview transcripts and researcher's notes related with each of the nine case studies were coded and manually entered into another Microsoft Excel spreadsheet. These codes were classified in the following categories:

- Relevant actions taken by the telecom operator during the service development process.
- Special outcomes of the service development process that were defined as objectives for the operator.
- Specific internal and external circumstances which influenced the actions of the telecom operator.

The codes in the case-study database were compared with the codes established in the preliminary work. Based on these comparisons, the codes in case-study database were refined. Memos were created to define relationships across different codes observed among the cases. According with the frequency of occurrences, the codes were sorted using each of the categories mention earlier. Section 5 provides an overview of the results. Once the initial set of codes was developed in the case study database and frequencies of occurrences were determined, codes were analyzed for similarities by combining codes with similar behaviours. The coding list has a total of 209 relevant codes in the topics related to success factors, success measure, and environment. Appendix D contains the list of representative codes identified during the data analysis. Appendix E describes the meaning of these codes.

The next step was to analyze data to establish relationships between success factors, success measure, and environment. Section 6 presents the results and proposed propositions for these relationships. Memos used during data collection and data analysis were also factored during this phase of the study. These memos were collected in a Microsoft Word document. Memos were frequently updated with a new case study database. Each iterative step resulted in refinement of the codes and categories and therefore optimization of the memos in the memos document.

4.6 Theory Formulation

Once the core categories of service development process and codification related to success factors, success measures and circumstances became stable, causal relationships among core categories and the code list were observed. Finally, when these relationships

became stable and the resulting grounded theory could apply for most of the behaviour in observed data, emergent propositions were compiled. Those are presented in section 6. The coding database was reviewed to refine the codes. Causal maps were created of each category to illustrate the relationship with other categories.

The existing literature was continuously accessed throughout the research design, data collection, and data analysis, when it was relevant to the emerging relationships. The extant literature proposed some relationships that helped to improve the theoretical completeness of the grounded theory.

4.7 Reaching Closure

The resulting grounded theory was applicable for most of the observed behaviour in the nine case studies for telecom service development. The data was sufficiently extensive to provide replication of main findings, which generated confidence to the research in proposing an emergent theory.

No important discrepancies were found between the practitioner's observations and the case study findings, for these reasons the researcher was confident with the amount of data collected. This data included primary data from the case studies and secondary data from surveys about telecom service development and archival data from service development experiences.

The key findings of the study were reviewed with service development managers and practitioners among telecom operators. These experts in service development had expressed interest and provided feedback on some of the key findings in accordance with the recommendation given for Miles and Huberman (1994). These comments improved the quality of results included in the final report.

5 ANALYSIS OF RESULTS

This section begins with an overview of the nine cases evaluated and the emergent categories within the service development process. It then presents success measures, success factors and environment circumstance related to the development of new services by Latin America operators. Finally it provides a typical service development lifecycle process used by telecom operators during the service creation.

5.1 Overview of Cases

The cases corresponded to six telecom service providers and to their operations in several countries of Latin America region such as: Chile, Argentina, Bolivia, Guatemala, Brazil, Colombia, Paraguay and Mexico. There was much diversity from the data set collected from the service providers. For example:

- Four operators are in the mobile business. Three of them are multi-service providers: fixed line telephony, long distance and Internet.
- Three operators are owned by local investors. The others are owned by international corporations.
- One company had been in the market from 4 years; the others had been in the market for more than 10 years.
- Two of the operators are new entrants in their markets; the others are incumbents.
- Two of the operators were the results of mergers and successive purchases by international corporations.

5.2 Telecom Cases Description

Nine telecom innovation projects were selected from the Latin America market. These cases were relevant and completed telecom service development projects. Service development practitioners and survey respondents carried out during the preliminary work perceived the cases as successful. Here is a general description of the nine projects:

- *Case I* (project 1, new service to the organization and new to the market, successful) deals with the developing of an SMS (Short Message Service) service in the mobile business. It allows the interchange of SMS messages between customers of different mobile operators within the same country. The company launched this service in 2005. The option to sent SMS messages to other mobile operators was an innovation for the company's mobile customers. This service was both promoted and forced by the local regulator entity. The resulting off-net SMS traffic grew up rapidly, producing important revenues to the supplier and satisfaction to the customer.
- *Case II* (project 2, new service to the organization, but not to market, successful) was related to the development of international roaming services in a new mobile operator. The benefit of the service consisted in offering consumers the option to get mobile service worldwide across roaming agreements with GSM (Global System for Mobile Communications) service providers around the world. The service also let international visitors get roaming in the local mobile network. Competitors had already commercialized this service. There was tremendous pressure from top management to get the service into the market quickly. At the same time, the service had to be very user-friendly, more than competing offers. It was one of the first successful new services that the company developed.
- *Case III* (project 3, new to the organization, new to the market, successful) was the development of ring back tone service in a mobile operator. With this service, at the beginning of a phone call, the calling party will not listen the common ring back tone sound but the sound of a music or melody previous chosen by the mobile subscriber (called party) registered in the service. The basic technology needed for this service was new for the telecom operator. The service development project mainly consisted of a technical implementation across the entire network, billing developments, agreement with third parts that provide the music content, customer communication and problem solving. Special considerations with the reliability of the technical platform and network capacity were necessary in the project.

- *Case IV* (project 4, service new to the organization, new to the market, successful) was a massive commercialisation of ADSL (Asymmetrical Digital Subscriber Loop) to provide Internet solution for a wire-line service provider. The main benefit of the service consisted in offering consumers the option to get broadband Internet connection. Competitors had not commercialized this service widely. As this was part of a new strategy for the wire-line service provider, there was tremendous pressure from top management to get the service into the market quickly. At the same time, the service had to be very user-friendly. Since it was a new service to the market, a training plan for customers and special customer care plan were necessary to support the customer. Today, this wire-line service provider is the leader in Internet services in its country.
- *Case V* (project 5, service new to the provider but not to the market) was the deployment of a GSM (Global System for Mobile Communications) platform for services nation wide for one mobile operator, a leader in the region market. This massive project implied several changes in all areas of the organization, including technical, information technology (IT), billing, logistic and customer operation. With the introduction of this technology the mobile operator had the opportunity to grow very fast in terms of revenues and customers, to lead market share and to introduce new services related with mobile data. One of the main challenges in this project was to manage the logistics related with the introduction of the SIM (Subscriber Identity Module) card in the phone terminal of the customers. It was necessary to implement a new process across the logistic infrastructure, to distribute the SIM cards to all the sale points and to train the customer about the use of this new element.
- *Case VI* (project 6, service new to the provider but not to the market) was the development of an IP Centrex service. This service was oriented to corporate customers and consisted in offering to business clients the option to manage the internal communication of a company with a virtual private network allocated in the service provider operator. With this kind of solution the corporative customers not need acquire a PBX (Private Exchange). The corporative customer has its own short code numbering plan and the possibility to manage its internal communications features across Internet.

The service is an IP application. As this was a business-to-business innovation, there was tremendous pressure from top management to get the service into the market quickly. At the same time, the service had to be very user-friendly.

- *Case VII* (project 7, service new to the provider and new to the market) dealt with the development of two new services to provide information to mobile customers when a phone call cannot go through. These services are Who Call and Notify Me. The Who Call service informs the called party by SMS message the number of calling party trying to call him, including the time of the event. The Notify Me service sends an SMS message to the calling party to inform it that the called party is available to receive the call. These two complementary services were offered free of charge to customers. Services of this type are oriented to increase traffic in a network and to provide new features to customers to help them to make telephone calls. These two innovative services together with voice mail and “A” number identification service let the mobile operator increase considerably its call completion, network traffic and customer satisfaction. The technical platform to develop both new services was not very expensive.
- *Case VIII* (project 8, new to the service provider and new to the market,) was related to the launch of mobile broadband services based on 3G-HSDPA (Third Generation Mobile Technology with High Speed Data Packet Access) by a mobile telecom supplier. The idea behind the new service was to introduce an advanced high-speed mobile data service. The initial services implemented by the operator in this project were mobile broadband Internet, video streaming and mobile TV. One of the main objectives of the service provider in launching these services was oriented to acquire and maintain a differentiated image as a leader in technical innovation. The 3G services are new to Latin America and this operator was one of the first in launching this technology. The project required a significant investment for the operator and was complex technically. It was necessary to assign an important quantity of human resources for the 3G services development process and for sales and marketing. It was a new business model concept that consumed an important quantity of resources of the company for a considerable

period of time. There was strong pressure from the high level executives of the company to develop these services and there was for the competition.

- *Case IX* (project 9, new to the organization and new to the market, successful) was the development of a bundled offer including fix telephony, Internet access, long distance and TV. This offer, called CUADRU-PLAY, was perceived by customers as a new service. It has lead to increased customer base in some services, reduced churn, increased customer satisfaction and improved company perception for the regional operator that introduced it. Customers perceived the new offer as a reduction in tariffs with the option to manage only one bill instead of four. The invoicing model was very innovative and its benefits to consumer were promoted heavily, since nothing comparable existed in the wire-line sector. Today, the tendency in Latin America telecom markets is to provide this kind of bundled offer based on the fixed-mobile convergence.

5.3 Practitioner Beliefs

This section is the summary of several “practitioner beliefs” that were obtained from the interview transcripts of this research. Each statement represents a trend or general concepts proposed by one or more practitioners in answer to open-ended questions.

These statements suggested lines of inquiry that were used in the preparation of the survey instrument to collect the data from the nine cases.

5.3.1 Customers

1. Bundled offers are well accepted by the market.
2. A new service must avoid complex installation in customer premises.
3. To have well trained people with adequate resources to solve customer complaints quickly helps to consolidate and stabilize new services.
4. A well-designed market communication strategy is important during the introduction of a new telecom service.

5. Easy to use, easy to buy, easy to pay and easy to complain form a golden rule during the service development process.
6. Having continuous interactions with customers during a new telecom service development process provides a high chance of success during the life of the service.
7. To use beta customers or trial projects prior to launch the telecom service lets to increase the success chances of the new service in the market.
8. A high quality control across all the phases of the development process is highly positive with obtaining good results at the introduction of new telecom services.
9. It is crucial to guarantee a fast process to activate customers to new services
10. Billing must be clear and easy to understand for customers.

5.3.2 The Model

11. Operators with an official, standard and well-known service development process in place are more likely to succeed in implementing new telecom services.
12. Copying new service experiences from operators around the world with the adaptation to the market of the operator is a good practice to generate ideas to develop new services.
13. Having a road map plan in service development strategy leads to quick response to competitors and maintains leadership in the market.
14. Frequent innovations in new services and commercial plans are positively related with the success of a new telecommunications service.
15. To reduce cycle time to the market, a telecom organization must have IT developers in-house.
16. The creation of new services requires balance between flexibility and discipline.
17. Formalizing continuous improvement in the development process leads to an operator having high standards to implement new services.
18. A successful telecom service needs high quality launch efforts.
19. The project leader must manage the adequate readiness criteria in the entire organization infrastructure to give the exit acceptance to the market.
20. The resources necessary for the service development process must be allocated effectively and on time.

21. An operator must have a full time service development manager, very well connected with the entire organization
22. Adopting a parallel approach to execute activities is a solution that allows fast cycle time to the market.
23. Building in the voice of the customer through the new service development process makes a major difference to performance.
24. A well-done market and marketing research activities, contribute to increase the success probabilities of new telecom services.
25. Real high-level senior manager support and commitment is necessary to have a well establish and productive service development process.
26. Accurate specification regarding to requirements of the new service is crucial to secure short cycle time to the market.
27. To do everything right related with the up front homework has a very positive impact in the succeeding during the new telecom service development.
28. Because the introduction of new service has a general impact in all of an operator's organization, the development team must be cross-functional.

5.3.3 Technology

29. If a new technology platform is implemented for a new service this must be mature and sufficiently tested in other operators.
30. Services that are developed upon the supplier's existing technology, market and organization competences are positive related to success and negative related to failures.
31. The new service process must be implemented based on technologies and systems that meet with international standards.

5.3.4 Organization Culture

32. To be successful as an organization an operator must create a culture where service development must be the central focus of the enterprise.
33. The allocation of experts and well-trained personal in the front line has a positive relationship in the introduction of new telecom services.

- 34. To be a leader in service innovation a telecom operator must compare what it is doing with its peers and competitors in the telecommunication industry.
- 35. Permanent tracking of service development performance and post-launch status is essential for an operator to be successful in introducing new services.
- 36. An operator must maintain focus and prioritization in its service development process.
- 37. An operator must have a culture that secures an effective idea generation and idea capturing system to be a leader in service innovation.

5.3.5 Network

- 38. Network availability and accessibility are key factors in the strategy of new service development.
- 39. National coverage for a new service is highly desirable.
- 40. Services oriented to increasing call completion and customer features are well perceived in the market.

5.3.6 Regulatory Issues

- 41. The support and participation of regulatory bodies is important for certain kinds of new services, especially when are related with other operators.

5.3.7 Suppliers and Partners

- 42. A well-implemented service development process must warranty an adequate source of information contents: quality, timing, up-dated, availability, speed, etc.
- 43. To get the support of technology platform suppliers, it is crucial to accelerate development process.

These practitioner beliefs were compared against the emergent, grounded theory in section 7.3

5.4 Core Categories

Glaser and Strauss (1967) define a category inside the ground theory concept as a high-level statement that captures the underlying patters in the collected data. A core category

is defined as a category that relates to most other categories, and through these relationships, accounts for most of the ongoing behaviour. A category has properties, which are concepts about the category.

There are three core categories related to new service development processes in a telecom operator: success factors, success measures and environment.

Success factors include the proactive actions taken by a telecom operator during the service development life cycle to reach the company objectives and influence service creation success. Actions were assumed to be special procedures and tactical activities taken by the operator during service development.

Success measures specify the special outcomes of service development defined as objectives for the operator.

Environment describes internal or external circumstances that have a positive influence in the actions of the telecom operator to achieve success in the creation of a new service. These circumstances were assumed to be present at the beginning of the service creation and were maintained during the development process. Operator specific circumstances were called internal conditions, while those circumstances not specific to the operator and over which the operator had no control were called external conditions.

5.4.1 Success Factors

The success factors include all the proactive actions taken by the operator to get success in the creation of new services. The data analysis identified fourteen success factors that played an important role during the service development process. These were either internal or external to the service provider. Internal success factors are associated with strengths, competences or corporative strategies inside the organization of the telecom operator. The internal success factors affect consumer benefits only indirectly. The external success factors are features of the new service that answer to opportunities and threats in the telecom market and are related with the benefits of the new services,

experimented by the customer and the society. Table 2 presents the list of the internal success factors.

