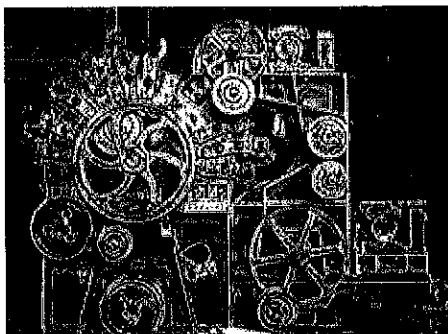


Competitiveness: Business Models, Innovations, and Systems



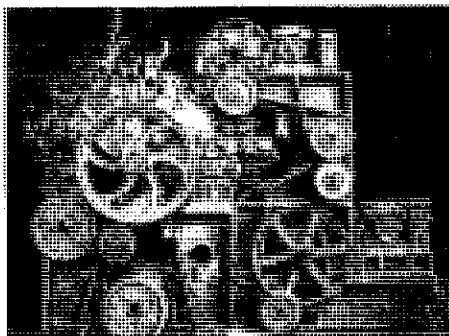
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1 Business models, customer needs and innovation management: Proposal of a conceptual process for competitive improvement

Juan Mejia-Trejo, Jose Sanchez-Gutierrez, Guillermo Vazquez-Avila, and Elsa Georgina Gonzalez-Uribe

INTRODUCTION

The purpose of this paper is to describe, through a documented study, the elements that drive the relationship between a business model and customer needs, taking into account innovation, as well as the way they are managed, with the objective to provide organizations with a differentiation tool for improving their competitive position. This study is divided into three sections: 1) approach of the issue, objectives, hypothesis, research questions and a justification, by which one evaluates the scope of the research; 2) theoretical framework, which summarizes a business model concepts, needs and stimuli for customers' purchases with innovation management, as well as a proposal for a conceptual process model; 3) and a discussion and a summary of obtained results.

CONTEXTUAL REFERENCE

The Oslo Manual (OCDE, 2005) in paragraph 12 refers to the importance of marketing (selling) methods that have a significant role in a company. They are an important factor in the success of new products. Market studies and customer contact play a critical role in the development of products and processes through the innovation introduced by the demand. The Global Innovation Index report (INSEAD, 2012, p. xix) places Mexico in 79th place out of 141. Although the country has great growth aspirations for becoming the 7th worldwide economy in 2020 (Milenio website, 2012), it has not managed to hold a sustainable position in the index (vs. rank 81/125, INSEAD, 2011, p. xix; rank 69/132 INSEAD, 2010, p.14; rank 62/130, INSEAD, 2009, p.13; place 37/107, INSEAD 2007, p. 27). This circumstance is reflected in its competitiveness level which is ranked 58/142, according to *The Global Competitiveness Report 2011-2012* (World Economic Forum website, 2012). Based on the above, the problem is expressed through a general question (GQ): What is the process proposal that relates a business model, customer needs and innovation management to improve business competitiveness?

OBJECTIVES

General Objective (GO): To determine a process proposal that relates the business model, customer needs and innovation management to improve business competitiveness.

Specific Objective 1 (SO1): To describe the main elements that are involved in the proposal that relates the business model, customer needs and innovation management to improve business competitiveness.

Specific Objective 2 (SO2): To determine a general conceptual model *ex ante* of the process that entails a relationship with the business model, customer needs and innovation management to improve business competitiveness.

HYPOTHESIS

General Hypothesis (GH): Based on a documented study, it is possible to determine a general conceptual model *ex ante* of a process that relates a business model, customer needs and innovation management to improve business competitiveness.

RESEARCH QUESTIONS

Question 1 (Q1): What is the description of the main elements that are involved in the process that relates a business model, customer needs and innovation management to improve business competitiveness?

Question 2 (Q2): What is the general conceptual model *ex ante* of the main elements that are involved in the process that relates a business model, customer needs and innovation management to improve business competitiveness?

RATIONALE

OCDE (2009, p.25) indicates that inventions or development of products and/or processes, which are protected by patents, increase the dynamic efficiency of the economy by fostering innovation and, at the same time, growth and value creation. The WIPO report (2012, p.17) shows that Mexico, up to 2010, has contributed 0.7% of all worldwide patents (US: 24.8%; China: 19.8%; Japan: 17.4%; European Union: 7.6%; Germany: 3.0%; Brazil: 1.1%, among others). Requests for patents, trademarks and utility models (OMPI website, 2012) generated in 2010 in the U.S. number 420,815; 710,601; 80,454. In comparison, Mexico had 1,591; 78,999; 2,154, respectively. Therefore, this study is needed, since our country shows very low levels of systematic use of innovation. Refer to Table 1.1.

The social relevance of this study is based on the fact that the industry lacks a systematic process that allows aligning a value proposal of a business model with customer needs and product features based on the IMT.¹ The theoretical value of the study is based on the documented review of state of the art knowledge in relation to a business model, value proposal, customer needs and purchase stimuli with the product's features in order to apply IMT. Additionally, it proposes actions related to product-market matrices, as well as its competitive positioning based on environmental

¹ Innovation Management Tools (IMT)

considerations, yielding a comprehensive proposal for a wide enhancement of a general model, thus becoming a platform for generating additional lines of study. The employed methodology approach aims to identify, organize and combine data to obtain a practical tool that can be used by management and/or directors.

Table 1.1 Large-Scale Establishments, by Sector which Develop and/or Implement Actions Related to New Product Creation by Establishment Size, 2003

Sector	The establishment has a department, which is, totally or partially, dedicated to the design or creation of new products or processes		It invests in the creation of new products, materials, devices or components		It registers products and other works of intellectual creation with the intellectual property institutions		It has full-time qualified staff dedicated to innovation of products, materials, devices, components or processes		Total
	Yes	No	Yes	No	Yes	No	Yes	No	
Manufacturing	6 155	13 111	6 600	12 666	1 738	17 528	6 686	12 580	19 266
Business	14 093	64 491	11 052	67 532	3 660	74 924	0	0	75 584
Services	7 826	32 816	7 334	33 308	1 946	38 696	0	0	40 642

Source: INEGI website, 2003

THEORETICAL FRAMEWORK

The study analyzes concepts like competitiveness, marketing and customer behavior, as well as innovation for the purpose of finding common points which would allow determination and description of the main variables, thus proposing a general conceptual model *ex ante* of their involvement in innovation management.

Business Model

In order to create, deliver and capture value, Osterwalder and Pigneur (2010) propose a model called *Business Model Generation*, which consists of 9 units: (1) customer follow-up with target, niche, segmented, diversified and multi-platform; (2) added value proposal with innovation, performance, personalization, design, brand status, price, cost and risk reduction, accessibility, convenience, usability; (3) channels, such as own, partner, direct, indirect; (4) customer relationships, with personal assistance or customized support, staff support, self-service, automated services, communities, value co-creation, (5) income stream, with asset sales, subscription fees, loans, rent, advertising; (6) key resources based on the physical, intellectual, human, financial aspects; (7) key activities, such as production, problem resolution, platform/network; (8) key partners, with optimization/economies of scale, reduction of risk and uncertainty,

acquisition of key resources and activities; (9) and cost structure, with cost and value drivers, fixed costs, variable costs. On the other hand, special emphasis is made on focusing the business on the customer and not on the market, thus defining the mission (what does the company do) around the business: What does it do?; Who does it serve?; And how does it serve? (Hill & Jones, 2011, p.14); the vision (future state of desired business); and the values (behavior of management and employees), which suggests that they are subject to continuous review as they are considered a source of competitive advantage (Hill & Jones, 2011, p.16).

