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# New Service Development Process in Telecom Industry: The Case of Mobile Communication Company of Iran (MCI)

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### Abstract

This study aims to analyze and evaluate the existing product/ service development process of MCI to find the strengths and weaknesses, then we will introduce some implications and recommendation to decrease MCI time to market (TTM). Molecular Modelling Approach was chosen as a model to analyze and evaluate the compositions of MCI's offers because understanding well its components can be helpful for MCI to put right focuses on the crucial elements during innovation process. Also, Stage-gate model was chosen to offer development model for MCI because it is very adopted to telecom sector such mobile operators. Authors find that the main problems which increase the Time to Market (TTM) of MCI are unclear job description and standard deviation in offer development processes. The weak point of MCI in offer development are: offer Evaluation and Purchase and Customer Service Support. The strength points of MCI in offer development are: payment service and offer used by customer.

## 1. Background, Research Questions and Objectives

In mature competitive environment like Iranian telecom market, having wide product/ service portfolio has become important to survive for each mobile operator. Appropriate product/ service development process can generate competitive advantages by creating higher product/ service's quality with minimum cost and time to market.

MCI is biggest mobile operator in Iran and Middle East. Based on some reports (MCI's market survey 2016), time to market is the biggest challenge of this company which create follower position image in Iranian market.

MCI is slow in implementing new offer into its portfolio, this may result from slow or nonstandard new offer development process. Therefore, the objective of this study is to accomplish an evaluation on new offer development process of MCI. Then this study can introduce improvement actions for MCI's new offer speed as an objective. To do that we defined three questions as shown in Table 1.

*Table 1. Research questions and objectives.*

RQ#	Research Questions	Objectives
RQ1	What is the method implemented by MCI as its new offer development process and how does it work?	To assess and present existing MCI's offer development model to figure out its flow, structure, administration policy and internal communication of involved people within development process.
RQ2	What are the strengths and weaknesses of the existing development process and how MCI can have improved them?	To analyze and present the strengths and weaknesses which MCI is facing in the offer development process. then some recommendations and implications about improvement on new offer development speed can be suggested to MCI.

## 2. Research Scope

This study has been developed as a course project in the context of MCI. It was conducted for five years internship program of the authors in MCI starting from 2012 to 2017. (the authors are employees in different management levels in MCI which didn't have any chance to academically assess their company. but they know the changes and development trend of MCI's offer development. So, we have supposed that they had five years internship program). The study done on new offer development process and the focus is on offer time to market. The study participants are selectively invited from MCI's offer development experts or some employees who are collaborating with MCI in this regard.

## 3. Research Methodology

Methodology is the systematic and theoretical analysis of the methods applied to a field of study. This research methodology consists of research philosophy, approach and strategy which will be discussed in the below segments.

### 3.1. Research Philosophy

The aim of this research is to assess and analyze new offer development process which involved customers of MCI with a purpose to increase its efficiency. To do that, the best fit research philosophy for such kinds of this study is interpretivism. Interpretivist perspective puts more emphasizes on the subjects rather than the objects. It means the study will focus on the practices of the humans (employees) rather than the systems used (tools or models). Furthermore, the sample of participants in this research is small. but the investigations will be in-depth and based on qualitative data.

### 3.2. Research Approach

Research conduction is divided to two parts which are; deduction and induction. Deductive approach starts from selected theory then the next step is hypothesis. After that researchers will start observation and finally the theory and observation will be confirmed. But in induction approach, first researcher performs the empirical study with observation. then the pattern of data will be extracted. after that the hypothesis will be considered. finally, the new theory will be generated.

based on above research objectives, questions and

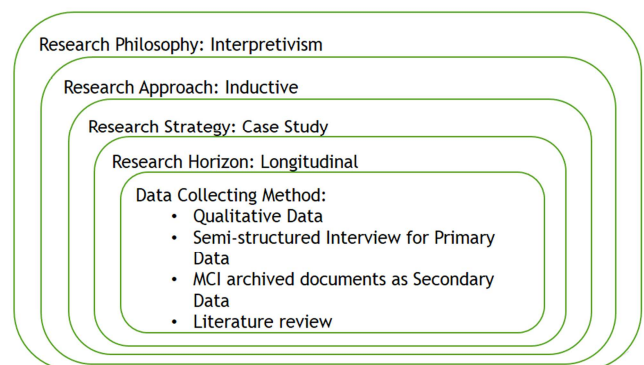
philosophy, this study should follow inductive approach. So, first we should have literature review to build up the competent knowledge and relevant information about research topic. Then, observation of the activities and events about offer development process should be done to collect data. In this study, data sample is probable small, qualitative and it should be collected with variety of data collection methods to increase validity of results.