Symbol	Success factor
ISF1	Methodology to develop new services
ISF2	In-house development team
ISF3	Service development office
ISF4	Massive market objective
ISF5	Road map plan
ISF6	Content Management
ISF7	Competence in telecom platform integration
ISF8	Customer operation involvement
ISF9	Tuning and optimization
ISF10	On line information about service performance

Table 2: Internal Success Factors

Methodology to develop new services: One of the key aspects identified during the case study evaluation was the need to have an official methodology to develop new services rather than an exhaustive and detailed development process like occurs in product development. Dynamics in the market, the wide range of services characteristics and the changes in telecom technology demand to manage a flexible and adaptable service development methodology. This methodology must be followed with discipline but with certain flexibility to adjustments and improvisation. Paradoxically, during the survey some operators shared that they do not have a formal process within their organizations to develop new services. According with data collected from telecom service providers the

development process is made for up of seven phases which can mix together or overlap, depending of the nature and characteristics of the new services. These phases are: opportunity evaluation, specification and feasibility, technology acquisition, platforms integration, implementation and trials, commercial launch and post launch stabilization. But, there is not an accepted standard.

In-house development team: Telecom providers recognize that service development process is one of the most strategic activities inside the organization. Given this process is core for business of service providers, the development team must be composed by direct employees. A new service impacts and affects all areas of the organization. In order to guaranty a quickly and optimal integration of a new service, it must be created, planed, implemented and executed by in house resources. Supplementary activities could be outsourced. This management strategy contributes to have a constantly improvement of the process and creates a corporative memory.

Service development office: Due the strategic importance of new service development for a telecom service provider it is convenient to have a formal area inside the organization dedicated to a service development role with full time resources. Some operators informed that they do not have this kind of areas in their firms. This office could be conformed by a small team with the expertise across the whole business. This approach ensures focus, commitment, discipline, corporative memory, right communications, internal coordination and a constant production of new services. According with the own characteristics of a new services, temporary resources from different areas of the organization are joined to the development process.

Massive market objective: The development of new telecom services must be oriented to cover as much potential customers as possible. To be massive and preferably with national coverage is a key factor to success. In concept of most of the managers who participated in the survey, new services with massive target have the opportunity to get critical mass in a short period of time. This situation helps to promote the new service and also to create economics of scale to be very aggressive with tariffs. To get the

positive synergies of massive applications is necessary to offer national coverage in the territory where the operator is allowed to offer the service.

Road map plan: To copy is one of the most common practices in the telecom market. Some operators adopt the strategy to follow competitors and to copy new services in the marketplace. Time cycle of the telecommunication services is very short. Practitioners who were interviewed commented that to maintain leadership position in innovation a telecom operator must plan and develop a roadmap strategy to introduce services in short, medium and long term. With this approach an operator will be always one step ahead of competitors. One option is to develop variations of the same services, in terms of tariffs, promotions or content.

Content management: Most of the new telecom services require the access to sources of information and content such as video, audio, text or images. Normally, third parties provide this information. Basic characteristics of content such as high quality, high-speed access, diversity, up dating information and reasonable cost of content, are crucial to success with the launching of a new telecom services. Service providers must to develop specific strategies to manage content in the new telecom services. It is necessary to have personnel with the expertise and knowledge inside the company to manage this new component of the telecom business.

Competence in telecom platforms integration: The technical architecture of a telecom network is very complex. This includes telecommunication equipment, IT systems (billing & provisioning) and customer care subsystems. The implementation of a new service normally implicates to affect in minor or large scale the mentioned systems. To ensure optimal design in terms of cost-benefit ratio, to get right technology selection, to get fast implementation and to guarantee integration with the legacy infrastructure, the development team must have high proficiency in platform integration, data protocols and interfaces. This statement was repeated several times by technical managers who were interviewed. These skills are specially necessities in service development teams where telecom firm is a buyer of high tech equipments. This is the case of Latin America

telecom operators. In the other hand, for large and massive new services, to adopt more than one technology supplier can be one strategic factor to success. Because the Latin America service providers operate in countries where there are not telecom equipment suppliers, operators have adopted the strategy to choose more than one technology providers in order to avoid monopoly abuses from equipment supplier. This strategy lets to get reduced costs when a new service is development. The service development team must guarantee interoperability between different telecommunication platforms.

Customer operation involvement: Front line personnel in charge of customer care must participate from the beginning during the development process. This has been a key aspect to success in most of the cases evaluated. The early involvement of customer operation during the development process guarantees to get inputs from the customer side. In complement this strategy lets the incorporation of features in a new telecom services to offer better attention to customers requirements during the post launch phase.

Tuning and optimization: Once the new service is in operation with real customer generating real traffic it is always necessary to do tuning and optimization of telecom platforms. According with the experience of the service providers, this engineering process should be executed directly by personnel of the operator and not by the equipment provider or external people. This practice ensures fast and effective optimization and adjustments to the new service and also to acquire experience and knowledge by the technical staff.

On line information about service performance: To have an accurate information systems that provides information about the performance of the new services in real traffic conditions, lets to make on time adjustments to the new offer. The information involves technical data, sales performance and customer's requirements or customer's complains. An effective and opportune management of performance information lets to take corrective actions oriented to make the necessary adjustments in the value chain of the new service to get customer satisfaction.

Table 3 presents the list of the external success factors.

ESF1	Special free fee services
ESF2	Different ways of payments are also new services
ESF3	Resolving problems well
ESF4	The simple the best.

Table 3: External Success Factors

Special free fee services: Developing “free” of charge services has indirect payment by boosting other services. Not all services must be developing with the aim to charge for them. This type of services is oriented to increase call completion in the network, like free of charge voice mail. Other services can be oriented to increase the use of the network like Who call and notification services. These types of services not only generate acceptable paybacks but also improve the loyalty of the customers. In complement, to give the opportunity to customers to know and to use a new service, one effective strategy is to offer a promotion of free of charge service during one or two months afterward the service will be charged. This kind of marketing strategy generates in the user the need for a service and helps to teach the customer about the new service.

Different ways of payments are also new service: In high competitive telecom markets, like in the Latin America countries where more than 90% of mobile customers are prepaid, to introduce new ways of payments for the same service are also perceived by customers as new services. Examples of this model are prepaid cards with free minutes, ultra low price prepaid cards, electronic pins, to charge by second, etc. These kinds of options are very popular in emergent markets where the telecom operators must to share the wallet of the customer with its basic monthly expenses.

Resolving problems well: The allocation of experts and well trained personal in the front office has a positive relationship in the introduction of new telecom services. The expertise of people who deliver assistance to the customer is a major key to success. Because telecom service is intangible and difficult to assess, all telecom operators interviewed are agree on the statement that customers base their purchase decisions less on service functionality or attributes than on the positive experience with the front desk personnel, located on the telecom shops or in the customer care lines in the contact centres.

The simple the best: To guarantee success in the introduction of a new telecom service this must be simple. Simple in the way of using, simple in the way of charging, simple in the way of supporting customers and simple in the way of advertising the benefits of a new services. To ensure these attributes of simplicity, people from all the organization related with the customer in pre and post sale must participate in the process to develop new services. The new service must be used by the customer based on self-trained with the support of simple customer guides, does not matter the type of end-terminal that a client is using. New services must avoid complex installations in the customer premises. Easy or none installations in the customers premises encourage to purchase a new services and avoid delays and reduce complains from customer.

5.4.2 Success Measures

A set of five composite measures labelled as sales performance, competitive performance, cost performance, time to market, and service development culture have been identify according with the data collected in the survey as the way how telecommunication firms, the telecom international industry, and the researcher measure new telecom service success. Table 4 provides a summary of these success measures.

Symbol	Success Measure
SM1	Sales performance
SM2	Competitive performance
SM3	Cost Performance
SM4	Service development culture
SM5	Time to the market

Table 4: Success Measures

Sales performance: includes the elements related with the performance of sales in terms of units or subscribers who have gotten registration to the new services. These elements are:

- a) Market Share, represents the percentage of final customers that the telecom operator owns in a national market where it operates.
- b) Level of use objectives, which measures the amount of use of a service with figures like MOU (number of minutes per user during a month), sessions by month per user, or megabits per user per month.
- c) ARPU, the average rate per user, which is calculated dividing the total monthly revenues per service by the average base of subscriber during the month.
- d) Profitability, measures the differences between revenues vs. development and operation cost of a new service.
- e) Churn, measures the number of subscriber that are disconnected from the operator network, during a period of a month and is expressed as a percentage of company's subscribers base during this period.

Competitive performance

- a) Perception of superior services, figure related with subjective perception of the subscriber and the market from new services.

- b) Superior service experience, figure related with the level of satisfaction that a customer experiments when it uses new services.
- c) Superior to competitors, which reflects the competitive advantage that a new services gives to the operator, against its competitors. To choose differentiation as component of a new offer is a key strategy for a killer application. Copy, is a very common practice in the telecom market mainly because the patent model does not work in the service development environment. For this reason, to adopt differentiation attributes for new services that make copying difficult by competitors in a short period of time, is crucial to have success during the development of new telecom services. Operators that have been capable to develop services based in bundle strategy, that means including in the offer a combination of fix, mobile, data and TV services, are having tremendous success in the market. This kind of offer is difficult to imitate by service operators that normally can offer only one or two services.
- d) Corporate Image reputation, that involves aspects related with positive image, top of mind, that the customer, the market, the industry and the government have from the operator.

Cost Performance

- a) Lower development cost, related with substantially lower cost compared with the originally estimated during the development process of a new service.
- b) Cost efficiency, which reports the maximizations of the cost investments during the process of the service development.
- c) Cost reductions to other developments, when the developments generated during the production of one service, are used during the development process of other telecom services.
- d) Reduction in manpower, when the launch of new service lets to reduce or optimize the human resource of a company.
- e) Reduction in complexity, when a new service lets to facilitate the operation making simpler the delivery of services to the final customer.

Service development culture

The development of new service lets the operator to improve and enhance its competences and aptitudes to develop future new services. Because the development and the operation of new services normally impact all the organization, it is important to have a real cross functional team in charge of the development of a new service. All the members of the team from different organization areas must be part of the creative service development process from the beginning. In general all parts of the organization must be familiar with the way service is developed. As more people in the organization become service development illustrated, better results are sure to follow. At difference with tangible product development or with service development process in other industries, the development of a new telecom service has a broad impact inside the entire operator's organization. In the words of at least two directors who participate in the interviews, problems in the service development process are due largely to telecom organizations that have simply grow too fast and too large without a solid culture in service development.

Time to the market

Reduction of cycle development time, when the development time of new services is substantially reduced in relation with the time originally planed.

5.4.3 Environment

The analysis from the data collected during the interviews with practitioners of telecom operators gives as result three circumstances that have direct impact in the service development process. These were mainly external circumstances that were given at the beginning of service development process. These circumstances were not altered during the life cycle of creation of one new telecom. The service participants had not control over these circumstances but found these to mediate their action oriented towards a successful completion of service development process. Table 5 provides a list of these circumstances.

Table 5: Environmental Circumstances

Symbol	Circumstances	External to Operator
EC1	Regulatory constraints	Yes
EC2	Content availability	Yes
EC3	Governmental National Plans	Yes

Regulatory constraints: local regulations are conditions that have a direct impact in service development process. High level of liberalization in the telecom industry is a propitious environment to success in the introduction of new services in the market. Clear inter-connexion rules between operators that compete in the same market are crucial to ensure some new services can be used without restrictions and extra costs. In countries with high constraints in the regulation rules and poor rules related with the inter-connexion between operators can affect not only in range of coverage of new services but also in tariffs to the market. Regulation related with radio electric spectrum has been crucial in the development of new wireless services.

Content Availability: an important number of telecom new services require the access to sources of information and content such as video, audio, text or images. Normally, third parties provide this information. To guaranty quality, high speed access, diversity, updating and acceptable costs are crucial aspects to success with the launching of a new telecom service. To make alliance with content providers based on revenues sharing of a new service is a strategy to integrate these providers in the service development process and guaranty high quality at reasonable cost in the information content required for a new service.

Governmental National Plans: special national plans in telecommunications launched by governments have fostered a quick introduction and expansion of new services. Given a

government's interest in the success of some kind of new service, favourable regulatory rules can be issued creating adequate environment to launch a new service. These conditions have been experienced in cases where government's plans are oriented to provide national wide access to the population, such as fixed line and mobile broad band, internet, etc.

5.5 The Service Development Model

Based on the information collected during the survey, all participants in the interviews believed that it is necessary to adopt a formal service development method inside a telecom operator. This method must be well communicated and well known for all the employees of the company. There is not a standard method. Each operator must establish its own method according with its structure, business strategies and the internal and external environment. It is not necessary to have a detailed and strict development model as occurs in product development but a methodology with basic guidelines to create new telecom services must be adopted. This methodology must be followed with discipline but with the enough flexibility to adapt the development process to the market demands. Paradoxically during the study only four operators (from a total of six) have adopted an official service development methodology. Some operators have incorporated guides of project management from PMI (Project Management Institute) to their service development process. Others operators use the guides from Sarbaness-Oxley (SOX) Act, to control the development process. Without a regular process that is constantly followed, it is unrealistic to expect to get success as a first class service provider. Top management team in one telecommunication operator firm must be constantly involved in the service develop process, which is the core of the business. From the evaluation of the data across the nine cases, it is possible to identify seven steps or phases that normally follow operators during the development process. These are: opportunity evaluation, specification and feasibility, technology acquisition, platforms integration, implementation and trials, commercial launch and post launch stabilization. According with the nature of the service and the internal characteristics of the provider organization, the mentioned phases can overlap between them. The Figure 7, adapted from Ward (2002), illustrates the overlapping nature of telecom service development. The following

section briefly presents a description about each development phase with emphasis in the insights observed during the case studies analysis.

Figure 7: The Development Model of Telecommunication Services

5.5.1 Opportunity Evaluation

During this first step operators evaluate initial reasons to define if the service could be technically feasible, operationally viable and economically profitable. A preliminary business case is also developed. In the case of some service providers who are members of an operator group, the general idea and the initial information to define whether the service opportunity is viable, can come from a partner operator or simply is adopted as part of a strategy plan of the operators group. In this case this phase is oriented around evaluating local regulations for the project.