Proposal of Added Value

Bonel et al. (2003) define value as a set of goods of economic or any other nature (power or prestige) sought after by the owners and managers of an organization, as well as the products, services and solutions offered by an organization to its customers at any given moment and all elements that allow an organization to continue evolving and adjusting to the needs of its environment and its customers, identifying different agents that are benefiting from it. Refer to Table 1.2.

Table 1.2 Beneficiaries of Value Creation

Value Creation for:	Description
The Customers	This is a process of value creation process through marketing strategies, supported by the quality assurance policies, aimed to capture and to maintain customers, creating high expectations of value and providing a high satisfaction level. This type of customer-oriented value creation should be focused on increasing short to medium term shareholder value.
The Shareholders	A final and a crucial approach to company evaluation. It is carried out through the distribution of dividends among the shareholders or by increasing the value of shares or invested capital. Any other approach to value creation must be aimed at creation of value for the shareholders.
The Organization and/or the Company	A planned adjustment of internal processes of the organization (technical and human resources). The capacity to adjust is obtained for the sake of ongoing implementation of continuous improvement of processes, systems and policies. From the market perspective, the objective is to anticipate a change in the conditions before the competition, for the purposes of increasing the presence and intending to consolidate the leadership on the market. From the organization's perspective, the objective is to ensure that it is prepared to face the processes of change required by the market before the competition and to transform such capacity into a competitive advantage into strength.
The Sector	Organizations and companies are not isolated entities - they are grouped into economic activity sectors, the analysis of which may show the maturity level of corresponding markets and the underlying solutions.
The Society	Society is considered a new player in the value creation process. It is complementary to customer value creation and should be considered as a positive or negative feedback, depending on whether customer value creation is detrimental or beneficial for the rest of the society.

Source: Bonel et al. (2003) with our own adaptation

White and Bruton (2011) refer to value as a process in changing stages. Refer to Table 1.3.

The proposal of added value is one of the basic components in the creation of a business model and is a task attributable to the managers, since it is the conception of how to incorporate company strategies in a coherent way in order to achieve competitive advantages with profitability and generation of higher returns (Hill & Jones, 2011, p6).

Table 1.3 Value Processes

Value process	Driving Force	Operational Measurement	Financial Measurement
Creation	Innovation, New Venture, Risk-taking	Research and Development, Investment, New Markets	Sales and Profit Growth, Moderate Return
Adoption	Imitation, Reassignment - Acquisition of Resources	Products and Geographical Coverage	Growth, Increase and High Return
Protection	Barriers, Market Power	Market Participation, Efficiency	High and sStable Return
Destruction	Competition, Abandonment, Game	Investment Cuts, Loss of Participation, Extreme Action	Decline, Various Discharge Results

Source: White and Bruton (2011, p. 327)

Customer Needs

In order to determine customer needs, different criteria have been created in order to identify them, as well as the generated desires and purchase stimuli which affect customer behavior. A summary of principal models is provided in Table 1.4.

Table 1.4 Customer Behavior Models

Model	Description
Economical	Customers follow the maximum utility principle based on the marginal decrease of utility. The customer wants to spend as little as possible in order to obtain maximum benefits. This is based on the <i>Price Effect</i> : The lesser the price, the bigger will be the purchased amount. <i>Substitution Effect</i> : the lesser the price of a substitution product, the smaller will be the utility of the original purchased product. <i>Income Effect</i> : The greater generated income or amount of available money, the greater will be the purchased amount. According to behavior scientists, this model is not complete, since it assumes that the market is homogeneous, that buyers have similar behaviors and they are only focused on the product or the price. It doesn't take into account all other aspects, such as perception, motivation, learning, attitudes, personality and socio-cultural factors.
Psychological	This is based on A.H. Maslow's needs hierarchy model. At any specific moment, an individual's behavior is determined by the most urgent need at that moment. This also shows that there is a priority for needs. First, the basic needs are met and then the secondary ones. Motivational forces that stimulate the individuals to act govern the purchase and behavior process and commences with a need. It is a driving force and also a mental phenomenon. A need emerges when the individual is deprived of something and thus mental tension is created, driving the individual towards a goal-oriented behavior in order to cover the need. Once the need is satisfied, a new need appears and the process repeats. There are 5 types of needs: (1) Physiological: water, air, thirst, hunger, sex, protection, etc. (2) Safety: protection, order, stability, etc. (3) Social: friendship, sense of belonging, affection (4) Ego: prestige, status, success, respect (5) Self-realization
Pavlov's Learning	This is based on the conditioned response experiments conducted on a dog by the Russian physiologist Ivan Pavlov. Learning is defined as behavioral changes that occur in practice based on prior experience. The learning process is defined by 3 factors: (1) <i>Conditional stimuli</i> drive an action in order to fulfill a wish. (2) <i>Unconditional stimuli</i> are inherent and