### 3.3. Research Strategy

Case study is the best research strategy chosen for this study because it is a suitable technique to understand the dynamics of an offer development process. with case study, researcher capable to provide a full description of process, theory testing and new theories generation. Also, case study approach utilized data collection methods such interviews, questionnaires, and observations [1]. As mentioned before, the authors of this study are employees in different management levels in MCI which they know the changes and development trend of MCI's offer development. So, longitudinal is the selected time horizon for this research. Therefore, researchers will be able to conduct deeper investigation on the change and development. we can suppose this longitudinal case study started for five years internship program of the authors in MCI from 2012 to 2017.

To answer initial research questions, both primary and secondary data need to be collected. in this regard, primary data will be collected with performing observations and semi-structured interviews. Then secondary data will be gathered based on the existing literatures on offer development topic and internal documents of MCI.

The research methodology summary has been shown in figure 1.

*Figure 1. Research Methodology Summary.*

## 4. Theoretical Framework

To form better understanding about the topic, in this section we will introduce the conceptual background on development models of product and service. This section consists of reviewing the existing on distinctive characteristics of product and service development process and Molecular Modelling approach [2].

### 4.1. Product and Service Concepts

Shostack defined product as a tangible object and service as a consist solely of acts or processes [2]. In this regard, Goldstein state that *"A product can be the mixture of thousands of physical components, while services are the mixtures of processes, people skills, and materials"* [3]. Pride and Ferrell introduced intangibility in charge of characteristics of service. he argued that service is intangible because it is in physical form therefore it can't be touched [4]. In this regard, bateson presented two new concepts of intangibility which are; physical and mental intangibility. he argued that, in some case, service is physical intangible which means it is not material. On the other hand, mental intangibility means that service cannot be visualize. In addition, the pre-purchasing evaluation of service is very difficult. pre-purchasing evaluation of product (tangible) is very simple for customer because customer can see, feel and touch it. but service pre-purchasing evaluation, customer cannot do that. So, service pre-purchasing evaluation always in uncertainty situation for customers [5].

Another important concept in service development is inseparability. Czepiel and Surprenant in 1985 argued that production and consumption of the service is inseparable. In other word, when a customer purchases a service, then service will be produced simultaneously. Instead of service, in tangible product context, production and consumption of product do not be happened at the same time. First product is manufactured, then after purchasing by customer, it will be ready to consume. for this reason, product consumption feedback comes from customer side and after production and during consumption. But service consumption feedback comes immediately at the time that a service is produced and consumed [6].

Heterogynous is another important concept which is focus on difficulty in improving the service quality or controlling the service delivery standard. In this regard, the interaction between service provider's employees and customer will be crucial [7].

Lovelock and Gummesson presented another important concept in service field which is perishability. it is a multidimensional concept which focus on capacity productivity, producer's output, customer performance point of view and the service output that experienced by customers [8].

Customer Involvement is also another important concept which introduced by Ennew and Binks [9], it is the involvement of customers in service process. it differentiated them from tangible products.

Shostack mentioned that there are very few pure products

or service. Mostly, there is the mixture of both product and service in the market. it is famous as product service system [10]. Product service system defined by Mont as *"a system of products, services, supporting network, infrastructure that is designed to be competitive, satisfy customers' needs and have a lower environment impact than traditional business model"* [11]. product service system consists of tangible product and intangible services which can fulfill specific customers' needs [12].

Different authors like Clark et al., Johnson and Clark and Goldstein et al. [3] defined service concepts as *"Service operation: the way in which the service is delivered, Service experience: the customer's direct experience of the service, Service outcome: the benefits and results of the service for the customer and Value of the service: the benefits the customer perceives as inherent in the service weighted against the cost of the service"*. these researchers defined service concepts based on meeting customers' expectations by a service provider firm.