5.5.2 Specification and Feasibility

According to many participants in the survey, this phase is one of the most critical and difficult in the development process. During this phase a complete business plan must be elaborated. Detailed specification in each area of the company must be prepared – areas

such as network, IT (Information Technology), billing, regulation and legal, customer services, marketing strategy, pricing, sales forecast and revenues.

5.5.3 Technology Acquisition

This phase is related with the acquisition of telecommunication or IT (information technology) equipment and the development of the software necessary to implement the new service. According to the data collected in the case studies, this is one of the most time consuming phases because it involves the elaboration of the RFQ (Request for Proposal), tender process, proposals evaluation, negotiation and contract process. SLAs (Service Level Agreements) and FSA (Frame Supply Agreements) are established between the telecom service provider and the equipment providers. This purchasing process normally takes place with equipment vendors from Europe, North America or the Far East. These vendors have commercial and local support office in Latin America. There are no domestic telecommunication vendors in Latin America.

5.5.4 Platforms Integration

The processes related to equipment manufacturing, transportation, installation and service initiation take place in this phase. New equipment is integrated into the existing infrastructure (network and IT). This engineering activity makes this phase the most complex during the development process. Deep expertise in integration of platforms, protocols and interfaces is required from an operator's technical resources to guarantee a success completion of this phase. In addition this phase is also time consuming.

5.5.5 Implementation and Trials

The integration of technical platforms with all the operational processes of sales, customer care, commissioning, billing and revenue assurance take place during this phase. The entire operator organization is involved. The advertisement and communication campaign, the technical and commercial training are developed in parallel. The new equipment is transferred to the operational responsibility of the operator's technical staff. In this phase pre-commercial trials are executed with the purpose of establishing company readiness to operate the new services. Normally these

trials are executed with direct employees of the company. Due to confidentiality and secrecy operators traditionally do not use real customers during these trials. Based on the result of pre-commercial experiences, adjustments to the new service are introduced. Stress tests are executed mainly in traffic and massive application processing. At the end of this phase all the telecommunication systems for the new service are ready, the sales force is in place and the front desk personnel is ready to assist customers.

5.5.6 Commercial Launch

In this phase the operator ensures that all areas of the organization are ready to deliver the new service to the market. The new service is in the market. This is a tactical phase, where customer operations (front desk and customer care) take a principal role in delivering support and advice to new customers.

5.5.7 Post Launch Stabilization

This final phase has two objectives. The first is to evaluate the performance of the new service related with sales, traffic (or events) and customers requirements or complains. It is necessary to have an accurate information system in order to evaluate the performance at the start of the new service. This aspect was frequently mentioned in the survey as a key point to success. Special care must be observed in new customer activation and traffic performance across the network. The second objective in this stage is to execute all the necessary adjustments, technically and commercially speaking, to close any gap and ensure any uncompleted activity from the development process is completed.

6 EMERGENT THEORY

This research has been oriented to establish the success factors and success measures relevant to the development process of a new service in a telecom operator. A set of ten internal success factors was identified, complemented by four external factors. In complement five success measures were established. During the research, circumstances were identified that influenced the outcomes and results of the service development process. This section presents a summary of emergent insights. It also reflects the researcher's own experience for more than twenty years in the telecommunication industry of which five were related with the development of new telecom services. The research identifies best practices to increase the likelihood of success and to secure best ratio cost/benefit.

6.1 Internal Success Factors and Success Measures Relationship

Figure 8 shows some of the observed relationships between internal success factors and success measures.

6.1.1 Methodology to Develop New Services

Data analysis identified the methodology used by the telecom operators (section 5.4.1) to develop new services as an internal success factor. It was found that this factor makes a key contribution towards most success measures used to establish success in the new services.

It was observed that success of new services is based on the execution of a methodology officially adopted by the organization. There was not a universally accepted standard. To follow general guidelines with discipline across the creation process, however, contributes to optimising resources and reducing investment and operation costs during the development of new services (section 5.4.2). This practice also contributes to establishing a culture of service development inside the operator organization (section 5.4.2) and reduces time during the development process contributing to fast time to the

market (section 5.4.2). To guarantee discipline during the process, it is necessary to assign an experienced champion with skills in negotiation, communication and high-level contacts. This champion must be a project manager directly employed by the company. According with the information gathered during the case study evaluation, most of the champions had technical expertise with full time dedication to the project. To establish a formal methodology in a firm with general guidelines to develop new services and to assure that methodology is well communicated and that every employee has knowledge about the process, is a task for the executive team.

Figure 8: Internal Success Factors and Success Measures Relationship

[Proposition 1] Adopting an official methodology improves resource efficiency and reduces costs across the development process.

[Proposition 2] Adopting an official methodology reduces time to the market of a new offer.

[Proposition 3] Adopting an official methodology creates and maintains an organizational culture that supports the creation of new services.

[Proposition 4] Skilled champion directly employed by the company increases discipline in executing an official methodology during service development.

[Proposition 5] Executive support for service development facilitates resources allocation, prioritisation and company commitment with telecom service creation.

[Proposition 6] The official methodology corresponds to a set of general guidelines with enough flexibility to adapt the process to particular circumstances. It is not necessary a strict, detailed and rigorous model.

6.1.2 In-House Development Team

Develop new services represents the future for a telecom operator and must be an area of great importance for the company. The knowledge that an in-house development team has about strengths and weaknesses of a telecom organization reduces time (section 5.4.2) in the integration of a new service to the existing infrastructure. In addition the experience, the memory, the knowledge and the expertise about service development remain inside the organization, contributing to creating a culture (section 5.4.2) oriented to new service creation.

[Proposition 7] Developing a new telecom service with an in-house team reduces time to the market.

[Proposition 8] Developing new telecom services with in-house teams creates and maintains an organizational culture that supports the creation of new services.

6.1.3 Service Development Office

New service development is a permanent process that demands the establishment of a specific unit inside the organization in charge of coordination and alignment across all areas of the company. A core team full time dedicated to the development process should be assigned to this office. This practice ensures focus, commitment, discipline, seriousness, corporative memory, right communications, internal coordination and a constant production of new services. This office must report directly to a high level executive. Around this office will turn the corporative culture (section 5.4.2) to create new service and new business opportunities.

[Proposition 9] An organizational unit dedicated to service development ensures a constant production of new services.

[Proposition 10] An organizational unit dedicated to service development creates and fosters corporate culture to develop new services.

6.1.4 Massive Market Objective

The development of new telecom services must be oriented to cover as many potential customers as possible. A massive approach demands national infrastructure in terms of network coverage, marketing and sales resources. New services with massive target have the opportunity to get critical mass in a short period of time and to get good sales performance (section 5.4.2). This situation helps to promote the new service and also to create economics of scale to be very aggressive with tariffs. This strategy is especially effective in regions where potential customers have low incomes as occurs in Latin America markets.

[Proposition 11] A massive customer target contributes to sales performance of a new telecom services in terms of subscribers and market share.

6.1.5 Road Map Plan

The life cycle of telecommunication services is very short. To maintain a leadership position and competitive performance in the market (section 5.4.2), a telecom operator must establish a roadmap strategy to introduce services in the short, medium and long terms. With this approach an operator can be an innovator and not a follower. From the case studies, it was possible to identify those operators who are members of the same international group share corporate road map plans for new services, taking advantage of experiences inside the group. To maintain a roadmap plan for service development also contributes to develop internal skill and proficiency in the creation of new services (section 5.4.2).

[Proposition 12] A long-term roadmap plan to introduce new telecom services facilitates competitive performance creating market confidence and company reputation.

[Proposition 13] A long-term roadmap plan to introduce new telecom services consolidates a corporative culture developing skills and proficiencies to create new services.

6.1.6 Content Management

According with the report of several participants in the survey, content is a new and crucial aspect in the development of new services. Most of the new telecomm services require access to sources of information and content such as video, audio, text or images. Normally an operator must to get this information from third parties. It is necessary to have personnel with the expertise and knowledge inside the company to manage this new component of the telecom business not only technically but also commercially and legally. Expertise in content management related to content updating, diversity and selection is crucial to offer superior experience (section 5.4.2) to customers in new services. This situation is consequently positive to the top of mind of the company. Complementary, to have experience in commercial agreements and alliance negotiation with content providers allows for better cost control (section 5.4.2) which can be transferred as lower tariffs to the final customer. This improves the chances of high level sales performance (section 5.4.1). In general all the managers in service development who participated in the survey testified to weakness in this new element of the service development cycle. To acquire skills and expertise in content management will be part of corporative culture to develop new services (section 5.4.2).

[Proposition 14] Skilled resources with expertise in content management facilitate competitive performance for a new service in terms of customer experience and company positioning.

[Proposition 15] Skilled resources with expertise in content commercial agreements contribute towards cost performance.

[Proposition 16] Skilled resources with expertise in content commercial agreements contribute towards sales performance.

[Proposition 17] Skilled resources with expertise in content management play a key role in the organization culture to support service development.

6.1.7 Competence in Telecom Platforms Integration

The introduction of a new service by a telecommunication operator normally impacts the entire technical infrastructure including telecom, IT systems (billing and provisioning) and customer care equipment. The development team must have high proficiency in platform integration, data protocols and interfaces to guarantee an optimal design for the technical solution of a new service. Nobody knows better than an operator's technicians the interoperability characteristics of different platforms, in terms of interfaces, protocols and information. The high level competency in the interoperability of technical platforms inside the development team contributes to optimize the technical solution for a new service with positive impacts in terms of cost performance (section 5.4.2). The ratio cost/efficient related with technical solution to acquire in the side of telecom equipments and the modification in the IT systems can be controlled based on the expertise of platforms interoperation. The cost to develop a new telecom services is mainly related with investments in equipment and software development. On the other hand, for large and massive new services, to adopt more than one technology supplier can be one strategic factor to success. Because Latin America service providers operate in countries where there are no domestic telecom equipment suppliers, they have adopted the strategy of choosing more than one technology provider in order to avoid monopoly abuses from equipment suppliers. This strategy leads to reduced costs when a new service is developed (section 5.4.2). The service development team must guarantee interoperability between different telecommunication technologies. At same time this expertise in platforms interoperation contributes to minimise time in the integration of a new service solution to the legacy infrastructure, with a favourable impact on time to market (section 5.4.2). This proficiency in telecom platforms interoperability is especially necessary in service development teams where telecom firms buy of high tech equipments. This is the case of Latin America telecom operators.

[Proposition 18] Skilled technical resources with expertise in integration of telecom platforms contribute to optimize the solution for a new service in terms of cost/efficient.

[Proposition 19] Skilled technical resources with expertise in interoperability among telecom equipments and IT systems facilitate the integration of a new service solution reducing time to market.

6.1.8 Customer Operation Involvement

A key practice with positive impact in service development highlighted by the participants during the survey was the active and permanent participation of front desk personnel in charge of customer care and service delivery. The active interaction with this part of the organization from the beginning of the development process leads to more effective customer care and to better sales performance (section 5.4.2). The involvement of customer operations is a good practice because it facilitates management in a correct way the most tactical phase of the development process, the commercial launch. Crucial to attract new buyers are support, attention, training and problem solving received by a customer of a new service. The early participation of customer operation in the service development process also contributes to optimize the design of processes and business routines with a positive impact in the development time (section 5.4.2).

[Proposition 20] Active involvement of customer operation personnel in the service development process prepares the front desk towards the commercial launch contributing to sales performance.

[Proposition 21] Early involvement of customer operation personnel in the development of a new service contributes to optimize processes and business routines reducing development time.

6.1.9 Tuning and Optimization

Once the new telecom service has been launched to the market and real customers are using the new offer, it is highly recommended to do tuning and optimization to telecom /IT platforms, and to the inter-working between them. Most of the practitioners accepted

that this process must be executed directly by personnel of the firm. This practice ensures fast and effective optimization and adjustments to the new service contributing to improve the customer experience with positive impacts in competitive performance of a new service (section 5.4.2). In a few cases, some technical managers who participated in the survey informed that this activity is executed by resource from equipment providers or external. This approach also facilitates the acquisition of experience and knowledge by the technical staff.

[Proposition 22] Post launch tuning and optimization of technical platforms executed directly by service provider personnel contributes towards competitive performance of a new service.

6.1.10 On Line Information about Service Performance

Analyzing, tracking and reviewing a service performance once it is launched are critical activities to the success of the new offer. All the managers interviewed during the survey agreed with this statement. Having an accurate information system that provides information about the initial performance of the new services in real traffic conditions, allows real time adjustments to a new offer. The information involves technical data, sales performance, revenue assurance, potential fraud, customer requirements and complains. An effective and opportune management information system allows corrective actions oriented to making necessary adjustments in the value chain of the new service that generate a positive impact in competitive performance (section 5.4.2).

[Proposition 23] Access to accurate and on time information about service behaviour during the launch phase lets to implement effective adjustments contributing towards competitive performance.

6.2 External Success Factors and Success Measures Relationship

Figure 9 shows some of the observed relationships between external success factors and success measures.

Figure 9: External Success Factors and Success Measures Relationship

6.2.1 Special Free Fee Services

Some of the interviewed operators have implemented services oriented to increase traffic and to increase the percentage of call completion in their networks. These types of services normally have low cost investment and can be offered free of charge to all customers. According to the information collected during the survey, these services have paybacks of least of one year, based on the incomes generated by the increasing of traffic and improvement of call completion. With this strategy customers perceive the interest of the operator to improve its service experience. This model also contributes to reducing churn and generates customer loyalty, contributing in positive way to enhance competitive performance (section 5.4.2). An example of a service that increase call completion is free voice mail. Other free services oriented to increasing traffic in the network are call identification (customer who generates the call), Call Me (notification from a called subscriber that is ready to receive a call), How Call (detailed information to

the customer about missing calls) or reduced tariffs to telephone calls or SMS in off peak hours (low traffic in the network).

[Proposition 24] Special free of charge services oriented to increase traffic in the telecom network or call completion have a positive contribution to competitive performance of the company.

6.2.2 Different Ways of Payment are Also New Services

In emergent markets where most services are prepaid with low average rate per user (ARPU), the introduction of new ways of payments for the same service are also perceived by customers as new services. This strategy not only generates positive perception in customers contributing to increase competitive performance (section 5.4.2), but it is also an effective way to increase revenues by improving the sales performance of existing services (section 5.4.2). According to the information provided by some operators, some examples of this model are: ultra low cost prepaid cards, electronic pins, and call charging by the second.