	<p>arise from physiological needs, such as hunger, thirst, pain, sex, cold, etc. It is a learned response, such as an effort to obtain status or social approval. There are small stimuli that provoke the purchase, such as: (a) discharge signals and (b) non-discharge signals for a purchase; the latter influence but do not activate the purchase. In turn, they are divided into (b1) product-related signals: color, packaging, size, price, etc. (b2) information-related signals: advertising, promotion, third-party recommendations, recommendation by sales people, etc. The response is: to buy or not to buy. (3) Reinforced strengthening of the association between the unconditional stimuli and the conditional one; when a person observes a satisfying factor, just as it proves convenient to make a purchase.</p>
Entrance-Process-Exit	<p>This is a simple customer behavior model, where the entrance for the customer is the product, due to company's marketing efforts and social environment (family, reference groups, culture, social class, etc.), which influence the decision-making process. Marketing and the social aspect are the factors that establish the entrance into the customer's mind. There are 5 stages: (1) <i>Need of Recognition</i>. When a desire emerges, tension is created and a product is chosen to satisfy the need. There is also a possibility that a person may be aware about the product prior to the recognition of the need. (2) <i>Product Awareness</i> is obtained through an advertisement or the exposure in different media or through the social circle. The awareness and the need drive to the creation of interest. In some cases, the interest can also be affected, and the decision-making process is stopped or could be postponed to another moment. (3) <i>Evaluation</i> consists of obtaining more information about the product, comparing it and contrasting it with other products. This can be carried out theoretically or by performing a test. Once the evaluation is completed, customer interest increases towards making purchase or decreases, leading to cancel or to postpone it. (4) <i>Intention</i>, at this phase, the customer carries on with actions aimed for product purchase. Once the product has been acquired, it is used to fulfill the need. While it is being used, the customer becomes aware about the positive and negative features of the product. (5) Post-purchase behavior in which, after having purchased and used the product, a satisfied customer returns and repeats the purchase process. The unsatisfied customer suspends the purchase. Therefore, a marketing specialist must pay attention to the recommendations and/or complaints in order to improve the product.</p>
Sociological	<p>This refers to society. A customer is a part of society and he or she can belong to many groups in a society. These groups influence customer purchase behavior. In the first place, friends and family can have a big influence on the decision to buy. For example, a customer may belong to a political group with a different dress code. As a member of an elite organization, he or she may face different dress code requirements, thus having to buy items to match the life style of different groups.</p>
Howarth Sheth	<p>This recognizes that customer behavior is a complex process that depends on various concepts, such as learning, perception and aptitudes and consists of 4 sets of variables: (1) Entrance: based on 3 types of stimuli: (1a) significant stimuli, which are tangible physical product characteristics, such as the price, quality, distinctive appearance, services provided and product availability. (1b) Symbolic stimuli, which include the perception of significant stimuli by the individual, for example, whether the price is high or low; that is, it is different from other products, the additional services that it may have, the post-sales services and quick availability. (1c) Social stimuli, which come from the family, friends, acquaintances, social groups, etc. They are considered to be of great importance, since a customer is a social entity that adjusts to the requirements of its environment, which creates habits and customs. (2) Perception and learning constructs, which are psychological variables, for example, motivating factors, attitudes, perceptions, which have an influence on the decision-making process of the customer, who receives the stimuli and interprets them. There are two factors that influence this interpretation: ambiguous stimuli and perceptual prejudice. The first one occurs when a customer cannot fully interpret or understand the significance of received stimuli and does not know how to respond. The second one occurs when an individual distorts the information in accordance with his or her needs and experiences. (3) Exits, where we refer to the decision to buy. After the purchase there can be satisfaction or dissatisfaction. Satisfaction brings a positive attitude and entails brand expansion. Dissatisfaction brings about a negative attitude. (4) Exogenous or external variables. They are not shown in the model and do not have a direct influence on the decision-making process; they influence the customer indirectly and vary</p>

	from one customer to another; they depend on the traits of each individual, such as their personality, social class, the importance of acquisition and the financial situation.
Engel-Blackwell-Kollat	This consists of 4 components: (1) Information processing, which consists of exposition, attention, understanding and retention of marketing and non-selling stimuli. In order to obtain successful sales, the customer must be adequately selected and be repeatedly exposed to the message. Customer's attention must be captured, so that he or she understands and retains what is being transmitted. (2) Central Control Unit, where the stimuli are processed and interpreted by the individual. There are 4 psychological factors. (2a) stored information and past experience with the product, which serves as a standard for comparison with other products or brands. (2b) evaluation criteria, which are personal. (2c) attitudes or moods that change every once in a while and help with product selection. (2d) customer personality, which serves as a guideline for making a choice. (3) Decision-making, based on the approach to the issue, internal-external search, evaluation and purchase. Satisfactory and non-satisfactory experience is taken into account for future decisions. (4) Environmental factors consist of: income level, social class, family influence, physical influence and other considerations.
Family Decision	It is important to understand how family members interact among themselves when making a purchase decision. There are different roles, such as: (1) The <i>Influencer</i> participates in the decision to buy by means of providing information. (2) The <i>Observer</i> is a family member who controls the information flow about a product or a brand that they like, and withholds the information that is not of interest to them. (3) The <i>Decider</i> is the one with the power or money and the authority to purchase. (4) The <i>Purchaser</i> is the one who really makes a purchase. (5) The <i>Preparer</i> prepares the product for the final consumption. (6) The <i>Users</i> are those who use or consume the product, individually or jointly. The roles played by family members may differ depending on the product and the same family member can play various roles at the same time.
Nicosia	This is maintained through 4 fields and sub-fields: field 1 consists of sub-fields 1 and 2. Sub-field 2 is the <i>Customer Predisposition</i> , whose characteristics and attributes are affected by the messages and information from the environment, yielding an adoption of attitudes by the customer. Field 2 is the <i>Pre-action</i> , where the customer investigates, evaluates and gets motivated to buy the product. Field 3 is the <i>Decision to Buy</i> . Field 4 is <i>Post-purchase</i> , when the product is consumed, used or stored. Feedback from Field 4 goes towards Field 1 or <i>Company Attributes</i> where the experience can change the decision to buy and the attitude towards the consumption. This model is considered a comprehensive one, since it covers the build-up of attitudes, product purchase and use, as well as the post-sales behavior.
Industrial Purchase Behavior	This corresponds to a complex world of inter-relations at industrial level. There are 3 significant characteristics: (1) Different involved areas with various interests. (2) Conditions that lead to decision-making. (3) Differences in opinion and conflicts due to purchasing decisions. Therefore, various expectations related to product purchase arise, such as product quality, delivery time, quality of the offer, service, post-sales and price. These are known as the explicit objectives. There are other objectives, such as provider's reputation, credit conditions, provider location, relationship with the provider, technical competence and even the seller's personality, abilities and lifestyle. These are known as the implicit objectives. Thus, it shows the ability to resolve conflicts of different origin and intensity.

Source: Khan (2006, pp.174-187)

Market Analysis

The website of the Spanish Royal Academy Dictionary (DRAE, 2012) contains the following information about the word market: from the Latin, *mercātus*: 1. m. Public procurement in a location specified for these purposes on the agreed-upon days. Main practices of market identification are provided in Table 1.5.

Once the market segment is identified, demand size is measured by (Loudon et al., 2005, pp. 50-54): (1) market factors, which explain the reasons for the product-consumption relationship and its future. Their impact depends on the analysis of correlation or arbitrary judgment; (2) potential segment market, which appears after the following factors have been determined: segments, customer characteristics and market factors, market size, that is, expected sales in this segment, both in absolute terms (units, dollars, etc.), as well as in relative terms (percentage).

Table 1.5 Methods for Market Segment Identification

Method Type	Description
Research-based	Studies with multivariate statistical analysis are conducted in order to define customer behavior, attitudes, motivating factors and preferences.
Services of Database Systems with Existing Segmentation	Marketing experts use business and government information. This includes <i>Consumer Markets</i> (identified through Geo-demographic systems, such as Claritas PRIZM, VALS of SRI Consulting Business Intelligence of the US) and the <i>Business Markets</i> (such as NAICS or North American Industry Classification System of the US).
Expert Evaluation	Marketing knowledge and experience is applied to discover new characteristics of the existing or new markets (which have not been taken into account before due to their nature). Study criteria are established as follows: Geography, Demography, Psychographics, Purchase Behavior, Style, Culture, Customer Profile, etc. Matrices are often created to compare different data, such as Customer Profile vs. Geography, etc.