Molecular Modelling Approach; based on Shostack description, Molecular model considered an offer or an entity as a possible combination of (1) Product Elements, the physical part of the offer (2) Service Elements, non-physical part (3) Service Evidences, physical objects that facilitate the Service Elements of the offer to complete the supposed functions.

Table 2 illustrate the elements of an offer or entity in details [2].

**Table 2.** List of Elements composed an offer or entity in Molecular Modelling.

Elements	Descriptions
1. Product Elements	Physical part of the entity which will be purchased and/or used by the customers
2. Service Elements	Non-physical part of the entity which will be purchased and/or used by the customers
3. Service Evidences	Physical objects that accompanied a service to identify its existence or its completion. There two types of Service Evidence including peripheral evidences and Essential Evidence
3.1. Peripheral Evidences	Physical objects that will be purchased along with the whole entity by the customers, yet it has little or no independent value
3.2. Essential Evidences	Physical objects that won't be possessed by the customers, but adding lots of value to the entity, without which the entity might not be able to provide benefits to customers

### 4.2. New Product, Service or Offer Development Models

New Product Development (NPD); To select new product development model, it is highly recommended to firms to have alignment between NPD strategy and their corporate strategies and internal capabilities [13]. because there is no single NPD strategy which can used for all firms with all market situation. So, as illustrated in table 3, many NPD's approaches have been developed to create general NPD framework. It can help firms to be succeed their new product development [14].

New Service Development (NSD); Product and service are not like each other, So, the process of NPD should be different with NSD. Therefore, some company tried to adopt development models of to develop the service. Alam and Perry [15] introduced a 10-stage service development process (Table 4). As we can see all stages can be flexibly adopted according to the time to market situation of the firms. As shown in column number 2 of table 4, the sequence 10 stage model is suitable for the large account (LA) firms, but

concurrent model is fit to small or medium sized firms. Although it is also recommended to the LA firms whom speeding of process is crucial for them.

In this model, there are checklists of customer involvement at various stages. The customer's inputs into the service development process create many advantages which are; superior quality, customer value-matched services, and reducing the development time.

*Table 3. Product Development Approaches.*

New Product Development	Description
Departmental stage model	This method involves many departments in a sequent order meaning a functional department will only pass the tasks to the next department only when they finish their duty. The control of the product keeps changing as the product is passed through the department.
Activity stage model	It is similar to departmental stage model just that all departments will take part in whole life cycle process not just a segment of period, but the level of involvement of each department fluctuates across the development cycle process according the relevant level.
Cross functional model	Project-based concept is starting from this model. The model works in a way that a project team is specifically formed with representatives from relevant department. This prevents prolonging the development process as the work will pass within the project team only, not across departments.
Decision stage model	This model regards product development process as a series of decisions to be taken to progress the project.
Conversion process model	Interestingly, this model works in a way of input and output meaning a series of input should be put in to a black-box in order to produce results, which is product.
Response model	The key message of this model is its focus on the behaviour of the organization or individuals to a new project proposal.
Network model	The model views development process as process of knowledge accumulation at the very beginning to the last stage. The sources of knowledge are both internal and external of the organization. It is believed that the knowledge formed from those sources contributes to the development process.

*Table 4. Sequential and parallel 10-stage new service development process.*

Stages of the development process	Sequential	Concurrent
1. Strategic planning	Sequential	Parallel
2. Idea Generation	Sequential	
3. Idea Screening	Sequential	Parallel
4. Business analysis	Sequential	
5. Formation of cross-functional team	Sequential	Sequential
6. Service design and process/system design	Sequential	
7. Personnel Training	Sequential	Parallel
8. Service testing and pilot run	Sequential	
9. Test marketing	Sequential	Sequential
10. Commercialization	Sequential	

New Offer Development; Offer is a holistic term which include product or service. Developing new offer means developing new product or service which is new to the firm [16]. Implementing new development process is a strategic decision for each company. because it can helpful for this company to create new competitive advantage in the market like creating capability to manufacture or develop a new offer at lower cost, reducing time to market, ability to position in suitable market position before its competitors, and higher product or service quality (higher offer quality). Therefore, in 2000, Johnson defined new offer development process [17]. Then, the main management focuses have become on new offer development in many firms. They do that because in the mature competitive environment they should differentiate themselves from their competitors by nonstop presenting novel offers to the market.