[Proposition 25] Innovation in new payment options is perceived by customers as new services with positive impact in competitive performance.

[Proposition 26] Innovation in new payment options is an effective way to improve sales performance.

6.2.3 Resolving Problems Well

Because telecom service is intangible and difficult to assess, all the sales and marketing managers interviewed during the survey agreed with the statement that customers base their purchase decisions less on service functionality or attributes than on the positive experience with the front desk personnel (customer care in contact centres). The support, guidance, training and advice offered by personnel in the front office contribute to superior customer experience and generate differentiation perception. This approach produces a positive effect in competitive performance (section 5.4.2) of the company. This high quality interaction between front desk and customer must be maintained across the entire life cycle of the service.

[Proposition 27] Skilled resources with expertise to deliver first class customer assistance in the use of a new service contribute towards differentiation and superior client experience.

6.2.4 The Simple the Best

To guarantee success in the introduction of a new telecom service, it must be simple. This was also a statement generally accepted by managers in service development. Service simplicity is identified by those interviewed in the case surveys as the most important factor for a superior experience and differentiator with a high impact on competitive performance (section 5.4.2).

Simplicity must appear across all dimensions of the new telecom service. Simple to use, the new service must be used by customer based on self training with the support of simple customer guides. The installation of user terminals in customer premises must be simple and preferably none. The communication to promote and to advertise the benefits of new services to the market must be simple and clear. Complementary, the billing of new services must be simple and clear. To ensure these attributes of simplicity normally require internal complex solutions that can have a negative effect in cost and time to the market.

[Proposition 28] Simplicity attributes in a new telecom contributes towards sales performance.

[Proposition 29] Simplicity attributes in a new telecom service can demand complex solutions in its development process generating negative effects in costs and time to market.

6.3 Environment and Success Measures Relationship

As was early stated (section 5.4), the evaluation of data collected in the survey allows identification of three circumstances that have direct impact in the service development process. Figure 10 shows the relationships between external environmental circumstances during service development and the success measures in telecom service

development process. Service providers do not control these circumstances but find that they mediate their action oriented towards a successful completion of service creation process.

Figure 10: Environment and Success Measures Relationship

6.3.1 Local Regulatory Constraints

According to the information collected in the survey, some new services were not impacted by the regulatory conditions while some were. Normally this influence is not positive and generates delays in service development (section 5.4.2). This was the case when additional electromagnetic spectrum was needed to launch new services; such is the case of 3G (Third Generation Wireless Network). Weakness or absence in inter-operator regulatory rules can also delay the introduction of new services, as occurred with the launch of off net SMS (short messages service between customers of different operators). Particularly, the absence of regulation in inter-connexion fees (for voice and data) between operators can generate abuses for the dominant operator. In this case, it is the dominant operator who establishes a high fee to use its network, generating as a result high tariffs to interchange voice or data calls between customers from different operators.

This experience has occurred frequently in the Latin America region where the market is mainly open and there are more than two operators per country for the same service.

[Proposition 30] Regulatory constraints normally generate negative impact in time to the market for new telecom services.

[Proposition 31] Absence of regulation in inter-connexion rules among operators has negative impact in time to the market and sales performance of new telecom services.

6.3.2 Content Availability

From a total of nine cases evaluated, six based their success on the availability of content – content in Spanish or Portuguese, developed according to the culture of the region. The most popular information content in Latin America is related to music, video streaming, news, e-banking, games and images. The launch of 3G (Third Generation Networks) services was only feasible because of the existence of local content providers and bundled services that included TV content. Content providers have discovered the business potential of the information that they produce. To have access to high quality content with attributes of diversity, timeliness, high speed, language, and reasonable cost is crucial to guarantee superior customer experience in the use of a new telecom services (section 5.4.2). One strategy used by the operators in the region to meet the mentioned attributes is to establish alliances with content providers based on revenues sharing. Both service operator and content provider share the income of a new service. Quality in content also contributes to sale performance (section 5.4.2), not only for new services but also for existing services. This is the case of SMS (Short Message Service) and MMS (Multimedia Message Service) that have experienced a rapid increase in traffic because of the availability of content. This has led to the implementation of a huge number of applications based on these two services. Content availability also contributes towards time to market performance (section 5.4.2). To have content already developed and adapted to local conditions allows fast introduction of new telecom services and applications. The operator does not need to wait for the development of this content.

[Proposition 32] High quality content adapted to local requirements facilitates competitive performance of new telecom services.

[Proposition 33] Content availability not only contributes to sales performance of new services but also improves sales performance of existing telecom offering.

[Proposition 34] Content availability reduce time to market

6.3.3 Governmental National Plans

A new service will be more successful when it accords with some specific government plan. When this is the case, regulatory rules foster a quick introduction and expansion of new services contributing to their sales performance (section 5.4.2). This was the case of the off net-SMS (short message services), to introduce national SMS services between customers from different mobile operators. Other experience was the rapid growth of broadband services, based on an aggressive government plan to increase Internet access penetration in several countries of the region. Related services like ADSL (asymmetric digital subscriber line), Wi-Max or 3G took advantage of this government plan.

[Proposition 35] Government national plans in telecommunications can foster sales performance of new services.

Table 6 presents the emergent relationships between categories.

Table 6: Relationships Between Categories

Effect →

← Cause

	Success Measures													
	Sales Performance			Competitive Performance				Cost Performance		Time to Market	Service Development Culture			
	Market Share	Level of use	Sales	Superior customer experience	Differentiation	Corporate Image reputation	Constant production of services	Lower development cost	Cost efficiency	Reduction of cycle development time	Creates and consolidates culture	Development discipline	Prioritization and company commitment	General guidelines
Internal Success factor														
Methodology to develop new services								P1	P1	P2	P3	P4	P5	P6
In-house development team										P7	P8			
Service development office							P9				P10			
Massive market objective	P11													
Road map plan					P12	P12					P13			
Content Management			P16	P14		P14		P15			P17			
Competence in telecom platform integration									P18	P19				
Customer operation involvement				P20						P21				
Tuning and optimization					P22									
On line information about service performance				P23										
External Success factor														
Special free fee services		P24				P24								
Different ways of payments are also new services				P26		P25	P25							
Resolving problems well				P27	P27									
The simple the best.				P28				P29		P29				
Environmental Circumstances														
Regulatory constrains			P31							P30, P31				
Content availability		P33	P33			P32				P34				
Governmental National Plans			P35											

Pxy Positive Contribution
Pxy Negative Contribution

7 CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

The objective of this research was to identify success factors and success measures in telecommunication service development within a telecom operator. Secondary aims were to determine environmental circumstances that influence the telecom service development process and finally to establish a typical development model to create new services.

This final chapter is presented in nine subsections: the answers to research questions, the key findings, the conclusions, validity of results, comparison to the extant literature, comparison to practitioners' beliefs, implication to practitioners, contributions, and finally the limits of the research project and suggestions for future research.

7.1 Answers to Research Questions

The following are the answers to the questions that guided the aim of this research:

7.1.1 Success Factors and Success Measures

The research proposes fourteen success factors: a) service development methodology, b) in-house resources, c) service development office, d) content management, e) simplicity, f) competences in telecom platform integration, g) massive market objective, h) road map plan, i) accurate information systems, j) tuning, k) special free fee services, l) different ways of payments, m) resolving problems well and n) customer operation involvement. The research also suggests five composite success measures: a) sales performance, b) competitive performance, c) cost performance d) time to the market and e) service development culture.

7.1.2 The Telecom Service Development Model

The research identifies a typical model to develop new services in a telecom operator company and suggests managerial practices in each stage of the development process to get success during the creation of a new service. A set of seven stages were established which can overlap in scope and time, according to the nature of the new service and the

strategies of the operator. There is not a unique model accepted to develop new telecom services within all telecom operators.

7.1.3 Environmental Circumstances

Three environmental circumstances related with the development of new services in telecommunications providers were identified: a) regulatory constraints, b) content availability and c) governmental national plans. These circumstances are external conditions to the operator that mediate the influence of success factors on success measures.

7.2 Key Findings

The key findings of this study are drawn from thirty-five testable propositions for telecom service development described in chapter 6:

- a) Adopting an official methodology improves resource efficiency, reducing costs and time to market.
- b) The methodology corresponds to a set of general and flexible guidelines that should be executed with discipline.
- c) A long-term roadmap plan to introduce new telecom services creates market confidence, company reputation and develops proficiencies in the provider to introduce new services.
- d) Skilled resources in content management contribute towards sales, cost reduction, time to market and enhance customer experience.
- e) Skilled technical resources in integration of telecom platforms contribute to optimize the solution in terms of cost/efficient and development time.
- f) Early involvement of customer operation across the development process has a positive impact in to time to market and sales performance.
- g) Post launch tuning and optimization of technical platforms executed directly by provider personnel facilitate competitive performance of a new service
- h) Innovation in new payment options is perceived by customers as new services with favourable results in competitive performance.

- i) The creation of new service with own operator's resources consolidate service development culture, and lets the operator to improve its competences and aptitudes to develop future new services.

7.3 Conclusions

The results obtained throughout the research process suggest the following conclusions:

a) *Content management:*

The development of a new telecommunication service demands access to sources of information and content such as video, audio, text or images. Normally, third parties provide this information. Basic characteristics of content like high quality, high-speed access, diversity, up dating information and reasonable cost of content, are crucial to success with the launching of a new telecom services. Skilled resources in content management during the telecommunication service development process contribute towards sales, cost reduction, time to market, enhance customer experience and to acquire knowledge to create new services.

b) *Competence in telecom platforms integration:*

The technical architecture of a telecom network is complex and diverse. The implementation of a new service normally implicates the telecom network. To ensure optimal design in terms of cost-benefit ratio, to get right technology selection, to get fast implementation and to guarantee integration with the legacy infrastructure, the development team must have high proficiency in platform integration, data protocols, signalling and interfaces. Skilled technical resources in integration of telecom platforms contribute to optimize the solution for a new service in terms of investments and to reduce development time

c) *Customer operation involvement:*

Front line personnel responsible for customer care should participate from the beginning during the development process. The early involvement of customer operation across the development process guarantees to get inputs from the customer side. In complement this practice lets the incorporation of features in a new telecom services to offer better

attention to customers requirements during the post launch phase. The active participation of customer operation in the development process has a positive impact in to time to market and sales performance.

d) *Telecom service development culture:*

The development of new service allows the operator to improve and enhance its competences and aptitudes to create future new services. Because the development and the operation of new services normally impact the entire organization, it is convenient to have a multidisciplinary team in charge of the development of a new service. In general all parts of the organization must be familiar with the way service is developed. As more people in the organization become service development literate, better results are sure to follow. Skills and knowledge to develop new services become a fundamental source of competitive advantage for a telecom operator.

7.4 Validity

The results from this research accounts for most of the behaviour in the data set. These results were evaluated and analyzed by managers and practitioners of service development among service providers. In this validation process, new participants where involved from two service telecom providers in addition to previous practitioners. The opinions of acceptance and agreement with the results of this research expressed by managers and experts in service development provide an acceptable validation to the proposition presented in sections 6.1, 6.2 and 6.3. The resulting theory meets with the criteria to be judged as a well grounded theory: relevance, workability, fit and modifiability (Glaser, 1998).

7.5 Comparison to Extant Literature

A comparison among the results of this research and the extant literature is presented at following:

7.5.1 Summary of Findings in the Extant Literature

a) *Success factors:*

The extant literature (De Berntani, 1991; Story and Easingwood, 1995; Cooper and De Berntani, 1991; Edgett 1994; Johne and Storey, 1998 and Jimenez, Martinez and Gonzales, 2006) establishes the following success factors during the service development process: a) orientation to markets with high potential of growing, b) preliminary assessment, c) effective market research, d) business/financial analysis, e) fit of services with company capabilities and strengths, f) management support, g) new services based on modifications to the core offering, h) differentiation and superiority, i) market strategy, j) distribution strength, k) a development champion, l) innovativeness, m) people expertise, n) simplicity o) detail and formal process, p) effective application and selection of new technologies, q) quality, r) organization culture, s) resource allocation, t) testing, u) expert front desk personnel, v) launch effectiveness and w) resolving problems well.

b) *Success measure:*

The extant literature (De Berntani, 1991) identifies the following success measures across the service development process: a) sales performance, b) competitive performance, c) cost performance d) the impact of a new service over existing offer and e) time to the market (Blazevic, Lievens and Klein, 2003).

c) *Environmental circumstances:*

The extant literature (Ward, 1998 and Strouse, 2002) establishes regulatory constraints, fast technology changes and financial conditions as environmental circumstances that affect the relation between success factors and success measures to develop new telecom services.

d) *The service development model:*

The extant literature (Ward, 1998) proposes a telecomm service development model with six phases, those are: opportunity analysis, definition and feasibility, design and testing, development, implementation and trials and finally commercial launch and review.

7.5.2 Similarities with the Extant Literature

a) *Success factors:*

The following success factors to develop new telecommunication services identified across this research (section 5.4.1) agree with those success factors established in the extant literature to develop new services and summarized in section 7.6.1: a) service development methodology, b) service development office, c) simplicity, d), road map plan, e) resolving problems well and f) customer operation involvement.

b) *Success measures:*

The following success measures to develop new telecommunication services identified across this research (section 5.4.2) agree with those success measures established in the extant literature to develop new services and summarized in section 7.6.1: a) sales performance, b) competitive performance, c) cost performance, and d) time to the market.

c) *Environmental circumstances:*

Regulatory constraints were identified in this research (section 5.4.3) as external environmental circumstance coincides with the extant literature.

7.5.3 Differences with the Extant Literature

a) *Success factors:*

The following success factors to develop new telecommunication services identified across this research (section 5.4.1) are not explicit mentioned in the extant literature: a) in-house resources, b) content management, c) competences in telecom platform integration, d) massive market objective, e) accurate information systems, f) tuning, g) special free fee services and h) different ways of payments. The main reason for this discrepancy is due these success factors are more related with telecommunication industry than other services.

b) *Success measures:*

Service development culture was identified by the research as a success measure. The extant literature presents this aspect as a success factor. The development of skills and

knowledge to create future services is a key competitive advantage that telecom operators normally establish as a goal more than an internal factor, in contrast to other services sectors.

c) *Environmental circumstances:*

The following environmental circumstances identified during this research (section 5.4.3) are not explicitly mentioned in the extant literature: a) content availability, and, b) governmental plans. The reason for this discrepancy is that content availability is highly related with telecommunications industry, and governmental national plans takes place mainly in emergent telecom markets like Latin America.

d) *The service development model:*

The research identifies a model to develop telecom services with similar characteristics to the model found in the extant literature but with differences in the name and number of phases. The research identifies a typical telecom service development model of seven stages: opportunity evaluation, specification and feasibility, technology acquisition, platforms integration, implementation and trials, commercial launch and post launch stabilization. The stages related with technology acquisition, platforms integration and post launch stabilization are not explicit mentioned in the extant literature as phases across the development process.