Source: Loudon et al., 2005 (pp. 27-54)

Absolute terms are calculated by using techniques, such as measurement of relative potential sales index, market factor method, regression analysis method, focusing mainly on the existing products and services. For new products and services, the following techniques are used: expert estimations and customer surveys through a substitution method. With regards to market research, the Spanish word for Marketing (Mercadotecnia) is not registered in the DRAE (2012). The definition that is provided below has a similar structure: derivative of "market (Mercado) and technique (técnica), which means 1. f. A set of principles and practices aimed for the increase of sales, especially of the demand. 2. f. Study of procedures and resources available for these purposes. Kotler and Keller (2012, p. 5) define it simply as: satisfaction of customer needs in a profitable manner. Based on appeal and profitability, Loudon et al. (2005, p.168) describe market segmentation in terms of mass, personalized mass, a single segment, multiple segments and niche, also including those based on different market conditions describing emerging, growing, mature and declining markets. It is suggested that the latter can be exploited by means of market change, product change, strategy and marketing mix change. Given that growth is the main objective of companies, two strategies are named for achieving it: (1) product/market expansion (Loudon et al., 2005, p.132), creating the matrix shown in Table 1.6 and (2) the integration strategies, which are put into practice as: (a) forward integration (b) backward integration (c) horizontal integration. Thus, a product/market study should contain: expected demand, end user

characteristics, awareness about industry practices and trends, identification of key competitors, market size, identification of growth factors, market stability or decline (Loudon et al., 2005, p. 154). Once the segment's detail is expanded, customer studies can be undertaken to discover general profiles, socio-economic, behavioral and psychological traits (Loudon et al., 2005, p.156).

Table 1.6 Product/Market Growth Matrix

MARKETS	EXISTING	PRODUCTS	
		EXISTING	NEW
	EXISTING	Market Penetration is carried out through the Adjustment of Current Purchasing Behavior, Attraction of Non-Customers, Attraction of Competitor's Customers	Product Development: New characteristics - Different levels of quality - Different Product Sizes
	NEW	Market Development: New Foreign Markets - New segments which do not use the product	Diversification: New products to new markets or acquisition of other companies that already operate in this area. It is done through: Product-Technology Relation, Market Relations, No Product No Market Relation

Source: Loudon et al., 2005 (p.133), our own adaptation

Product/Service Attributes

The result of detecting customer needs and purchase stimuli is reflected in the design of attributes delivered to a customer by the product, such as form, characteristics, performance, duration, trustworthiness, style, and by the service, such as ease of placing an order, delivery, installation, customer's training and consulting, repair and maintenance, along with the desired personnel qualities, such as competence, courtesy, credibility, trustworthiness, response capacity, communication, amongst others (Hill & Jones, 2011, p.129).

Competitiveness

According to the DRAE (2012), the word "competitiveness" has the following meaning: 1. f. A capacity to compete 2. f. Rivalry for the purposes of reaching a goal. Therefore, it is important that a company generates a sustained competitive advantage (Hill & Jones, 2011, p.74) when it manages to obtain an above-average profitability during several years. Company success or failure is determined by the competition (Porter, 2005, p.1). Therefore, target market and objective are the main factors in the competitive analysis aimed to determine whether an innovation proposal has commercially viable tendencies.

Strategic Competitive Market Analysis

In order to create a tool that is capable of identifying a company's competitive position, as well as its competitors on the market, it is suggested that the techniques named by David (2009), Hill and Jones (2011), Rowe et al. (1982), Lancaster and Massingham (2011), Gallardo (2012) and Hernández and Sánchez (2005) are used, as summarized in Table 1.7.

	<p>focused on improving the weaknesses in order to take advantage of the opportunities offered by the environment. At times, despite the fact that opportunities exist, weaknesses of the company preclude it from taking advantage of them. ST use company's strengths for avoiding or reducing the impact of the weaknesses from the environment. Companies that copy ideas, innovations and patented products are a big threat in any industry. WT use defensive tactics aimed at reducing weaknesses and avoiding external threats.</p>
<p>Internal External Matrix (IEM)</p>	<p>Based on prior matrices: IFE (X axis) and EFE (Y axis). It is carried out in 4 steps: (1) take the weighted totals from IFE; (2) take the weighted totals from EFE; (3) identify the square where the company belongs; (4) identify the square where the company belongs. Within the IE matrix, the weighted total, from IFE or EFE, must be analyzed in the following way: between 1.0 and 1.99 it represents a weak internal position. A rating between 2.0 and 2.99 can be considered an intermediate position, and the rating between 3.0 and 4.0 is a strong position. Create 9 squares with different types of strategic action, such as: cell I, II and IV Growing and Building with intensive strategies (market penetration, market development or product development); integrative strategies (backward integration, forward integration and horizontal integration); cells III, V and VII Preserving and maintaining with penetration strategies in the market, product development; cells VI, VIII and IX reaping and withdrawing with entrenchment, disposal or investment withdrawal strategies.</p>
<p>Grand Strategy Matrix (GSM)</p>	<p>This serves as an alternative strategy formulation, it has 4 squares: X axis has the company's competitive position; Y axis has the market growth speed. Strategies proposed for the companies in Square I (strong competitive position vs. rapid market growth) are as follows: market development, market penetration, product development, forward / backward / horizontal integration and concentric diversification. Strategies proposed for the companies in Square II (weak competitive position vs. rapid market growth) are as follows: market development, market penetration, product development, horizontal integration, investment withdrawal and liquidation. Strategies proposed for the companies in Square III (weak competitive position vs. slow market growth) are as follows: entrenchment; concentric diversification/ horizontal/ in conglomerate; investment withdrawal and liquidation. Strategies proposed for the companies in Square IV (strong competitive position vs. slow market growth) are as follows: concentric /horizontal/conglomerate diversification, shared-risk companies.</p>
<p>Strategic Position and Action Evaluation (SPACE).</p>	<p>Indicates if a strategy is to be adopted, such as aggressive, conservative, defensive or competitive; the axes represent internal and external factors. Internal factors that have to be taken into consideration are as follows: company's financial strength or fortitude, which is labeled FS in the matrix; company's competitive advantage (CA), external factors that have to be taken into consideration are as follows: the stability of the environment surrounding the company (ES), strength or fortitude of the industry, represented in the matrix by SI. It is carried out in 5 steps: selecting variables; rating variables; obtaining totals; defining axes points; charting a vector. A set of variables should be selected, including: Financial strength (FS), competitive advantage (CA), environment stability (ES) and strength of the industry (SI). Rowe et al. (1982, pp. 155-156) suggest considering for FS: investment performance, leverage, liquidity, working capital, cash flow, easy market exit, implicit business risks; for ES: technological changes, inflation rate, variability of demand, competitors price scale, market entrance barriers, competitive pressure, demand elasticity; for CA: market participation, product quality, product life cycle, customer loyalty, use of competitors' capacity, technological knowledge, control over providers and distributors. Lastly, for SI: growth potential, utility potential, financial stability, technical knowledge, taking advantage of resources, capital intensity, ease of market entry, productivity and capacity utilization. Subsequently a numeric value should be assigned to each variable in the FS and SI dimensions, ranging from +1(the worst) to +6 (the best.) Afterwards, a numeric value should be assigned to each variable in the CA and ES dimensions, ranging from -1(the best) to -6 (the worst). A weighted average value of FS, CA, ES and SI is then calculated. Values assigned to the variables at each dimension are added, and they are divided by the number of variables included in the dimension. Average value is obtained for each dimension. The point on the X axis equals to the results obtained by adding FS and EA. The point on the Y axis equals to the results obtained by adding SI and CA. ES and CA results are usually negative. Draw a directional vector from the origin of SPACE vector through a new point of the intersection. This vector reveals the type of</p>