Summery; we tried to review the product and service system and its development process based on existing sources. we focused on two main concepts which are Molecular Modelling Approach and Stage-gate model.

Molecular Modelling Approach was chosen as a model to analyze and evaluate the compositions of MCI's offers because understanding well its components can be helpful for MCI to put right focuses on the crucial elements during innovation process. Also, Stage-gate model was chosen to offer development model for MCI because it is very adopted to telecom sector such mobile operators.

## 5. Discuss and Analysis

For answering to research questions, in this section, first we discuss about existing MCI's offer development model to figure out its flow, structure, administration policy and internal communication of involved people within development process. Then, we analyze and present the strengths and weaknesses which MCI is facing in the offer development process. Finally, some recommendations and implications about improvement on new offer development speed will be suggested to MCI.

### 5.1. Description of the MCI's Product/Service

As we mentioned before, this study focused only on the offers in MCI which is the mixture of product and service. we are going to break down the compositions to visualize all components built up an offer. this approach makes enough benefits because theoretically we can identify the important components that should be more considerable during development process.

As mentioned before, Molecular Modelling useful to show the structure or relationship of all components of an entity or offer which is typically complex. It included of two primary elements and a set of physical objects. Primary elements are Product Elements and Service Elements. but physical objects are Service Evidences which are showing the existence and completion of Service Elements.

In this regard, MCI's offers will be mapped against this model in next steps.

#### 5.1.1. Mapping MCI's Offer Against Molecular Modelling Approach Molecular

Product Element; The physical objects which owned by the customers is product element. for example, in MCI, the SIM card (Subscriber Identity Module) and mobile handset and mBB devices (mobile Broad Band) are the product elements.

Service Element; The non-physical elements which have

experienced by the customers. In MCI, there are three kinds of service elements which are; Core Service Element (CS), Supplementary Services and Customer Support Service Element (CSS). for example, core service elements in MCI included services like; Voice, SMS (Short Message Service) and internet services. Supplementary services like; Missed Call Alert, Call forward and Call barring. On the other hand, Call center, MCI flagship shops, portal and billing are the customer support services of MCI.

Service Evidence; Physical forms of service is service evidence. There are two kinds of service evidences which are; peripheral and essential evidences.

- a. Peripheral Evidences: Physical objects which has no independent value but can generate value with the whole offer which presented to the customers. for example, in MCI, invoices and product manual or operational guides are peripheral evidences.
- b. Essential Evidences: Physical objects which fundamentally can create offer. without this kind of service evidences any offer cannot be provided to customers. these essential evidences cannot be owned by customer upon purchasing the offer, but are very essential in successful service provisioning. For example, in MCI, network infrastructure, applications, call center, marketing business rules and operating support system (OSS) are the essential evidences.

The composition of MCI's offer illustrated in Table 5.

*Table 5. Composition MCI's Offer.*

Elements of an Offer		Examples in MCI
Product Elements		SIM cards, Handsets and mBB devices like routers, MiFis, dongles
Service Elements	Core Service	Voice, SMS and Data (mobile internet service)
	Supplementary Service	Missed Call Alert, Call forward, Call barring,
	Customer Support Service	Call center, MCI flagship shops, portal and billing
Service Evidences	Peripheral Evidences	invoices and product manual or operational guides
	Essential Evidences	network infrastructure, applications, call center, marketing business rules and operating support system (OSS)

#### 5.1.2. Overview of New Offer Development Process

Offer development in MCI included idea generation to commercial launch. "Stage-gate" is adopted as MCI's Offer development model. This theoretical model consists of four main stages with four gates;

- a. Concept and feasibility
- b. Design
- c. Development and deployment
- d. Commercialization

Table 6 shown existing New offer development process based on Alam and Perry [18] theoretical framework.