Additional differences between the extant literature and the results of this research are:

Unique characteristics differentiate telecom service from other services such as: service delivery, continues nature of the services, flexibility in the development model, the complexity of telecom network and the impact of a new service in the entire telecom provider. Under these circumstances, the research results in success factors from product development or the service industry in general can not been fully applied to telecom service development as some studies suggest (Zirger and Mandique, 1984). In the same context to have a generic model to develop products and services is not the best practice

as established by Hull, (2004). The development of new telecom services requires separate research studies.

Research in the extant literature recommends high interactions with customer during the design of new services (Hill, Collier, Froehle, Goodale, Metters and Verma, 2002). On the contrary, the involvement of real customers during the creation process of new services is not a common practice in telecom service development. This behaviour is mainly motivated due to confidentiality and sensitive awareness to avoid copying or anticipation from competitors.

Avlonitis, Papastathopoulou and Gounaris (2001) suggest that the performance result of a new service is the outcome of the innovativeness of the services. The most innovative new services are less successful in terms of financial performance. This is not the case in telecom service experiences evaluated in this research where innovation has been essential to success. New services like those supported by GSM technology such as SMS or international roaming had a broad acceptance in the market from the beginning with success in financial performance. Similar situations occurred with the introduction of high-speed solution in the last mile, like ADSL (Asymmetrical Digital Subscriber Loop).

7.6 Comparing Practitioner Beliefs with the Emergent Grounded Theory

This section compares the results of the emergent theory (presented in sections 6.1, 6.2 and 6.3) to practitioner beliefs (presented in section 5.3).

The emergent findings from the grounded theory developed in this research were generally consistent with practitioner beliefs. There were no major discrepancies. Most of the statements collected from practitioners were similar to grounded propositions discovered through the iterative process and comparison. There were, however, a few differences.

High interaction with real customers in trials or beta tests to introduce a new service was suggested by practitioners, but in the cases evaluated there was very few or none of that

interaction. Confidentially and sensitive information can be the reason to explain this difference. Some operators use direct employees to test their new services.

Practitioner beliefs recommend that telecom service providers must do benchmarking of their new service development process. This practice was not observed across the case survey. It is not easy for an operator to get information related with the service development process of competitors. Only in operators that are members of a multinational organization could this practice be observed, limited to the operator members of the same international group.

Success measures set were not clear for practitioners. Most practitioner beliefs related success with sales, cost and time to market performance. Outputs related with competitive performance and development culture were not considered as key success measures from practitioners. Because development teams are always under stress to produce services they are mainly focused on cost, time and sales objectives. To establish a culture oriented to service development and to maintain competitive reputation of a telecom services provider are goals under the responsibility of the executive team.

7.7 Implications for Practitioners

The results of this research have practical implications for executives, managers and specialists in the telecommunication industry.

Executives in telecom service provider companies can use this study to understand the importance of the service development process inside a winning business strategy.

Telecom service providers need core competences and core capabilities to succeed.

Service development as a set of organization skills is a core competence. Executives in service providers must make service development the central focus of their company. To create and establish an organization culture oriented to develop and deliver outstanding services must be a priority of the top management team.

Managers in all parts of the organization should be familiar with the process of developing new services. As a new telecom service impacts all the areas of the organization, it is convenient that the employees, in general, become service development literate. Managers can use the results of this research and adopt some practices to improve the operational efficiencies in service development. The adoption of an official methodology to create new services and to establish a dedicated team to this activity should be the first steps towards to consolidate development culture. A formal procedure oriented to a continual improvement of the mentioned methodology must be also implemented. The model presented in this research to create new service can be adopted and adapted according with particular needs from operators. In complement, managers must have awareness about the importance of developing skills and competencies in their employees on topics related with content management and telecom platform integrations.

Teams and specialists in telecom service development can adopt practices mentioned in this research to complement their knowledge in service creation and to identify areas with opportunities to develop skills and to improve processes.

Suppliers of telecom products and equipment can use this research to understand the challenges that a service provider faces to develop new services. This knowledge can be useful during the process to prepare sales offers and propose solutions that best fit with service providers' needs and requirements. In Latin America there are no telecom equipment manufacturers. This fact generates special conditions in the operation of telecommunications industry. The adoption of a new technology by an operator can delay the development process and increase costs to create new service. Well-trained and skilled resources take time and are expensive to develop. Lack of adequate local support from manufactures and language barriers are facts that can affect the implementations of solutions for new services. The process of acquiring solutions and equipment from abroad for new services can take long periods of time, with negative impact in time to develop a new service. There is little interaction between equipment manufacturers and telecom operators related to service development processes. Equipment providers must

adopt a proactive role to facilitate and cooperate with telecom service providers during the development process.

7.8 Contributions

This thesis offers at least five contributions to the academic literature and management practices:

7.8.1 Success Factors in Telecommunication Service Development

The research proposes fourteen success factors. Six of them are replication of the extant literature and applicable to the development process in the service industry in general: a) service development methodology, b) service development office, c) simplicity, d) road map plan, e) resolving problems well, and f) customer operation involvement. The remaining eight success factors are not explicit mentioned in the extant literature: a) in-house resources, b) content management, c) competences in telecom platform integration, d) massive market objective, e) accurate information systems, f) tuning, g) special free fee services, and h) different ways of payments.

7.8.2 Success Measures in Telecommunication Service Development

The research also suggests five composite measures used by the telecom operators to establish success during the creation of new services. Four of them are replication from success measures established by the extant literature and applicable to the development process in the service industry in general: a) sales performance, b) competitive performance, c) cost performance, and d) time to the market. The measure related to service development culture is mentioned by the extant literature as a success factor rather than a success measure.

7.8.3 Environmental Circumstances in Telecommunication Service Development

Three external environmental circumstances that influence the development of new services in telecommunications providers were identified in this research. Regulatory constraint is a replication of the extant literature. Content availability and governmental national plans are not mentioned by the extant literature as environmental circumstances.

7.8.4 Telecom Service Development Model

The research identifies a typical model for developing new services in a telecom operator company and suggests a set of seven stages to execute the process. Three special stages are not mentioned in the extant literature: a) technology acquisition, b) platforms integration and c) post launch stabilization.

The success factors, success measures and the development model can be applied and adopted by a telecom service provider to increase the likelihood of success during the process of development new services.

7.8.5 Key Categories

Four categories appear to be crucial during the service development process of new telecommunication services: a) content management, b) telecom platform integration, c) customer operation involvement, and d) development culture inside the service provider organization.

7.9 Limitations and Opportunities for Future Research

This research is oriented to explore best practices and experiences in service development process across operators in Latin America. Section 6 presents a list of testable propositions that emerged from case study information and interviews with practitioners. These propositions can be tested with quantitative research methods. Based on the mentioned propositions a line of inquiry instrument can be developed and used to collect information about service development from a larger sample of service providers (for example between 50 to 60 providers) in order to apply quantitative methods to evaluate the information.

The research is limited to operators in one geographic region. Looking at the data of service development process in operators from other regions around the world can complement this research.

Given the importance of telecom services in the revenues of the telecom industry worldwide, additional researches and teaching in this topic could be very valuable, based on the concept of Service Science.

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APPENDICES

Appendix A: Archival Data Template in Service Development

Telecom Service development project: Project Number	
Collected Data	
Project Justification (reason to introduce the service)	xxxxxxx
Business Objectives of new service	xxxxxxx
Concrete outcomes expected with services (customers, revenues, market share, churn, leadership, foster other services, etc)	xxxxxxx
Technology solution adopted	xxxxxxx
Leader and human resources	xxxxxxx
Main issues	xxxxxxx
Original Schedule	xxxxxxx
Development model used	xxxxxxx
Business pros	xxxxxxx
Business cons	xxxxxxx
Innovation (new to the market, new to the operator)	xxxxxxx
Regulatory constraints	xxxxxxx
National Government alignment	xxxxxxx
Market influence	xxxxxxx
Competitors influence	xxxxxxx
Niche or massive market objective	xxxxxxx
Observed Data	
Success Factors	
% revenues over total revenues	xxxxxxx
% customer over total base	xxxxxxx
Number of departments interested	xxxxxxx
National/Local government motivation	xxxxxxx
Customers interest	xxxxxxx
Service development leadership positions	xxxxxxx

Technology leadership (existing technical experts)	XXXXXXX
Innovative or disruptive service	XXXXXXX
End customer terminal (type of device to be used by customer)	XXXXXXX
Service as part of a road map plan	XXXXXXX
Involvement of multidisciplinary team	XXXXXXX
Single or bundle offer	XXXXXXX
Is it a copy from other subsidiaries of the operator?	XXXXXXX
Service development involvement	
Internal coordination	XXXXXXX
Alliance with content providers or equipment providers	XXXXXXX
Alliance with other operators	XXXXXXX
Leadership categories	XXXXXXX
Proactive in searching and capturing opportunities	XXXXXXX
Level of visibility	XXXXXXX
Investment levels	XXXXXXX
Vigilance to competitors reaction regarding similar service	XXXXXXX
Regional or corporative development process	XXXXXXX
Execution time	XXXXXXX
Prototype and trails	XXXXXXX
Cross functional team	XXXXXXX
Others?	XXXXXXX
Success Measures (Desired Outcomes)	
Revenues vs. total operator revenues	XXXXXXX
Impact in traffic increasing (voice or data)	XXXXXXX
Development cost	XXXXXXX
Impact in customer satisfaction	XXXXXXX
Impact in churn	XXXXXXX
Impact in market perception	XXXXXXX
Customer registered to the service	XXXXXXX
Execution time for the development	XXXXXXX

Impact on employee satisfaction	xxxxxxx
Booster other services	xxxxxxx
Lesson learned	xxxxxxx
Customer care readiness	xxxxxxx

Appendix B: Survey to Practitioners in Telecom Service Development

INTRODUCTION: The objective of this questionnaire is to obtain clues and real evidences in order to evaluate the process and best managerial practices that service providers adopt to develop new telecom services in the Latin America Region. Based on the service development experience, the following set of question pretends to get the most important evidences and practices that the telecom operator normally uses in the development of new services. This information is collecting for the purpose of an academic research titled. “Success factors in developing new Telecom Services: A Grounded Theory”

INSTRUCTIONS to complete the questionnaire

- Based on multiple choice
- Mark the answer by encircling or placing x
- For other type of question please use brief sentences
- Feel free to add comments

General Information about the Service Provider

1. What is the overall organization size in terms of customers in the country?

0-500K 500K-2 M 2M-5M 5M-10M More than 10M
(K: Thousand, M: Millions)

2. Which are the marketing and service objectives of the operator?

1.Fix voice+data 2.Mobile Voice+Data 3.TV 4.Fix+Mobile 5.Fix+mobile+TV

3. Which market does the operator address (mark the necessary options)?

1.Regional 2.National 3.Residential 4.Business

4. What are the core-competencies of the Service Provider business?

1.Coverage 2.Network 3.Price 4.Customer Care 5.terminals
Quality

5. How long has the operator been in this business?

0-3 years 3-6 years 6-10 years 10-20 years More than 20 years

6. Does the operator own to a multinational organization?.... Yes.....No

General Information about Service

7. Could you provide a brief description of the Service in question?

8. Was it a new innovative service or an incremental service over your existing offerings

1. New services 2.Incremental (new tariffs, special offer, discounts)

9. Were other competitors already offering it?..Yes.....No

10. What value did the operator bring to the customer?

1.Price 2.Network 3.Bundle 4.Access to new 5.High speed 6.New way to 7.other
Quality offer content access communicate

11. Was this Service based on new technological innovations or represents a new business model? 1. Yes.....2. No

12. Which were the main goals to develop the new service? (Mark more than one option is it is necessary)

1.Market 2.New 3. Churn 4.Market 5. Other
Share Revenues or Positioning
Customer Retention

13.

Source of the Service idea

14. Where did this service idea initiated?

1.Inside 2.A group 3.Copy a 4.From other 5.Government 6.Customer 7.other
the corporative competitor corporate plans influence
operator plan subsidiary

15. Did the constant interactions with the end user help you in identifying this Service?

1.Strongly 2.Disagree 3.Disagree 4.Neutral 5. Agree 6 7.Strongly 8 Do 9. NA Not
disagree somewhat somewhat Agree. agree not Applicable
know

16. Was there a champion for this service development process within the operator?

1.Strongly 2.Disagree 3.Disagree 4.Neutral 5. Agree 6 7.Strongly 8 Do 9. NA Not
disagree somewhat somewhat Agree. agree not Applicable
know

17. Who championed this Service idea within the company?

1.Sales&Marketing 2.Thecnical 3.IT 4.Customer Care 5.other

Evaluation of the business opportunity presented by the Service

18. Was there a complete business opportunity evaluation?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

19. Was it a differentiated service i.e. is it distinct in the market?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

20. Was it established the size of the market for this Service?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

21. Was there a market research carried out for this project?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

Time line of important development events

22. Did important events and dates were established along the service development?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

23. Was there enough time spent in planning?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

24. Was there enough and multifunctional personnel associated with planning phase?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 Agree. 7.Strongly agree 8 Do not know 9. NA Not Applicable

25. Was the output from the planning phase an initial service requirements document?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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26. Was this phase followed by another phase to further crystallize the Service Requirements?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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27. During the development process was there activities executed in parallel, it means at same time?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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28. Was there enough time allocated for design/architecting phase?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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29. Was there enough and multidisciplinary personnel associated with architecting/designing of Service?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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30. Was there enough time and resources to execute tenders, negotiations/contract-signing with technology vendors?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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31. Was there enough time spent in the lab testing for this service?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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32. Were vendors/suppliers engaged in the service development process?

1.Strongly disagree	2.Disagree	3.Disagree	4.Neutral	5. Agree	6	7.Strongly	8 Do	9. NA Not
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disagree		somewhat		somewhat	Agree.	agree	not know	Applicable
----------	--	----------	--	----------	--------	-------	----------	------------

33.