	recommended strategy for the organization: aggressive, competitive, defensive or conservative. Aggressive strategy square: market penetration or development, product development, backwards, forward, horizontal integration, diversifications in conglomerates, horizontal or combined strategies are recommendable. Defensive strategy square: it suggests that a company must focus on getting over its weaknesses and avoiding the threats: entrenchment, withdrawal of investments, liquidation and concentric diversification. Competitive strategy square: backward, forward and horizontal integration, penetration, market development, product development and shared-risk companies. It has 4 squares: Square I industrial strength vs. financial strength (FS), suggests the action type: aggressive; Square II competitive advantage vs. financial Strength (FS), suggests the action type: Conservative. If Square III is used, competitive advantage vs. environmental stability, the strategic profile is defensive strategy. If Square IV is used, industrial strength vs. environmental stability, the action is: competitive.
Quantitative Strategic Planning Matrix (QSPM)	Allows the objective evaluation of alternative strategies. It is carried out in 6 steps: listing factors, defining weights, indicating the strategies to review, grading appeals, calculating totals, prioritizing strategies. This is done in the following manner: Consider the strengths, weaknesses, opportunities and threats defined in SWOT. Assign to each factor the weights defined in IFE and EFE. Review the strategies defined in SWOT and evaluate them in comparison with the results of verified matrices. Select a number between 4 and 5 strategies that have a synergy with SPACE, IE and GSM. These should be listed in the upper part of the matrix. Next, the relative appeal of each strategy must be checked against each strength, weakness, threat and opportunity. Assign a rating from 1 to 4: 1= not attractive, 2= somewhat attractive, 3= quite attractive and 4= very attractive. Grading should respond to the question: "Does this factor affect strategy selection?" If the answer is "yes," then pertinent values should be assigned. If the answer is "no," then it should be left blank. Add weighted grades obtained for each alternative strategy. The bigger the grade obtained by a strategy, the more attractive it will be for the company. This approach allows prioritizing the strategies selected for the implementation.

Source: David (2009), Hill and Jones (2011), Rowe et al. (1982), Gallardo (2012) and Hernández and Sánchez (2005) with our own adaptation

Creativity and Innovation

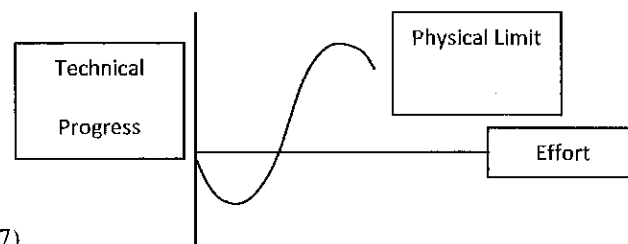
The former arises from the Latin word *creare* which means "produce," "procure." Crea Business Idea (2011, p.8) defines it as the ability for easy generation of ideas, alternatives and solutions to a certain problem. Thus, creativity represents an idea generation process and ceases to do so when such ideas are implemented into practice through innovation. According to the DRAE (2012), it stems from the Latin word *innovatio*, *-ōnis* which means: 1. f. Action and effect of innovating, and 2. f. Product creation or modification. Hill and Jones (2011, p.130) suggest that innovation is the most important source of competitive advantage, since it allows the company to: a) differentiate its products, establishing higher prices and b) reduce its cost structure more than competitors, and its market introduction. Thus, successful launches of new products and services are the principal driving factors of greater profitability (Hill & Jones, 2011, p.130) Cooper (1999) studied over 200 launches of new products and found that out of those that were considered successful, 50% had achieved over 33% return on investment, half of them had an investment recovery period of two years or less and half of them had attained a 35% market share. On the other hand, it should be taken into consideration that the majority of works on innovation are mainly based on the products, while services remain a completely different point of reference due to their particular characteristics, such as intangibility, simultaneity, expiration and homogeneity (Lovelock et al., 2004). Services have managed to dominate the economy of the 21st century, since they create three-

fourths of total wealth and over 85% of employment positions in the US and UK. Nonetheless, little is known about innovation management in this sector (Tidd & Hull, 2003). Elche (2004, p.34) argues that innovation of services is more of a social achievement attributable to teamwork than a technological one. Moreover, services contribute the most to the worldwide Gross Domestic Product (GDP) and in Mexico they correspond to 67%, according to the *World Bank: Global Economic Prospects and Developing Countries* (cited by Lovelock et al., 2004, p. 6).

Innovation Types

In the Oslo Manual (OCDE, 2005, p. 56), innovation is defined as the introduction of a new or a significantly improved product (good/service), a process involving a new marketing approach or a new organizational approach, in the internal practices of the company, workplace organization or in external relations, therefore, it does not only include the area of technology, products or services. Likewise, the Oslo Manual (OCDE, 2005, p. 377) recognizes the process of creative destruction, stated by Schumpeter, which mentions two types of innovations: radical - contributing to the significant changes in the world and progressive, which provide a constant feedback to the change process. Our attention has been brought to the model called Foster's S-curve with regard to the innovation life cycle, which explains how the results of a technology-related effort decrease as they draw closer to their limits. The limits of a given technology can be predicted if its physical limits are known by following an S-curve. Refer to Figure 1.1.

Figure 1.1 Foster's S-curve



Source: Afuah (1997)

Technical progress commences slowly, then accelerates quickly and lastly it slows down depending on the physical limits of the technology. The model's added value lies in how to predict the end of an existing technology and the arrival of technological discontinuity.

Innovation Management and Tools

This concept has been defined in various ways, being interpreted as a way of making administration braver and heterodox. The DRAE (2012) defines an administration thusly: a) Administrator in English or "administration" in Spanish (from the Latin word: *administrare*) with an ad-prefix that includes the direction, trends, proximity, contact and

ministrare which means "to govern," "to order"; b) Management in English or "gestión" in Spanish (from the Latin: *gestio, onis*), which means "action" and an effect of managing, in a courageous way. Thus, management applied to innovation can be defined by one of three activity types (Morales, 2002, cited by Ortiz & Pedroza, 2006): 1) Sporadic, with few actions or procedures which resolve a problem, usually with involvement of a single person; 2) Intermittent or those that resolve problems by using the same method or procedure or mechanic, but this can be very specialized; 3) Systemic, such as activities which stimulate pro-activeness, creativity and teamwork on a regular basis in order to obtain a new culture that encompasses a new approach of continuous improvement. The first two types are usually reactive, so under this circumstance, in light of a constantly changing environment, some action opportunities may be lost in the process. Nonetheless, systemic management does not necessarily require a problematic condition, but can be detonated from a condition that is potentially subject to analysis and improvement giving rise to its proactive character (foreseeing a better future). This concept will be used hereinafter in the study, due to its connection to innovation, for observation purposes. Refer to Table 1.8.