*Table 6. MCI's new offer development process.*

Gates	Main stages	Documents	Activities
1	Concept and feasibility	Idea Map Three documents will be generated;	All idea which can be used for meeting customer needs will be documented
2	Design	a. Business case b. Technical specification c. Launch document	The best idea which can generate more revenue, feasible to implement and no legal or regulatory issue will be selected
3.1	Development	Technical specification Two documents will be generated;	Offer technically will be implemented in IT or Network system
3.2	Deployment	ATP: Acceptance Test UAT: User Acceptance Test	Internally and customer point of view offer will be tested
4	Commercial launch	Launch document	All touch point will be informed about offer attribute and the advertisement will be started

## 5.2. Analysis and Recommendations

In previous section, all MCI's Product and Service Elements and Service Evidences were explained. In this section, the proportion of Product Elements and Services Elements will be presented. It is necessary to have gap analysis about offer development of MCI to recognize the weak point focus areas. In order to have gap analysis, more than 39 offer development related personals had participated in semi-structured interview. these interviews have been done by ADL consultant company. the main problem which is recognized during interviews is that the departments who responsible to develop offers don't have clear job description and processes. it means there is no clear RACI matrix (Responsible, Accountable, Consultant and Inform). Unfortunately, most of offer development in MCI were happened with ad hoc situation and for each offer the top managers select a product manager. Therefore, based on experience and good relationship of product manager, the Time to Market (TTM) of offer will be variable. We highly recommended to MCI to use the standard offer development process with standard organization and clear job disruption.

The result of these interviews shown in Table 7.

AS we can see in the Table 7, the biggest satisfaction weak point related to offer Evaluation and Purchase step. Therefore, in concept (idea generation) stage of offer development the customer needs like Point of sales reach, point of sales service level, Product and service attribute and pricing, buying process, Device portfolio (SIM, Handset,...), Personalization/ premium service and Omnichannel experience should be considered. The second weak point is Customer Service Support. It means MCI shouldn't be focus on new offer development and there is some necessary need to focus on after sales support services like Customer service center reach, Effectiveness of support, CRM agility and Digital channels (Web, social, chat, ...).

As we can see in table 7, the strength of MCI in offer development are in payment service and offer used by customer. it means MCI is powerful in essential service evidence like network infrastructure, applications, and operating support system (OSS). Also, MCI is powerful in some service elements like payment methods and bill accuracy.

*Table 7. Influential aspects on Customer Satisfaction of MCI.*

Level of Importance	Influent aspect	Dimension Items	Gap Analysis		
			Expectation	Perceived	Gap score
12%	Offer Discovery by MCI	a. Brand power b. Communication influence c. Product information accessibility	4.2	3.9	-0.3
33%	Offer Evaluation and Purchase by customer	a. Point of sales reach b. Point of sales service level c. Product and service attribute and pricing d. Buying process e. Device portfolio (SIM, Handset,...) f. Omnichannel experience g. Personalization/ premium service	4.6	2.9	-1.7
11%	Offer Use by customer	a. Activation and ease of use b. Education clarity c. Use of voice service d. Use of SMS service e. Use of internet service f. Promotions relevance	4.1	3.5	-0.6
8%	Payment service	a. Recharging reach b. Recharging methods c. Billing accuracy d. Billing and payment process	4.7	4.2	-0.5
14%	Manage service by MCI	a. Service Level Agreement (SLA) with customers b. Bill shock prevention service c. Ease of getting information	4.1	3.4	-0.7
22%	Customer Service Support by MCI	a. Customer service center reach b. Effectiveness of support c. CRM agility d. Digital channels (Web, social, chat, ...)	4.9	3.8	-1.1

## 6. Conclusion

We evaluated the MCI offer development Based on Molecular Modelling Approach and we find that the main problems which increase the Time to Market (TTM) of MCI are unclear job description and standard deviation in offer

development processes. Then based on Alam and Perry theoretical framework, the steps of MCI's offer development evaluated. The weak point and strength of MCI in offer development are;

### a. The biggest weak points;

1. Offer Evaluation and Purchase: In concept (idea generation) stage of offer development the customer

needs like Point of sales reach, point of sales service level, Product and service attribute and pricing, buying process, Device portfolio (SIM, Handset,...), Personalization/ premium service and Omnichannel experience should be considered.

2. Customer Service Support: It means MCI shouldn't be focus on new offer development and there is some necessary need to focus on after sales support services like Customer service center reach, Effectiveness of support, CRM agility and Digital channels (Web, social, chat, ...).

#### **b. The biggest Strengths;**

1. Payment service: It means MCI is powerful in essential service evidence like network infrastructure, applications, and operating support system (OSS).
2. Offer used by customer: MCI is powerful in some Service Elements like payment methods and bill accuracy.

We highly recommended to MCI to use the standard offer development process with standard organization and clear job disruption.

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