34. Was a provider lab testing carried out?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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35. Were there enough people associated with this lab testing?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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36. Was the customer engaged in the development process?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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37. Was the new service offered to beta/pilot/trail customers?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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38. Were the marketing and sales teams involved during the testing phase?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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39. Was the launch phase well planed and executed?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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40. Was the service on time for commercialization to the end-user?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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41. Was there enough time to stabilize the new service technically and marketing speaking?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not	9. NA Not Applicable
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know

Learning required to develop the service

42. Was any kind of training provided to the team to deliver this Service?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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Development lessons learned by the Service Provider

43. Are there any significant lessons learned from your experience of delivering this new service?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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General Service development process principles demonstrate

44. Is there a Standard and formal methodology used by your organization to deliver new Services?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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45. Was this process based on phases?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

46. Were the stages of the process well defined and the activities were clearly established?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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47. Were the deliverables in each phase clearly established?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

48. Did the process have visibility; was it writing based on operation flow chart?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

49. Is this development process used in a disciplined way within the organization?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

50. Is the developing process constantly reviewed and reenergizing?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

51. Do you have an internal audit to verify how well the process is working?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

52. Did the services development process include a well defined phase regarding to front line expertise (post-launching)?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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• Development Team Composition

53. Did the team comprise cross-functional expertise, i.e. did the team include members from different functional groups e.g. marketing, engineering, research, accounting, customer care etc?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

54. Was the development team organized in reporting structures [E.g. functional, matrix, separate process or standalone organization]?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

55. Was the project/team leader enough competence to drive the service development process?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

56. Which were the key characteristics of the project leader (or champion) (Pls. mark more than one if it is the case?)

1.Time management 2.Technical knowledge 3.H.R management 4.Negociator 5.Communication 6.High level contact 7.Customer oriented 8. Other

57. How much control did the team/project leader exercise over the project?

1. Heavyweight 2. Lightweight 3. Other

58. Was relevant to success in developing process to have a champion as a full time keeper of the process?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

59. Was the champion of the project dedicated full times during different phases during the development of the Service?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

60. Was enough the number of members on the development team?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

61. Were the team members dedicated full times during different phases during the development of the Service?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

62. Did the members of the development team work in some previous projects together?

1.Strongly disagree 2.Disagree 3.Disagree somewhat 4.Neutral 5. Agree somewhat 6 7.Strongly agree 8 Do not know 9. NA Not Applicable

know

63. Were the skills set of the team members according with the requirement of the service development?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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64. Was the team co-located?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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• Communication

65. What kind of external communication mechanisms was used by the team? Were there any specific roles as identified by following list?

1. Ambassadors – political role e.g. lobbying for support and resources as well as buffering team from outside pressure, impression management
2. Task Coordinators – involved in coordinating technical and design/architecture issues
3. Scouting – general scanning for useful information
4. Guard – prevent release of proprietary information

66. Did the development team have any gatekeepers i.e. people responsible for overall communication with different groups within and outside the organization often with people outside their specialty?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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67. Were there frequent meetings among the members of the development team?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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68. Were there frequent meetings with customers?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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69. Where there enough meetings with the senior management?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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70. Where there frequent meetings with suppliers/vendors?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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• Resources

71. Did the development project get the resources early (in time)?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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72. Who was in-charge of managing and/or approving budget?

1.Technical director	2.Sales director	3.Customer care director	4.CFO	5.CEO	6. Other
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73. Were most of the members working on the project from within the company?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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• Risk Management

74. Did the development project take into consideration technical risks?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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75. If yes, briefly what were some of these technical risks?

76. Did you take into consideration marketing risk?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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77. If yes, briefly what were some of these marketing risks?

78. Is there long term Frame Supply Agreements with vendors to manage technological changes to develop new services?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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79. Was there some flexibility maintained on unresolved issues, if any?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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• **Senior Management Role**

80. Did the senior manager support this project politically?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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81. Did the senior manager support this project financially, ?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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82. Was this development project a top priority for the senior management?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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83. Did the senior management exercise tight control over the project, e.g. frequent reviews and specific direction?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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84. Did the senior management play an active role during the Service specification and development?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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85. Who were the typical stakeholders in the Service development?

1.CTO-
Technical | 2.CFO-
Finance | 3.COO-
Customer
care | 4.CEO
High
executive | 5.CSO-
Sales | 6.Other |
|---------------------|-------------------|----------------------------|----------------------------|-----------------|---------|

- **Milestones**

86. Briefly, what were some intermediate milestones during the course of development of the Service?

87. Were frequent these milestones, if any?

1.Strongly
disagree | 2.Disagree | 3.Disagree
somewhat | 4.Neutral | 5. Agree
somewhat | 6
Agree. | 7.Strongly
agree | 8 Do
not
know | 9. NA Not
Applicable |
|------------------------|------------|------------------------|-----------|----------------------|-------------|---------------------|---------------------|-------------------------|

88. Did these milestones help you achieve the Success of the development project, if applicable?

1.Strongly
disagree | 2.Disagree | 3.Disagree
somewhat | 4.Neutral | 5. Agree
somewhat | 6
Agree. | 7.Strongly
agree | 8 Do
not
know | 9. NA Not
Applicable |
|------------------------|------------|------------------------|-----------|----------------------|-------------|---------------------|---------------------|-------------------------|

- **Awards**

89. Is it convenient to offer any awards at the successful completion of project or intermediate milestones?

1.Strongly
disagree | 2.Disagree | 3.Disagree
somewhat | 4.Neutral | 5. Agree
somewhat | 6
Agree. | 7.Strongly
agree | 8 Do
not
know | 9. NA Not
Applicable |
|------------------------|------------|------------------------|-----------|----------------------|-------------|---------------------|---------------------|-------------------------|

Core competence of the Operator

90. What was the experience level of your organization in delivering such Services?

1.Nothing	2.Low	3.Media	4.Media
High | 5. High | 6 Very
High. |
|-----------|-------|---------|-----------------|---------|-----------------|

91. Briefly, what are the core competences within your organization to develop new services?

92. What are the core competences that you strive for within your organization?

93. Have these core competences within your organization been instrumental in successful delivery of the Service, if applicable?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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94. Did the operator use in house or out source IT resources during the service development process?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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95. Identifying key development activities. Score your company on an scale from 1 to 7 (1 is poor and 7 is excellent quality) when developing a typical new services:

- i. Idea generation, idea capturing and screening processes
- ii. Conducting preliminary technical, business and market assessment
- iii. Strong market orientation.
- iv. Emphasis in delivering superior and differentiated services
- v. Project definition and specs are accurately stated.
- vi. Conducting market studies and marketing research
- vii. Performing a rigorous business analysis
- viii. Set market trial
- ix. Pre-commercialization business analysis
- x. High quality launching and delivering the new service.
- xi. Post launches review and analysis.

96. In average, how much time take your organization to develop a new telecom services from the conception idea to commercial lunch?

1.Less than One month	2.Between 1 and 3 months	3.Between 3 and 6 months	4.Between 6 and 12 months	5. More than 1 year	6 Do not know
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Service development process and the operator culture

97. Was the process well known inside the organization and is it followed with discipline?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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98. According with your experience in which phases is necessary to have a special emphasis or carefulness?

1.Planing	2.IT development	3.Customer involvement	4.Beta Trials	5.Launch	6 Pos-Launch	7.Technology purchasing	8 Do not know
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99. Did you use any pass or no pass well defined criteria when the service development process is evaluate?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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100. Do you have effective project prioritization in place?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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101. Does the company culture support service development?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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Success of the Service

102. Do you consider the Service to be successful?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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103. Was delivering it within accelerated time frame a priority?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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104. What about the competition, are they now offering it already?

1.Strongly disagree	2.Disagree	3.Disagree	4.Neutral	5. Agree	6	7.Strongly	8 Do	9. NA Not
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disagree		somewhat		somewhat	Agree.	agree	not know	Applicable
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105. If not, does the competition plan to offer it in future?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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106. Was there a formal procedure to follow up the service performance in the market to establish if it was success or no?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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Success measures used, what was the metric for success?

107. Was it the number of customers?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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108. Was it the lower cost of the Service Development?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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109. Was it the market share?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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110. Was it time to market?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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111. Was it operator reputation?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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112. Was it the added value to the customer?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
------------------------	------------	------------------------	-----------	----------------------	-------------	---------------------	---------------------	-------------------------

113. Was it know how and experience to the organization?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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114. Was it measured in economical terms, margins, ROI, etc?

1.Strongly disagree	2.Disagree	3.Disagree somewhat	4.Neutral	5. Agree somewhat	6 Agree.	7.Strongly agree	8 Do not know	9. NA Not Applicable
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Appendix C: Lines of Inquiry Used for Case Studies

The following questionnaire highlights the general lines of inquiry that were used during the case interviews. The question were open-ended to establish a general context and probing questions to establish details, according to accepted interviewing best practices (Foddy, 1993).

- Q1. In general please comment about the method used by the operator to develop new telecom services.
- Q2. Which were the main company goals of the new service?
- Q3. In which category can you classify the new services: total new to the market and to the operator, a new service line, and addition to exiting line, improvements to existing services, repositioning or cost reductions?
- Q4. It was a single or a bundle offer?
- Q5. In your concept, was this service success?.. Please elaborate
- Q6. Which were the main factors to success in the development process of this new service?
- Q7. Which were the main measures or out puts of the development project to establish that it was success?
- Q8. Could you please identify internal or external circumstances (respect to the operator organization) that had a positive influence in the development process?
- Q9. Who were the key players involved in the service development process?
- Q10. Which were the main issues or challenges and how these were managed?
- Q11. Which were the company main competences that had positive impact in the service development process?

- Q12. Which are in your concept the core in house competences that an organization must have to be successful at delivering new telecom services?
- Q13. Is the developing process constantly reviewed and reenergizing?
- Q14. During what development stages should the customers engaged in the process?
- Q15. During what stages the vendors/suppliers must be engaged in the process and what must be their role?
- Q16. Identifying key development activities. Score your company on an scale from 1 to 7 (1 is poor and 7 is excellent quality) when developing a typical new services:
- i. Idea generation, idea capturing and screening processes
 - ii. Conducting preliminary technical, business and market assessment
 - iii. Strong market orientation.
 - iv. Emphasis in delivering superior and differentiated services
 - v. Project definition and specs are accurately stated.
 - vi. Conducting market studies and marketing research
 - vii. Performing a rigorous business analysis
 - viii. Set market trial
 - ix. Pre-commercialization business analysis
 - x. High quality launching and delivering the new service.
 - xi. Post launches review and analysis.
- Q17. How technological changes must be managed or adopted to develop new services?
- Q18. Were necessary some alliance with providers or other operators?
- Q19. Did the organization have a culture oriented to service development process?
- Q20. According with your experience in which phases is necessary to have an special emphasis or carefulness?

Appendix D: Condensed Code List

y: The coded concept was observed in the case study

n: The coded concept was not observed in the case study

	OBSERVATION	CASE-1	CASE-2	CASE-3	CASE-4	CASE 5	CASE 6	CASE 7	CASE 8	CASE-9
	Case Study Type									
1.	National Coverage Operator	y	y	y	y	y	y	y	y	n
2.	Regional Coverage Operator	n	n	n	n	n	n	n	n	y
3.	Wire line Services Operator	n	n	n	y	n	n	n	n	y
4.	Wireless Services Operator	y	y	y	n	y	n	y	y	n
5.	Multi-service provider	y	y	n	y	n	y	n	n	y
6.	Voice+Data+TV	n	n	n	n	n	n	n	n	y
7.	Operator size: Small, Medium or Large in terms of market share	S	S	M	M	L	L	M	L	L
8.	Independent operator	y	y	n	y	n	n	n	n	y
9.	Subsidiary or part of a group of operators	n	n	y	n	y	y	y	y	n
10.	New entrant in the market	y	y	n	n	n	n	n	n	n
	Service Information and attributes									
11.	Innovative	n	y	y	y	y	y	y	y	y
12.	Service in Market	y	n	y	y	y	y	n	n	y
13.	New technology	n	y	n	n	y	y	n	y	n
14.	New business Model	n	y	y	y	y	y	n	y	y
15.	Revenue Objective	y	y	y	y	y	y	y	y	y
16.	Differentiation oriented	y	y	y	y	y	n	y	y	y
17.	Customer Objective	y	y	y	y	y	y	y	y	y
18.	Market Share Objective	n	n	n	y	y	n	n	n	y
19.	Churn Objective	n	y	y	y	y	y	y	y	y
20.	Market Positioning Objective	y	y	y	y	y	y	y	y	y
21.	Bundle offer	y	n	n	y	y	y	n	y	y
22.	National Coverage Oriented	y	y	y	n	y	y	y	y	n
23.	Competitive in price	n	y	y	y	n	n	y	n	y
24.	Massive market oriented	y	n	y	y	y	n	y	n	y
25.	Platform of services	n	y	n	y	y	y	y	y	y
26.	High Quality Oriented	n	y	y	y	y	y	y	y	y
	Service Idea Generation									
27.	Inside the operator	n	y	n	y	n	n	y	n	n
28.	Corporative group strategy	n	n	y	n	y	y	n	y	n
29.	Copy or follow competitors	y	y	n	n	y	n	n	n	y

	OBSERVATION	CASE-1	CASE-2	CASE-3	CASE-4	CASE 5	CASE 6	CASE 7	CASE 8	CASE-9
30.	Customer requirement	y	y	n	y	n	y	n	n	y
31.	Government Plan alignment	n	n	n	y	n	n	n	y	y
32.	Copy from a brother operator	n	n	y	n	n	y	n	n	n
	Service Development Approach									
33.	Formal Development Process	n	n	y	n	n	y	y	n	n
34.	Champion for the project	y	y	y	y	y	y	y	y	y
35.	Process based on phases	n	n	y	y	y	y	y	y	y
36.	PMI model	n	n	n	n	y	y	n	y	n
37.	SOX controls	y	y	y	y	y	n	y	y	n
38.	Phases and activities well defined	n	n	y	n	n	y	y	n	y
39.	Clear Deliverable for each phase	n	n	y	n	n	y	y	y	y
40.	Formal process on writing	n	n	n	y	n	y	n	n	n
41.	Model with visibility	n	n	n	n	n	y	y	n	n
42.	Audit to the model	n	n	n	n	y	y	y	y	n
43.	Opportune reporting	y	y	y	y	y	y	y	y	y
44.	Full time Service Development champion	y	y	y	y	y	y	n	y	y
45.	Champion from Sales and marketing	n	n	n	y	n	n	n	n	y
46.	Champion with enough competences	y	y	y	y	y	y	y	y	y
47.	Champion from Technical	y	y	y	n	y	y	y	y	n
48.	Champion from Customer Operation	n	n	n	n	n	n	n	n	n
49.	Cross functional development team	y	y	y	y	y	y	n	y	y
50.	Negotiator Champion	y	y	y	y	y	y	y	y	y
51.	Champion well communicated	y	y	y	y	y	y	y	y	y
52.	Champion with high level contacts	y	y	y	y	y	y	y	y	y
53.	Champion from Human Resource	n	n	n	n	n	n	n	n	n
54.	Champion oriented to customer	y	y	y	y	y	y	y	y	y
55.	Opportune/detailed written service specification	y	y	y	y	n	y	y	n	y
56.	Market assessment before any investment, in time or money was authorized	n	n	y	y	y	y	y	y	y