Table 1.8 Selected Innovation Management Tools

IMT	Description
Benchmarking (Creativity Technique CT)	A process of improvement by continuous identification, understanding and adjustment to the most appraised practices and processes within and outside of an organization.
Brainstorming (Creativity Technique CT)	Created by Alex F. Osborne (1941). It is divided into: (1) <i>Brainstorming</i> with a key word, writing the topic at the top part of the page. All generated ideas are written down, setting the imagination flow in regard to a specific subject. Ideas have to be written down quickly as a list, not worrying about the orthography or the choice of words, etc. The goal is to record the biggest number of ideas-concepts during the least possible time. (2) <i>Mental maps</i> , which thoroughly examine the ideas with different graphs associated with the ideas, (3) <i>Box of Ideas</i> , where an idea is shown with a number of attributes for the implementation of a combination of such, (4) <i>Galaxy</i> starts by writing a topic in the middle of the page/board. Ideas are written down in a circle around it and they are linked to the center with a line. The next idea is written in a circle. If it refers to the first, idea, it is linked through a line, otherwise, it is linked with the center. Each idea is a star, stars may have planets, and planets may have satellites. Thus, a galaxy of ideas is obtained.
Re-Engineering Process (RP)	A radical re-design of processes through 7 steps: (1) Organization around the results, not around tasks. (2) The process must be carried out by those who will use its results. (3) Mixing information processing tasks with the actual production of information. (4) Treating geographically dispersed results as if they were centralized. (5) Relating parallel activities in the place where their results will be integrated. (6) Making decisions at the place where the work will be carried out and establishing controls over this process (7) Registering the information only once and at the source.
Change Management	This is a process used to align company's staff members and culture with system changes, business strategy and organizational structure. It consists of 3 phases: (1) Preparation for a need to change at the entire organization, with a wide evaluation of the situation in order to quickly identify main opportunities and chances for

	success. It divides the organization in smaller groups. (2) Planning and problem resolution based on the creation of a model; development of evaluation of ideas; selection of ideas, implementation and communication. (3) Implementation with continuous monitoring of improvements.
Concurrent Engineering (CE)	It consists of a simultaneous implementation of market research, design, development and production planning for new or improved products. It consists of 7 phases: (1) Project identification. (2) Project scope. (3) Needs and analysis. (4) System design. (5) Development planning. (6) Construction. (7) Installation and evaluation.
Continuous Improvement	It considers a production process as a situation of <i>continuous work improvement</i> . It consists of 7 phases: (1) Identification of the improvement area. (2) Process evaluation (3) Analysis. (4) Action. (5) Study of the results. (6) Standardization of the solution. (7) Future planning.
Design for Manufacturing and Assembly (DFMA)	This is a design tool for <i>function X</i> (DFX). This is a systematic procedure aimed at helping the companies to take greater advantage of the existing manufacturing processes and to keep a minimum number of assembly pieces. It consists of 7 phases: (1) Design concept. (2) Assembly design. (3) Selection of materials and low cost process. (4) Concept of the Best Design. (5) Design for manufacturing. (6) Prototype. (7) Production.
Design for "X" Function (DFX)	This is one of the most effective approaches that can be put into practice for Concurrent Engineering. It consists of 7 steps: (1) Product analysis (2) Process analysis. (3) Performance measurement. (4) Comparative Benchmarking. (5) Diagnosis for improvement. (6) Advice for the introduction of change. (7) Prioritizing.
Failure Mode and Effects Analysis (FMEA)	A strong discipline of quality assurance used to identify and minimize the effects of potential problems in the design of products or processes. This technique was formalized at NASA in mid-1970s, and it was used for the first time by Ford North America in 1972. There can be various types of FMEA - related to design, processes, means or systems; its number of phases depends on the insertion type.
Rapid Prototyping (RP)	A set of sophisticated techniques, which quickly allow obtaining a prototype of physical products. Advantages: it provides techniques that substitute artisan labor. Direct connection with CAD/CAE systems. Dramatic reduction of the <i>time to market</i> . Main techniques: Stereo Lithography (SL). Selective Laser Syntering (SLS). Laminated Object Manufacturing (LOM). Fused Deposition Modeling (FDM)
Computer Aided Design (CAD)	Graphic design and computer simulation techniques, which allow for studying the behavior of products or pieces and their automated handling. They allow object modeling by means of 2-dimensional images (2D) in the horizontal plane, or 3-dimensional images (3D) by means of surface modeling (threads) or solids. This technique allows performing simulations of mechanical, thermal, dynamic and structural behavior of modeled objects (by means of analysis by the finite elements method.) Various software packages are available (AutoCAD, Pro-Engineer, CATIA) They allow subsequent connections with special machinery equipped with numeric control production tools.
Value Analysis (VA)	Organized and creative method that employs a process of functional and ergonomic design with the objective of increasing product of process value. Value concept: Need --> Function --> Product. The value is defined as: $V=F/C$. It is a quotient between product benefits or functions (F) with respect to its cost (C). It consists of 7 steps: (1) Preparation. (2) Information. (3) Analysis. (4) Innovation. (6) Evaluation. (7) Implementation.
Functional Analysis of	Identifying product functions and evaluating the benefits to be obtained. It distinguishes between user-related functions (URF) and product-related functions

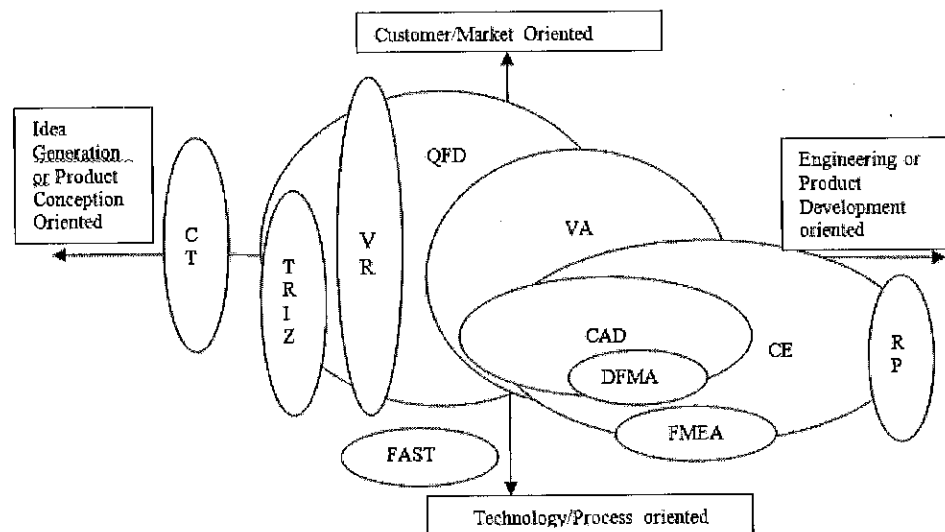
Systemic Technique (FAST)	(PRF). Functional analysis is performed in 5 phases: (1) List of functions. (2) Organization. (3) Description. (4) Hierarchic order (5) Evaluation. (6) Representation of the functional diagram (FAST) of the product or the process.
Quality Function Deployment (QFD)	This technique allows a systemic and structured introduction of the <i>Customer's voice</i> during the process of product design and development. Inter-relates the <i>What</i> (customer requirements) with the <i>How</i> (technical solutions for the satisfaction of such requirements.) Based on the use of different matrices starting off with <i>Quality House</i> .
TRIZ	Created by the Russian scientist Genrich Altshuller in 1946 in order to generate ideas and solutions for product creation by means of a so-called contradiction matrix, which consists of 39 physical phenomena which, when combined, can be resolved through 40 empirically valid technical proposals.