[illegible]

	OBSERVATION	CASE-1	CASE-2	CASE-3	CASE-4	CASE 5	CASE 6	CASE 7	CASE 8	CASE-9
83.	IT knowledge and in-house operator capabilities	y	y	y	y	y	y	n	y	y
84.	Strong goal oriented	y	y	y	y	y	y	y	y	y
85.	Company culture support service development	y	y	y	y	y	y	y	y	y
86.	Employee Satisfaction inside the development team	y	y	y	y	y	y	y	y	y
87.	Awards to get success in the project	n	n	y	n	n	n	y	n	n
88.	Corporative memory	n	n	y	y	y	y	y	y	y
	Operator competence									
89.	Some experience with the new service	y	n	n	y	n	y	y	n	y
90.	Key competences were critical for success	n	n	y	y	y	y	y	y	y
91.	Competence in idea generation and screening	n	y	y	y	y	y	y	y	y
92.	Competence in preliminary technical, business and market assessment	y	y	y	n	y	y	y	y	y
93.	Strong market orientation.	y	y	y	y	y	y	y	y	y
94.	Focus in delivering superior and differentiated services	n	y	y	n	y	n	y	y	y
95.	Road map plan	y	y	y	y	y	y	y	y	y
96.	Competences in Project definition and specs are accurately stated.	n	n	n	n	n	n	y	n	y
97.	Competences in market studies and marketing research	n	n	y	y	n	y	y	n	y
98.	Competences performing a rigorous business analysis	n	n	n	n	n	y	y	n	y
99.	Short development time	n	n	y	n	y	y	y	y	n
100.	Competences in setting market trail	y	n	n	n	n	n	n	n	n
101.	Competences in Pre-commercialization business analysis	n	n	n	n	n	n	n	n	n
102.	Competences in high quality launching and delivering the new service	y	n	y	y	y	n	y	y	y
103.	Competences in post launches review and analysis	n	y	y	y	y	y	y	y	y

	OBSERVATION	CASE-1	CASE-2	CASE-3	CASE-4	CASE 5	CASE 6	CASE 7	CASE 8	CASE-9
104.	Especial emphasis in planning	y	y	y	y	y	y	y	y	y
105.	Especial emphasis in technology acquisition	y	n	y	y	n	n	y	n	y
106.	Especial emphasis in IT development	y	y	y	y	y	y	n	y	y
107.	Competences in platform integration	n	n	y	y	y	y	y	y	y
108.	Especial emphasis in customer involvement	n	n	n	n	n	n	n	n	n
109.	Especial emphasis in beta trials	y	n	y	n	n	n	n	n	n
110.	Especial emphasis in service launch	n	y	y	y	n	n	y	n	y
111.	Especial emphasis in post-launch	y	y	y	y	n	n	n	n	y
112.	Tuning and services optimization by service provider	y	y	y	y	y	y	y	y	y
	Milestones									
113.	Clear definition of milestones	y	y	y	y	y	y	y	y	y
114.	Milestones helped to success	y	y	y	y	y	y	y	y	y
115.	Parallel Processing	y	y	y	y	y	y	y	y	y
116.	Well done design/architecting phase	y	y	y	y	y	y	y	y	y
117.	Multidisciplinary personal in design	y	y	y	y	y	y	y	y	y
118.	Enough time to acquire technical platform	y	y	y	n	n	n	y	n	n
119.	Frequently Tracking	y	y	y	y	y	y	y	y	y
120.	Enough time to test	n	y	n	n	y	y	y	y	n
121.	Vendor Involvement	y	y	y	y	y	y	y	y	y
122.	Testing in vendor's lab	n	n	y	y	n	n	n	n	n
123.	Enough resources for testing	y	y	y	y	y	y	y	y	y
124.	Beta or trial with customers	n	n	y	y	n	n	n	n	y
125.	Marketing and sales involvement	y	y	y	y	y	y	y	y	y
126.	Launch Phase well executed	y	y	y	y	y	y	y	y	y
127.	Service on time to market	y	y	y	y	y	y	y	y	y
128.	Enough time for stabilization	n	y	n	n	y	y	y	n	n
129.	Quality Control	y	y	n	n	y	y	y	y	n
	Resources allocation									
130.	Resources on time	y	y	y	n	n	n	y	n	y

[illegible]

[illegible]

	OBSERVATION	CASE-1	CASE-2	CASE-3	CASE-4	CASE 5	CASE 6	CASE 7	CASE 8	CASE-9
189.	Logistic management	n	y	n	y	y	n	n	y	y
190.	Debt management	n	y	n	y	y	n	n	n	n
191.	Sales tools (Information system)	n	y	n	y	y	n	n	y	y
192.	Service specifications and service scope	n	y	y	y	y	y	y	y	y
193.	Technical specifications	n	y	y	y	y	y	y	y	n
194.	Previous experience in brother operator	n	n	y	n	y	y	n	y	n
195.	Because content management	n	y	y	y	y	n	n	y	y
196.	On line information about service performance	y	y	y	y	y	n	y	y	y
197.	Because well defined contribution revenues related to the overall company incomes	n	y	y	y	y	n	y	y	y
198.	Testing	n	y	y	y	y	n	y	y	n
199.	Well defined methodology to develop services	n	n	y	n	y	y	y	y	y
200.	Formal office for service development	n	n	y	n	y	y	y	y	n
	Main Challengers									
201.	Billing adjustments	y	y	y	y	y	y	n	y	y
202.	Customer commissioning	n	y	y	y	y	y	n	y	n
203.	Customers training	n	y	n	y	y	n	n	y	y
204.	Skilled human resources	n	y	n	y	y	n	n	y	n
205.	Investment Approval	n	n	n	n	n	y	y	n	n
	Role of Providers									
206.	IT high participation	n	y	y	y	y	y	n	y	y
207.	Content	n	y	y	y	n	n	n	y	y
208.	Telecom network high participation	y	y	y	y	y	n	y	y	n
209.	Terminal providers	n	n	n	y	y	n	n	y	n

Appendix E: Code Description

	CODE	DESCRIPTION
	Case Study Type	
1.	National coverage operator	New service offered across the entire country
2.	Regional coverage operator	New service offered in certain areas of the country
3.	Wire line services operator	Fix line operations
4.	Wireless services operator	Wireless operations
5.	Multi-service provider	Wire line or wireless services or a combination
6.	Voice+Data+TV	Tri o more services
7.	Operator size: small, medium or large in terms of market share	Size in terms of market share in the country where the operator offers services.
8.	Independent operator	Operator is not member of a multinational organization
9.	Subsidiary or part of a group of operators	Operator is member of a multinational organization
10.	New entrant in the market	New operator in a market
	Service Information and attributes	
11.	Innovative	New service for the market or for the operator
12.	Service in market	Service is already offered by competitors
13.	New technology	New service requires new technology
14.	New business model	New service requires new processes and operational routines inside the operator
15.	Revenue objective	New service is oriented to incomes
16.	Differentiation oriented	New service is oriented to get differentiation in the market
17.	Customer objective	New service is oriented to offer a high customer experience.
18.	Market share objective	New service is oriented to get market share in the market
19.	Churn objective	New service is oriented to customer retention
20.	Market positioning objective	New service is oriented to get reputation in the market
21.	Bundled offer	New service offered in bundling with other services
22.	National coverage oriented	New service is offered nation wide
23.	Competitive in price	New service price is similar or cheaper than that offers by competitors
24.	Massive market oriented	The new service is oriented to the whole market

	CODE	DESCRIPTION
25.	Platform of services	The new service is offered based on a common technologic platform
26.	High quality oriented	New service is oriented to high quality performance.
	Service Idea Generation	
27.	Inside the operator	The new service idea was born inside the operator
28.	Corporative group strategy	New service is part of the commercial strategy of an entire corporative group of operators
29.	Copy or follow competitors	New service was copied from competitors
30.	Customer requirement	New services idea came from customers' demands or market requirements.
31.	Government plan alignment	New service is aligned with a government's plan ,
32.	Copy from a brother operator	The service was copied from an operator member of the same multinational group.
	Service Development Approach	
33.	Formal development process	The operator has adopted an official development methodology
34.	Champion for the project	A leader to develop the new service was assigned
35.	Process based on phases	The development process is composed by several stages.
36.	PMI model	The development process is based on Project Management Institute practices.
37.	SOX controls	The development process includes controls from <i>Sarbaness-Oxley</i> (SOX)
38.	Phases and activities well defined	The development phases are well established.
39.	Clear deliverable for each phase	Each stage has a clear definition of its outcomes
40.	Formal process on writing	The development process is written on an official document.
41.	Model with visibility	The development process has visibility across the organization.
42.	Audit to the model	The development process is regularly audited
43.	Opportune reporting	There are on time reports about the development status.
44.	Full time service development champion	The leader of the development project was full time assigned.
45.	Champion from sales and marketing	The leader of the development project came from sales or marketing departments.

	CODE	DESCRIPTION
46.	Champion with enough competences	A skilled leader of the development project with enough knowledge in relevant topics of the process.
47.	Champion from technical	The leader of the development project came from technical departments.
48.	Champion from customer operation	The leader of the development project came from customer operation department.
49.	Cross functional development team	Team members from relevant areas of the company.
50.	Negotiator champion	A leader of the development project with negotiation competences.
51.	Champion well communicated	A leader of the development project with communication skills.
52.	Champion with high level contacts	A leader of the development project with access to high level staff.
53.	Champion from human resource	The leader of the development project came from human resources department.
54.	Champion oriented to customer	A leader of the development project with focus in the final customer.
55.	Opportune/detailed written service specification	The scope and specifications of the service were clear and on time.
56.	Market assessment before any investment, in time or money was authorized	There was a market evaluation of the new service opportunity.
57.	Enough resources (time, money and people)	Enough resources were allocated to the development project.
58.	Balance between discipline and flexibility	The development methodology was executed with discipline but with enough flexibility to introduce changes.
59.	Focus and prioritization	There is prioritization habit to develop new services according to company strategy.
60.	Customer involvement	There was an active participation of end users during marketing research, service specification trials and testing.
61.	Front lines expertise	Skilled people in charge of customer care.
62.	High control from champion	The leader of the development project exercises high control during the process.
63.	Full time team	The development team is full time dedicated.
64.	Previous relation between member of the team	There was previous inter relation among members of the development team.
65.	Team members with well competences	The members of development team were well training

	CODE	DESCRIPTION
66.	Company synergy	New service fitted well with the current company competences and technology
67.	Launch effectiveness	The launch stage was well planed and executed.
68.	Pass and not pass criteria to proceed to next phase	Stage gates process.
69.	Service development process is well known	The process is well known for all employees across the organization.
	Communication	
70.	Coo-located team	The development team was located in the same geographic place.
71.	Team with appropriated external communication	The development team had appropriated communication channels with the organization.
72.	Team with gatekeeper for communication	The development team had a person in charge of gate communication.
73.	Team with enough meeting	The development team had enough time to execute productive meetings.
74.	Meetings with customer	The development team has meeting with customers
75.	Enough meetings with senior managers	The development team had enough meetings with executive team.
76.	Enough meetings with vendors or providers or partners	The development team had enough meetings with external providers.
	Organization Culture	
77.	Continual improvement in the process	The development process has frequently reviews based on lesson learned from the service creation experiences.
78.	Process follow with discipline	The development process is executed with methodology and control.
79.	Regular benchmark of the model	The operator regularly executes comparison of its development process with the industry and incorporates best practices.
80.	Training for the development team	There is enough and regularly training to the development team.
81.	Self training	The development team practices self training.
82.	Team work	There was team work attitude and collaboration during the development process.
83.	IT knowledge and in-house operator capabilities	The operator has enough competence in IT to develop new services.
84.	Strong goal oriented	The development team is focused on results.
85.	Company culture supports service development	The organization recognises the importance of service development, supporting it with resources and giving high visibility to the process.

	CODE	DESCRIPTION
86.	Employee satisfaction inside the development team	The members of the development team are satisfied with their roles.
87.	Awards to get success in the project	Success in a new service is recognized and awarded by the operator company.
88.	Corporative memory	Lessons learned and experiences from development processes are documented and incorporated to the development model.
	Operator competences	
89.	Some experience with the new service	The operator had preliminary experience with the new service.
90.	Key competences were critical for success	The new service was developed based on key competences of the operator.
91.	Competence in idea generation and screening	The operator has competences to generate frequently good ideas for new services,
92.	Competence in preliminary technical, business and market assessments	The operator has competences in business plans, technical and market evaluation for new services.
93.	Strong market orientation.	The operator develops services based on the customer's voice.
94.	Focus in delivering superior and differentiated services	The operator has competences to develop service with high quality attributes.
95.	Road map plan	The operator has adopted a time plan to develop new service in short, medium a long term.
96.	Competences in project definition and accurate specs.	The operator has competences to establish new service scope and specifications.
97.	Competences in market studies and marketing research	The operator has competences in market evaluation for new services.
98.	Competences performing a rigorous business analysis	The operator has strengths and discipline in telecom business plan evaluation.
99.	Short development time	The operator has competences in fast development process.
100.	Competences in setting market trail	The operator has competences to identify telecom market tendencies.
101.	Competences in Pre-commercialisation business analysis	The operator has strengths and knowledge in services pre-commercialisation.
102.	Competences in high quality launching and delivering the new service	The operator has strengths and expertise launching new services and supporting customer needs.
103.	Competences in post launches review and analysis	The operator has experience and discipline making after launch evaluations to introduce adjustments to the new service.

	CODE	DESCRIPTION
104.	Especial emphasis in planning	During the development of the service in question especial attention was allocated in the planning of activities and processes.
105.	Especial emphasis in technology acquisition	During the development of the service in question especial attention was allocated in the procurement processes.
106.	Especial emphasis in IT development	During the development of the service in question especial attention was allocated in IT developments.
107.	Competences in platform integration	The operator has strengths and competences in integration of telecom equipments, platforms and IT systems.
108.	Especial emphasis in customer involvement	During the development of the service in question especial attention was devoted to customer involvement.
109.	Especial emphasis in beta trials	During the development of the service in question especial attention was allocated in testing and trials prior commercialization.
110.	Especial emphasis in service launch	During the development of the service in question especial attention was allocated in launching activities.
111.	Especial emphasis in post-launch	During the development of the service in question especial attention was allocated in activities and follow up after launching.
112.	Tuning and services optimization by service provider	Tuning and optimization of telecom and IT systems after launching a new service were executed directly by the operator.
	Milestones	
113.	Clear definition of milestones	Main events or goals across the development process were well established.
114.	Milestones helped to success	Milestones definition contributed to success in the development process.
115.	Parallel processing	There were activities executed in parallel across the time.
116.	Well done design/architecting phase	The design process was well executed.
117.	Multidisciplinary personal in design	There were people from different areas during the design phase.
118.	Enough time to acquire technical platform	There was enough time in the procurement process.
119.	Frequently tracking	There was enough follow up in the development process.
120.	Enough time to test	There was enough time to do testing.

	CODE	DESCRIPTION
121.	Vendor involvement	Equipment's vendors had an important participation in the development process.
122.	Testing in vendor's lab	The service prototype was tested in vendor's laboratory.
123.	Enough resources for testing	There were enough people from the operator and vendors to test the new service solution.
124.	Beta or trial with customers	Preliminary testing with end customers.
125.	Marketing and sales involvement	Active participation from sales and marketing during the development process
126.	Launch phase well executed	Successful launch stage.
127.	Service on time to market	Service was launched according with the development plan.
128.	Enough time for stabilization	There was enough time for tuning and optimization after launching.
129.	Quality control	There were quality controls across the development process.
	Resources allocation	
130.	Resources on time	Resources in terms of people, tools and logistic were allocated on time.
131.	Team members from inside the company	The members of the development team were direct employees of the operator
132.	High senior manager got investment resources	Budget was allocated on time.
	Risk management	
133.	Technical risk on consideration	Technical risks were assessed and a mitigation plan was designed.
134.	Marketing risk on consideration	Marketing risks were assessed and a mitigation plan was designed.
135.	Frame supply agreement with vendors	There was a Frame Supply Agreement with vendors to guarantee long term support and technology upgrades.
136.	Flexibility on unsolved issues	The development process is flexible with pending issues or alternatives to solve them.
	Senior management role	
137.	Political support management	Management team supported the service development with coaching, cooperation, liaisons and lobby.
138.	Finance support management	Management team supported the service development with budgeted and finance resources.
139.	Project was priority for senior management	The development of the new service received all the support from senior managers.
140.	Tight control over project	Frequently and constant control on development progress and milestones.

	CODE	DESCRIPTION
141.	Preliminary assessment	Active participation of management team during preliminary evaluation of the development project.
142.	Active role during specification	Active participation of management team during new service specification and scope definition.
143.	At list one senior manager as a stakeholder	Senior managers directly involved and committed with the development process.
	Success service	
144.	Success in the service development process	The new service development process was considered a success experience.
145.	Because sales performance	Sales goals were obtained (revenues, number of customers, etc).
146.	Because market share	Market share objectives were obtained.
147.	Because level of use	The traffic behaviour for the new service in terms of minutes, messages or Mega bits per second was according with the initial objectives.
148.	Because ARPU	Incomes per customer per month related with the new services.
149.	Because profitability	Profits from new service were according with initial expectations.
150.	Because churn	New service contributed to customer retention.
151.	Because superior service perception	New service provided superior customer experience in comparison with competitors.
152.	Because easy to use	New service was easy to use by the end customer.
153.	Because easy to pay	New service was easy to pay by the end customer.
154.	Because easy to install in customer premises	New service was easy to install and deliver in the end customer .premises.
155.	Because easy to purchase	New service was easy to buy by the end user.
156.	Because good availability	High levels of accessibility and always on performances.
157.	Because competitive performance	New service contributed with company image and reputation in the market.
158.	Because brand positioning	New service contributed to improve or maintain the brand of the operator.
159.	Because company know how	New service contributed to develop competences and capabilities in service development.
160.	Because cost performance	The cost of the development was in budget

	CODE	DESCRIPTION
161.	Because lower development cost	The cost of the development process was considerably below the budget
162.	Because increase traffic	The new service contributed to increase traffic in existing services.
163.	Because free of charge	The new service was free for the end customer.
164.	Because cost efficiency	New service contributed to develop expertise in the company to optimize cost on new service development process.
165.	Because reduction in manpower	The new service contributed to optimize the service development process related with manpower requirements.
166.	Because reduction in complexity	New service contributed to develop technical expertise in the company to reduce complexity during the service development process.
167.	Because other boosters	The new service contributed to improve performance in other services.
168.	Because enhance ARPU to other services	The new service contributed to improve ARPU in some existing services.
169.	Because time to the market	The new service was in the market according with the operator expectations.
170.	Because reduction of cycle development time	The new service experience contributed to improve the existing process reducing time development.
171.	Because superior service experience	Customers using the new service have expressed high satisfaction with the service.
172.	Because low complains rates	The numbers of complains from customer are according with the expectations.
173.	Because positive reference to potential customers	Users of the new service have given good reference to potential customers of the company.
174.	Competitors reaction offering the same service	Competitors have copy or introduced a similar service as answer to the operator.
	Environment	
175.	Employee satisfaction	The new service contributed to improve employee satisfaction in people involved with the development of the new service.
176.	Regulatory constrain	Limitations in the local regulation
177.	Radio electric spectrum availability	Limitation or delays to get access to additional spectrum.
178.	Numbering plan availability	There were enough resources related with numbering plan for the new service.
179.	Government plan alignment	The new service was in concordance with a government plan.

	CODE	DESCRIPTION
180.	Country economic conditions	The economic conditions of the country are favourable to introduce the new service.
181.	Content availability	The content to develop the new service was available with quality and acceptable costs.
182.	Customer operations	Customer operation and customer care departments had an active participation during the new service development from the beginning of the process.
183.	IT team	IT department had an active participation during the new service development process.
184.	Network	Network and technical departments had an active participation during the new service development process.
185.	Sales	Sales department had an active participation during the new service development process.
186.	Marketing	Marketing department had an active participation during the new service development process.
	Key Factors to success	
187.	Billing process	The billing development for the new service was on time and easy to be handled by customer.
188.	Customer set up	To activate a customer in the new service was implemented in efficient and appropriate way.
189.	Logistic management	The necessary logistic to implement the service was managed according with the requirements of the development.
190.	Debt management	An appropriated process to manage debt from customer was implemented.
191.	Sales tools (Information system)	Appropriated and efficient tools were developed to support sales teams to commercialize the new service.
192.	Service specifications and service scope	The business specifications for the new services were clear and on time including an appropriated scope
193.	Technical specifications	The telecom and IT specs for the new service were clear and on time.
194.	Previous experience in brother operator	The previous experience in the service (or similar) from operators inside the same multinational group had a positive contribution to the development process.
195.	Because content management	The operator has experience and skilled personnel to manage negotiations related with content provided by third parties.

	CODE	DESCRIPTION
196.	On line information about service performance, after launching.	Accurate and on time information about the new service performance in terms of sales, customer complains ,billing and technical issues
197.	Because well defined contribution revenues related to the overall company incomes	Revenues expected from the new service were clearly established and a tracking about this performance was in place.
198.	Testing	Business testing including technical, IT, customer operation and sales were executed on time and accordingly.
199.	Well defined methodology to develop services	The operator has adopted an official methodology to develop new services.
200.	Formal office for service development	The organization has an official office to coordinate and lead service development.
	Main Challengers	
201.	Billing adjustments	The adjustments in IT systems to bill the new service were complex and resource consuming.
202.	Customer commissioning	The implementations of processes to activate a customer in the new service were complex and resource consuming.
203.	Customers training	To prepare tools, train and assist customers to use the new service was a difficult task.
204.	Skilled human resources	To get access to experts and well qualified human recourses was difficult.
205.	Investment approval	To get budgeted assignment for the new service was a difficult task.
	Role of Providers	
206.	IT high participation	Active and effective participation from IT providers during the service development process.
207.	Content	Active and effective participation from Content providers during the service development process.
208.	Telecom network high participation	Active and effective participation from telecom equipment providers during the service development process.
209.	Terminal providers	Active and effective participation from end terminals and phones providers during the service development process.

Appendix F: Definitions and Glossary

Appendix F1: Definitions

At following some basic definitions about service development are presented, (Johne and Storey, 1997):

- *Service product*. The predominantly intangible core attributes that is purchase by customers.
- *New telecom service development (NTSD)*. The development of intangible telecom products which are new to the supplier.
- *Telecom Offer development*. The development, by the telecom supplier, of core service attributes added by the implementation of the processes by which the telecom service is evaluated, selected, purchased, consumed and supported.
- *New-to-the-market services*. New services that not only represent a major new challenge to the telecom supplier, but which are also new to the customers.
- *Product development/innovation*. The development (or improvement) of tangible products.
- *Major innovations*. New services for markets as yet un-defined and un-dimensioned
- *New service lines*. New services which represent major new challenges to the supplier.
- *New services for the currently served market*. New services that attempt to offer existing customers of the organization a product not previously available.
- *Additions to existing services lines*. New services that supplement a company's established service lines, so rounding-out the service mix.
- *Service line extensions*. Represent an augmentation of the existing service line or different way of service.
- *Improvements and revisions to existing services*. New services that provide improved performance and so replace existing products.
- *Services improvements*. Changes in certain features for existing products currently on offer to the currently served market.

- *Repositioning*. Existing services that are targeted to new markets or market segments
- *Cost reductions*. New services that provide similar performance at a lower cost of supply.
- *Style changes*. Highly visible changes to existing services.
- *Telecom Service provider*. Organization or company which core business is to sale and delivery telecommunication services.
- *Telecom Operator*. Telecom Service provider.

Appendix F2: Glossary

• 3G	Third Generation Mobile Thecnology
• ADSL	Asymmetrical Digital Subscriber Loop
• ARPU	Average Rate Per User
• CAGR	Compound Annual Growth Rate
• EDGE	Enhanced Data for Global Evolution
• GDP	Gross Domestic Product
• GPRS	General Packet Radio Service
• GSM	Global System for Mobile Communications
• HSDPA	High-Speed Downlink Packet Access
• IT	Information Technology
• ITU	International Telecommunication Union
• IP	Internet Protocol
• MMS	Multimedia Messaging Service
• MOU	Minutes Of Use
• PBX	Private Branch Exchange
• SMS	Short Message Service
• SIM	Subscriber Identity Module
• UMTS	Universal Mobile Telecommunications System
• VAS	Value-Added Services
• WiMAX	Worldwide Interoperability for Microwave Access

Table 7: Latin American Telecom Statistics

Country	Population Total	GDP per capita	Internet Users	Internet Users per 100 inhab.	Broad Band Subscribers Total	Broad Band Subscribers Per 100 Inhab.
	(M)	(US\$)	(000s)		(000s)	
	2006	2005	2006	2006	2006	2006
Argentina	39.13	4746	8'183.7	20.91	1'583.7	4.05
Bolivia	9.35	1028	580.0	6.20	17.6	0.19
Brazil	188.88	4742	42'600.0	22.55	5'921.9	3.14
Chile	16.47	7626	4'155.6	25.24	836.9	5.08
Colombia	46.28	2696	6'705.0	14.49	628.1	1.36
Costa Rica	4.40	4627	1'214.4	27.61	96.7	2.20
Cuba	11.29	1674	240.0	2.13	-	-
Dominican Rep.	9.02	3897	1'436.1	15.92	108.6	1.20
Ecuador	13.42	2811	1'549.0	11.54	141.0	1.05
El Salvador	7.00	239	700.0	10.00	61.5	0.88
Guatemala	12.91	2534	1'320.0	10.22	27.1	0.22
Honduras	7.36	1162	344.1	4.67	-	-
Mexico	108.33	7173	20'564.3	18.98	3'093.8	2.86
Nicaragua	5.60	841	155.0	2.77	19.0	0.34
Panama	3.29	4791	220.0	6.69	18.2	0.55
Paraguay	6.30	1214	260.0	4.13	16.0	0.25
Peru	28.38	2838	6'497.6	22.89	484.9	1.71
Uruguay	3.49	5112	668.0	20.55	106.6	3.06
Venezuela	27.22	4164	4'139.8	15.21	537.5	1.97

Latin American Telecom Statistics

Country	Total Telephone Subscribers per 100 inhabitants	Main telephone Lines (000s)	Main telephone lines per 100 inhabitants	Mobile cellular subscribers (000s)	Mobile cellular subscribers per 100 inhabitants
	2006	2006	2006	2006	2006
Argentina	104.69	9'459.8	24.17	31'510.4	80.52
Bolivia	37.87	666.6	7.13	2'876.1	30.75
Brazil	73.44	38'799.2	20.54	99'918.6	52.90
Chile	95.82	3'326.4	20.20	12'450.8	75.62
Colombia	81.30	7'860.2	16.98	29'762.7	64.31
Costa Rica	63.54	1'351.2	30.72	1'443.7	32.82
Cuba	9.97	972.9	8.61	152.7	1.35
Dominican Rep.	61.00	897.0	9.94	4'605.7	51.05
Ecuador	76.30	1'753.8	13.07	8'485.0	63.23
El Salvador	69.85	1'036.8	14.81	3'851.6	55.03
Guatemala	66.10	1'354.9	10.49	7'178.7	55.60
Honduras	40.13	713.6	9.69	2'240.8	30.44
Mexico	70.97	19'860.9	18.33	57'016.4	52.63
Nicaragua	37.11	247.9	4.43	1'830.2	32.68
Panama	81.00	488.3	14.85	2'174.5	66.14
Paraguay	56.56	331.1	5.25	3'232.8	51.31
Peru	39.37	2'400.6	8.46	8'772.2	30.91
Uruguay	95.14	987.0	28.31	2'330.0	66.83
Venezuela	84.79	4'288.1	15.76	18'789.5	69.04