Source: Bakouros and Demetriadou (2004) and Mañá (2000) with our own adjustment.

Mañá (2000) allocated the main IMT for the strategy. See Figure 1.2

Based on the below, a proposal of a General Conceptual Model is created. Refer to Figure 1.3.

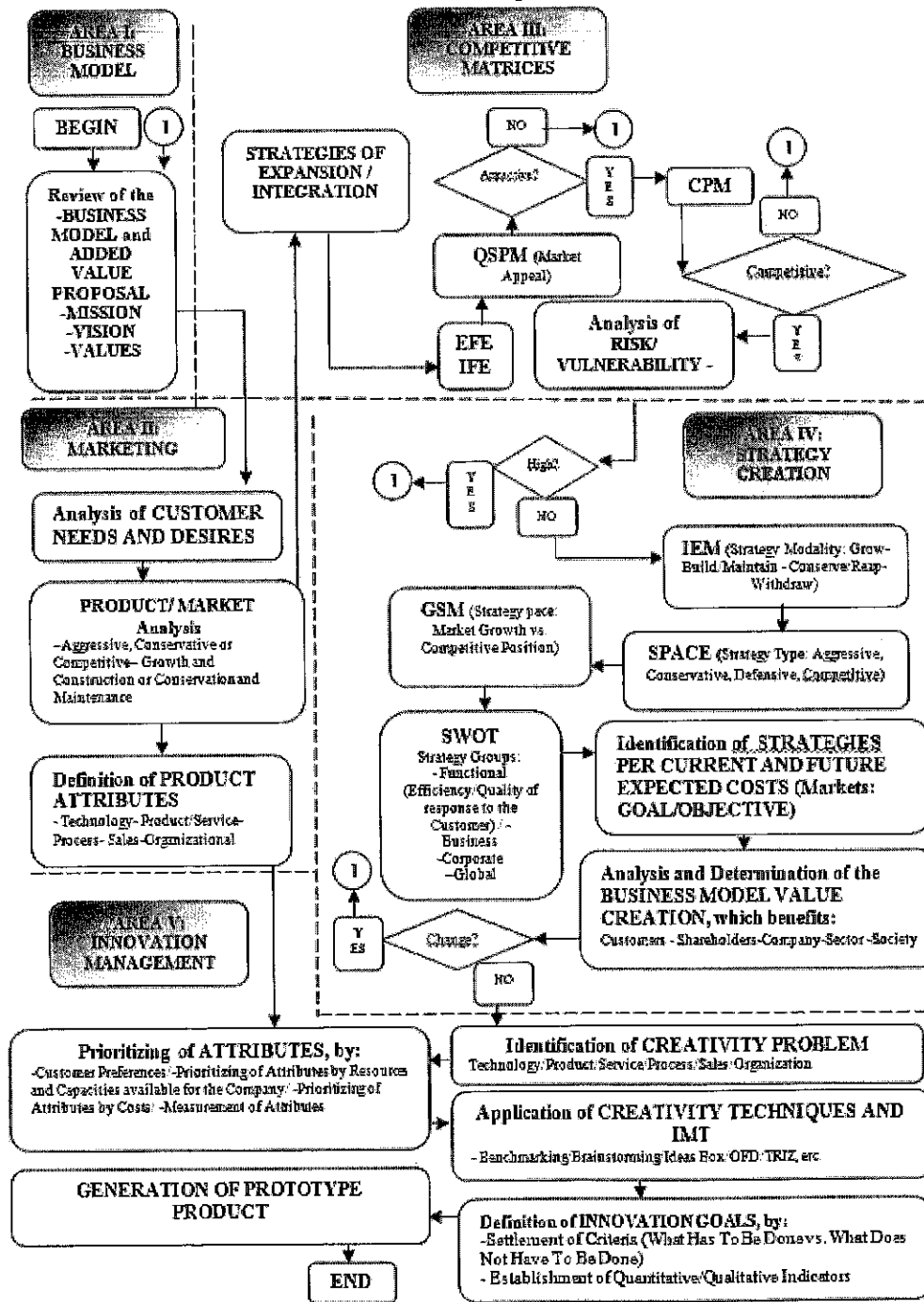
Figure 1.2 Positioning of the Main IMT in the Chain of Value



Source: Mañá (2000) with our own adaptation

RESULTS

Figure 1.3 - General Conceptual Model *ex ante* of the Process that Relates the Business Model, Customer Needs and Innovation Management for the Improvement of Business Competitiveness



DISCUSSION

The conceptual model shows specific areas of analysis and application initiated in **Area I: Business Model** (Osterwalder & Pigneur, 2010), which is subject to continuous review based on the proposal for added value, mission, vision and values. Once confirmed, **Area II: Marketing** discovers customer's needs, wishes and purchase stimuli (Khan, 2006; Table 1.4) establishing a relationship between the markets, products and actions that satisfy them, both currently and in the near future (Loudon et al., 2005; See Tables 1.5 and 1.6). Criteria are established for attributes of products and services involving tangible and intangible aspects, considered a delivery of satisfying factors (Hill & Jones, 2011) yielding a double result: the definition of a target/objective market to be analyzed, as well as customer satisfaction attributes listed in greater detail. Based on the above, we obtain the input information we need for **Area III: Competitive Matrices**, which includes *Expansion/Integration* strategies (Loudon et al., 2005) and a strategic matrix is performed (David, 2009; Hill & Jones, 2011; Rowe et al., 1982; Gallardo, 2012; Hernández & Sánchez, 2005; See Table 1.7). Such a matrix reports the external conditions of the market (EFE), its internal conditions (IFE), competitive position (MPC) and appeal (MCPE), a risk/vulnerability analysis, which provides the management with decisive elements for continuing into **Area IV: Strategy Creation**. Here, difference is made based on the main internal and external factors, defining the modality (IE) and type (SP&AE), as well as the strategy's pace (MGE). The aforementioned elements define the base for the performance of the SWOT analysis. At this level, cost analysis of current strategies and proposals must be carried out both in terms of the target market as our goal, as well as a review of the added-value proposal based on value beneficiaries (Bonel et al., 2003; see Table 1.2) and the value process (White & Bruton, 2011; See Table 1.3). If there are any signs of deviations, actions should be adjusted to match the business model and/or the added value proposal. As a result, the following is obtained: identification of innovation problem per type: technology, product/service, process, sales and organization (OCDE, 2005) with the creation of objectives and goals resulting from the SWOT. Lastly, we can advance into **Area V: Innovation management**, which by pointing out a creativity problem is subject to the application of techniques and other innovation management tools (Bakouros & Demetriadou, 2004; Mañá, 2000; See Table 1.8) prioritizing them depending on the attributes.

CONCLUSIONS

GO, as well as SO1 and SO2, were reached 100% in response to GQ, Q1 and Q2, as well as the GH. It has to be pointed out that the elements that were discovered along the process are immersed into a generalizing model, which covers solutions at a conceptual level that are to be detailed at a deeper level: technology, products, services, processes, sales and organization that are not a part of this study's scope but that contribute to the improvement of the director/manager decision-making process in order to improve competitiveness, based on the market and on the Innovation Management Tools that are available.

REFERENCES

- Afuah, A. (1997). *La dinámica de la innovación organizacional. El nuevo concepto para lograr ventajas competitivas y rentabilidad*. México: Oxford University Press.
- Bakouros, Y. L., & Demetriadou, V. (2004). *Herramientas de gestión de la innovación*. Greece: Innomat Project. European Commission under the Leonardo Da Vinci Programme. University of Thessaly.
- Bonel, J. I., Bonel, F. J., & Fontaneda, I. (2003). Aplicación del nuevo modelo estratégico de Creación de valor al análisis del éxito Empresarial del e-business. V Congreso de Ingeniería de Organización: V Congreso de Ingeniería de Organización.
- Cooper, R. G. (1999). *Product leadership*. Massachusetts, USA: Perseus Books.
- Crea Business Idea. (2011). *Manual de la creatividad empresarial*. Sudoe Ue/Eu Feer/Erdf.
- David, F. R. (2009). *Strategic management. Concepts and cases*. New Jersey: Prentice Hall.
- Diccionario de la Real Academia Española (DRAE). (2012). Portal web diccionario de la real academia española. Retrieved August 14, 2012 from Portal Real Academia Española: <http://www.rae.es/rae.html>
- Elche, M. (2004). *La innovación en los servicios: Análisis de la relación de tipo servicios-patrón de innovación y su incidencia en el resultado*. Tesis Doctoral. España: Universidad de la Mancha.
- Gallardo, R. (2012). *Administración estratégica. De la visión a la ejecución*. México, D.F.: Alfaomega.
- Rowe, R. M. (1982). *Strategic management and business policy. A methodological approach*. Massachusetts: Addison-Wesley.
- Hernández, S., & Sánchez, J. (2005). *Planeación estratégica en el sector empresarial de Jalisco: Estudio de casos*. Guadalajara, Jalisco: Centro Universitario de Ciencias Económico Administrativas. Universidad de Guadalajara.
- Hill, C. W., & Jones, G. R. (2011). *Administración estratégica un enfoque integral* (Novena ed.). México: CENGAGE Learning.
- INEGI (2003). INEGI. Retrieved August 25, 2012 from Subportal Ciencia y Tecnología; Innovación, investigación y uso de TICs (Sector Privado); Establecimientos Grandes: <http://www.inegi.org.mx/Sistemas/temasV2/Default.aspx?s=est&c=19007>
- INSEAD (2007). *Global index innovation 2007. The world's top innovators. Globalisation has pushed innovation to the top agenda, but which countries responds best to the new challenges?* USA: Caulkin, Soumitra DUTTA and Simon.
- INSEAD (2009). *The global innovation index 2008-2009. Stronger innovation linkage for global growth*. France: Institut Européen d'Administration des Affaires and Confederation of Indian Industries.

- INSEAD (2010). *The global innovation index 2009-2010*. France: Institut Européen d'Administration des Affaires and Confederation of Indian Industries.
- INSEAD (2011). *The global innovation index 2011. Accelerating growth and development*. Fontainebleau, France: Soumitra Dutta, Institut Européen d'Administration des Affaires and Confederation of Indian Industries.
- INSEAD (2012). *The global innovation index 2012. Stronger innovation linkages for global growth*. Fontainebleau, France: Soumitra Dutta, Institut Européen d'Administration des Affaires and Confederation of Indian Industries.
- Khan, M. (2006). *Consumer behaviour and advertising management*. New Delhi: New Age International Publishers.
- Kotler, P., & Keller, K. L. (2012). *Marketing management*. New Jersey: Prentice Hall.
- Lancaster, G., & Massingham, L. (2011). *Essentials of marketing management*. New York: Routledge Taylor.
- Loudon, D., Stevens, R., & Wrenn, B. (2005). *Marketing management. Text and cases*. USA: Best Business Books.
- Lovelock, C., Reynoso, J., D'Andrea, G., & Huete, L. (2004). *Administración de servicios, Estrategias de marketing, operaciones y recursos humanos*. México: Prentice-Hall.
- Mañá, F. (2000). *Herramientas y técnicas para la gestión de la innovación para la creación de valor*. Catalunya: Instituto Catalán de Tecnología.
- Milenio. (March, 12, 2012). *Será México 7a. economía mundial en 2020: Goldman Sachs*. Retrieved August 14, 2012 from Portal Milenio: http://www.google.com.mx/search?hl=es&as_q=lugar+de+mexico+en+la+economia+mundial&as_epq=&as_oq=&as_eq=&as_nlo=&as_nhi=&lr=&cr=&as_qdr=all&as_sitesearch=&as_occt=any&safe=images&as_filetype=pdf&as_rights=
- OCDE (2005). *Manual de Oslo. Guía para la recogida e interpretación de datos sobre innovación* (Volume 3). Paris: Organización de Cooperación y Desarrollo Económico (OCDE).
- OCDE (2009). *Manual de estadísticas de patentes de la OCDE*. París: Organización de Cooperación de Desarrollo Económico.
- OMPI (2012). *Organización mundial de la propiedad intelectual*. Retrieved August 12, 2012 from Perfiles estadísticos de los países: http://www.wipo.int/ipstats/es/statistics/country_profile/
- Ortiz, S., & Pedroza, A. (2006). ¿Qué es la gestión de la innovación y la tecnología (GIInnt)? *Journal of Technology Management & Innovation*, 1(2), 64.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation*. USA: John Wiley.
- Porter, M. E. (2005). *Ventaja competitiva. Creación y sostenimiento de un desempeño superior* (4th ed.). México: Compañía Editorial Continental S.A.
- Tidd, J., & Hull, M. (2003). *Service innovation. Organizational responses to technological opportunities & market imperatives*. London: Imperial College Press.
- White, M., & Bruton, G. (2011). *The management of technology and innovation. A strategic approach*. Mason, OH: South-western Cengage Learning.

WIPO (2012). *WIPO IP facts and figures*. World Intellectual Property Organization Economics and Statics Series.

World Economic Forum. (2012). Retrieved August 14, 2012 from World Economic Forum: http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf