

The Mediating Effect of Innovation on The Relationship between Strategic Management Dimensions and Construction Project Development: A Conceptual Framework

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Abstract—Innovation becomes a crucial factor to the project development; a factor which is ignored by the previous strategic management models that focused more on the physical resources of the project. This paper aims to investigate the improvement of the linkage in between the competitive advantages' roots and the projects' development. A comprehensive review has been done wherein several previous strategic management models are discussed. The reviews found out that there are some pillars of strategies that contribute to the project development. Even more, this review focuses on how to strengthen the direct relationship between the competitive advantages' roots and the project development. This paper is significantly important because it adds innovation factor as a mediator between the competitive advantages and the project's development. Hence, this paper provides an effective project development model linkage for the project's strategic plan.

Keywords—*Competitive advantages; resources; value; capability; innovation; project development*

I. INTRODUCTION

Nowadays, industrial revolutions involved innovation in every industrial development around the world, no matter what kind of industry that is engaged to. However, more latest strategies and innovations are brought in, in order to maintain the development

of industries. This has drawn the attention of the top management for the need of implementing strategies and innovations or the need of setting up strategies and innovations in order to achieve the development of construction projects management. Strategies are very important for any construction projects management. Construction projects management is normally a large project that require a huge capital funding and without a correct strategy, failure is expected. Failure mean a massive loss and that's what makes strategies are the most essential part of any construction projects. Innovations are the second hub for the construction projects where it provides the management the ability to develop, organize, enhance, and assist the construction projects management [1].

The elaboration of an optimal model to link between the strategic management and project development is not a new idea. the process is used every day with frequencies unconsciously, in situations of basic problems. The use of information and the management of uncertainty are key elements for efficient management in an organization. Similarly, executives who face difficult situations in which decisions must be made to solve present problems but with repercussions in the future must choose between different strategies and courses of action. This involves the development and use of a model.

Some authors dedicated to the study of the models define it as: It is a theory that includes several elements that are related to each other to give shape or structure a plan, technique

or norm that is given for the achievement of an objective. A simplified representation of the key properties of an object, circumstance or relationship, which can be oral, material or mathematical [2]. They are a means, a resource to start a process of knowledge; they are not an end in itself. The importance of the models is based on two advantages that are closely related to each other, but are not identical. The first is, the savings in the presentation, the search, use of effort, resources and times; the second is that the models allow analyzing and visualizing such complex situations in a way that would be impossible if the system were reproduced in its real condition.

II. STRATEGIC MANAGEMENT

A strategic model has as its starting point the Vision, Mission and Values as catalyzing elements for the creation of the strategy, as points out by Turner [3]. It has the inspiring and unique direction (vision) and it creates the needs to be covered (mission) and is complemented by the virtues that the organization promulgates at all levels (values). Finally, the strategic objectives and guidelines are established through the Strategic Synthesis. The base of the operative support of a strategic model is supported by the functional organizational structure (organization chart), the Strategic Plans of the Units and Individual Plans, both aligned to the Strategic Plan of the Organization; and it is complemented with the adequate standardization of the processes, procedures, policies or rules and functions, in order to guarantee the quality of the support and technical advice to the development projects. Also, it can be pointed out that a strategic model is a document in which the heads of an organization (business, institutional, non-governmental, sports, among others) reflect the strategy to be followed by your company in the medium term [4].

Although in many contexts the concepts of the model director or strategic model are often used interchangeably, the strict definition of a strategic model indicates that it must set the guidelines and behavior for an organization to achieve the aspirations that it has embodied in

its master plan. Therefore, and in contrast to the director model, a strategic model is quantitative, manifest and temporary. It is quantitative because it indicates the numerical objectives of the company. It is clear because it specifies policies and lines of action to achieve those objectives. Finally, it is temporary because it establishes time intervals, concrete and explicit, that must be fulfilled by the organization so that the implementation of the model is successful [5].

Table 1 illustrates the main points of three strategic management models. The strategic management model according to Ansoff and McDonnell [6] is made evident by a process of communication and determination of decisions in which all the strategic levels of the company intervene. A strategy is valuable depending on the quality of the information that the company has of itself, its resources and the environment within which the organization operates.

The quality model, according to Harrington [7], is oriented to "a correct form of management for continuous improvement, which identifies waste, eliminates it and prevents it from reappearing, a situation of great importance for education. In which day after day changes are implemented without effective achievements that lead to the management of quality and productivity ". The re-engineering model, according to Talwar [8], is an approach to planning and controlling change, redesigning processes and then implementing them. Thus, the coordinated management of change is based on four forces, such as: competition, regulation, technology and internal improvements, which allow quality processes that, will impact all the units of the organization through the interaction of continuous processes. The approach to be addressed mainly through the proposal of the management model, is organizational reengineering, which allows providing public construction institutions with an address, management approach and appropriate strategies to improve construction management, without leaving aside proposals aimed at the continuous improvement of the organization.

TABLE 1 MAIN POINTS OF STRATEGIC MANAGEMENT MODELS

Model	Author/s	Scope
The strategic management model	Ansoff and McDonnell [6]	A strategy is valuable depending on the quality of the information that the company has of itself, its resources and the environment within which the organization operates
The quality model	Harrington [7]	Continues education lead to improve the management of quality and productivity
The re-engineering model	Talwar [8]	The coordinated management of change is based on four forces, such as: competition, regulation, technology and internal improvements

From this vision, the realization of effective construction project management requires the proper preparation of those who must perform it, knowledge of the principles and skills (technical, interpersonal, diagnostic and conceptual) that should be the basis on which the performance of a manager, because they are responsible for directing the activities that help organizations achieve their goals. Most organizations carry out a certain type of long-term planning, also called strategic, and its formal process has been used since the late 1960s. However, according to Andersen [9], strategic planning processes are conceptualized and executed poorly; Often, the process is not very creative and is tactical rather than strategic in nature; The Strategic Plan rarely affects the daily decisions that are made in the organization. For this process to be successful the criteria for making daily organizational decisions must be established and the pattern against which such decisions can be evaluated must be provided. Strategic planning is much more than a simple forecasting process because it requires establishing clear objectives and strategies to develop them during specific periods, in order to achieve the planned future situation. Therefore, they must be developed within the context of that situation and must be realistic to achieve the established objectives.

III. COMPETITIVE ADVANTAGE

The competitive advantage has been a revolution of information and economic theories; without places to doubt has acted a fundamental change in the concept that each company manager has the role of information systems. Before Porter's theories, the information considered one factor among others in the process that determines the business.

The competitive advantage introduced by Porter is strictly related to the concept of value (more information about the value chain here), which in many cases can replace the Traditional concept of cost in terms of business planning.

The theory of competitive advantage has been one of Porter's greatest achievements and allowed him perform successfully as a strategic advisor to some of the most multinationals known worldwide as among others DuPont or Royal Dutch Shell and as an advisor to its U.S. government. However, his international consulting company, Monitor, founded in the Eighties, failed to overcome the crisis and was acquired by another group after declaring the bankruptcy in 2008, which generated lively discussions among economists that in the Substance are divided among those who claim that Monitor was not able to enact the theories of its founder and those who on the contrary consider that Porter's theories are no longer trained to measure successfully with the market of our time. In fact the same Porter in a 1990 text (The Competitive Advantage of Nations - The competitive advantage of nations) had recognized that the model of the three generic competitive strategies would have it had to be more dynamic to adapt to the new conditions imposed by the market.

IV. RESOURCES

In legal language, the term is usually used in a broad sense to identify any medium employed by those who wish to defend their right. In this sense, it is said that the party must resort to the ordinary ways, must resort to the protective measures of possession. In a more technical and restricted sense, recourse is the means or instrument intended to cause the

judicial decision to be reconsidered, in the same proceedings as it has been handed down, in order to obtain invalidation, reform, clarification or integration. Resource Management refers to the processes of obtaining, distributing and articulating the human, financial and material resources necessary to achieve the learning and development goals proposed by the establishment. People management considers the actions aimed at the implementation of strategies to improve human resources, development of teamwork and the generation of an adequate work environment. The management of material and financial resources refers to obtaining resources and their proper administration in order to enhance teaching activities, institutional results and quality learning for all students. The criteria contained in this area correspond to:

1. The director and management team administer and organize the resources of the establishment based on their institutional educational project and student learning outcomes. In order to meet the institutional objectives and learning objectives of the establishment, the director and his management team must ensure the proper use of the financial, material and pedagogical resources of their establishment.
2. The director and management team develop initiatives to obtain additional resources, both from the direct environment and from other funding sources, aimed at achieving educational and institutional results. The availability of additional resources facilitates the achievement of the goals of an educational center. In this direction, the director and management team must promote a management that takes advantage of opportunities, leading processes of search, negotiation and linking of resources to the needs of the establishment.
3. The director and management team motivate, support and manage the staff to increase the effectiveness of the educational establishment. The director and management team require a committed and competent team. A good direction proposes challenging

objectives recognizes achievements and opens space to the emergence of new leaderships.

4. The director and management team create appropriate institutional conditions for the recruitment, selection, evaluation and development of the establishment's personnel. The quality of the personnel of an educational center is fundamental in the achievement of its goals.

Therefore, it is important that the director and his management team ensure recruitment and selection processes consistent with institutional needs. Likewise, they must guarantee systematic evaluations to the personnel that allow to have a vision of their evolution in a determined period and that are oriented towards their improvement. In the evaluation process, it is important that the director and his / her teaching directors channel the perception of the rest of the educational community about the performance of the teaching and co-teaching staff of the establishment

V. CAPABILITY

Since companies compete with each other for customers, to acquire market share and receive income, they employ tactics according to deliberate strategies. The process of preparing the strategies and putting them into practice is the responsibility of the management of a company. However, not all companies have the same advantages when developing and using the strategy. Strategic capability refers to the ability of a company to successfully implement competitive strategies that allow it to survive and increase its value over time. While strategic capacity takes into account the strategies used by a company, it focuses on the organization's assets, resources and market situation, projecting how well it will be able to employ strategies in the future. There is no single or universal quantifiable method to measure or indicate strategic capacity.

The strategic capacity of a business is an important component so that it remains economically viable and growing despite the

presence of competitors in the market. Many stakeholder groups try to measure and control strategic capacity. Among these are investors who want to invest their money in companies with reasonable possibilities of growth and future success. Employees also care about strategic capacity, as they identify whether companies are stable and are unlikely to have problems or that they need to reduce costs through layoffs. Business leaders track strategic capacity, not only by their own companies, but also by competitors to better understand the markets in which they operate. Finally, financial analysts and government regulatory agencies have an interest in strategic capacity, since it plays a role in the valuation and monitoring of companies.

Many elements can potentially contribute to the strategic capability of a company. Assets such as cash, assets and patents contribute to a company's ability to formulate and employ strategies. Other elements of strategic capacity include human resources and the organizational structure, since employee skills and leadership mechanisms help the competitiveness of a company. Prices can also be a part of strategic capacity, since companies that know how to manipulate prices to maximize profits have strategic advantages over competitors who have trouble reaching profitable price points for their products.

The evaluation of strategic capacity is a complex process, partly due to the number of factors that must be addressed. The process of evaluating the strategic capacity of a company is known as strategic value analysis. It is based on data from annual reports, public surveys and market trends to determine which companies in a certain industry have the strategic capabilities that others do not have. As companies change and acquire additional resources, analysts must continually conduct new strategic value analyzes.

VI. VALUE

It is common to read and hear in the world of the company expressions such as: "it is an activity with a lot of value added", "we must put this into value", "we must produce that

that contributes value to the client"; "the chain of value in our productive process". It seems evident that without proper management and maximization- of value in our companies, these are not profitable or viable, and they may see their subsistence compromised, and by extension, ours. Therefore, it is vital to generate value and manage it conveniently.

Evolution, adaptation, improvement, change are aspects that are intimately related to our lives, in all its facets, and with our organizations, including companies. In the companies, the changes have their origin in the problems, needs or opportunities that arise continuously. In front of these we generate ideas of response, ideas that allow us to face each problem, cover every need, takes advantage of every opportunity, ideas that contribute value. The generation of these ideas is a direct natural consequence of human creativity. And normally, the feasibility of an idea is concrete in the viability of achieving some associated objectives.

Converting that idea into reality, moving from an objective concept to the achievement of a real and palpable objective, is to create value, and we call it a project. The projects have a component of projection towards the future that implies risk and uncertainty. At the same time, as the execution of the project progresses over time, the data we have about the problem, the need or the opportunity can increase, and the surrounding circumstances vary availability of resources, environmental conditions, market, personal, technological advances, new legislation, and economic crises.

All this means that changes that threaten or generate opportunities for the project itself appear inexorably. A project, in itself, means the use of a series of means, the investment of some resources, and therefore, an effort to achieve the objectives sought. From my experience in the professional field, and in the staff I would say that too, every time I am more convinced that to destabilize resources, avoid unpleasant surprises, maximize performance and results, and satisfactorily achieve the objectives set in a project of any kind field, it is necessary little improvisation very quality,

and much knowledge and method in the way of managing. The success of a project involves generating value in our company, materializing specific objectives based on a bright and viable idea, avoiding risks, taking advantage of opportunities and making efficient use of available resources.

However, it is impossible, 100%, to guarantee the success of a project. It is clear that in the business world, not all projects succeed. Moreover, some, faced with the few possibilities of success, should never have started. But a methodology of management, allows selecting the projects with greater degree of viability, and among these, those that contribute more value to the company, significantly increasing the probability of success.

VII. PROJECT DEVELOPMENT

The development of the project is the efficient use of assets, learning and practices to structure and execute a specific project and meet its objectives and goals according to explicit prerequisites. In addition, it is characterized as the path towards changing contributions from accessible projects to desired returns by devouring accessible assets. The term is generally used in IT and programming projects. The development of the project incorporates forms of abnormal states such as Design, Delivery and Evaluation. It is one of the real stages that agree with the following:

- 1- Initiation
- 2- Development
- 3- Closure
- 4- Maintenance

VIII. INNOVATION

A common idea of innovation is a new idea made reality or put into practice. Innovation is the successful exploitation of new ideas. That is to say that every idea generated must produce benefits so that it is innovation. Innovation does not necessarily dispense with research and development, but most innovations are the result of R&D. The first to emphasize the importance of technological phenomena in economic growth was the Austrian economist Joseph A. Schumpeter (1934) who made the basic

definition of innovation in 1934 in 5 following cases:

1. The introduction of a new good into the market is to say, a good with which the consumers are not yet familiar, or of a new class of goods.
2. The introduction of a new method not yet experienced in the branch of the affected industry, which needs to be based on a new way of dealing commercially with a new product.
3. The opening of a new market in a country, whether this market already existed in another country.
4. The conquest of a new source of supply of raw materials or semi-finished products, again without taking into account whether this source already exists or has to be created again.
5. The implementation of a new structure, for example the creation of a monopoly position.

The close connection between current concepts of competitiveness and innovation is evident according to the aforementioned definitions on innovation, saying that new products must succeed in the market is practically the same as they have to be competitive. The innovation thus defined does not necessarily depend on technology, understood as the industrial application of scientific discoveries. Innovation will be technological when it has to do with science and technology. Technological innovation supposes for the company the introduction of a technical change in the processes or products. The Oslo OECD manual (1992) states that technological innovations refer to both products and processes, as well as to the technological changes that are carried out in them. It is not considered innovation until the product has been introduced in the market (product innovation) or until it has been used in a production process (process innovation). Not only technology intervenes in the process of innovation, but also in diverse scientific activities, organizational issues, financial considerations and commercial considerations

Schumpeter [10] introduces on the one hand the differences between invention, defined

as the generation of a new piece of knowledge; innovation as the translation of previous R & D in a new product / process that reaches the market; and diffusion as the imitation of innovation when adopted by a fairly large number of competitors. On the other hand, it distinguishes five forms of innovation: of product, of process, of new raw materials, of new markets and of industrial reorganization (not of the organization). Another central approach in Schumpeter is to privilege the technological push and pull of demand, which is, of course, a consequence of its emphasis on radical technical change and the consequent storms of destructive creation that are at the base of its vision of development capitalist.

IX. CONCEPTUAL FRAMEWORK

The importance of innovation for an industry to achieve competitive advantage is ever increasing, because innovation is the engine of competition and determiner of competitive positions of industries [11]. Impressive writings have been published about the matter of innovation, which is broadly observed as the premise of a competitive economy [12]. Such writings incorporate evidence that competitive achievement is reliant upon an organization's management of the innovation procedure and proposes factors that identify its effective management. Measuring, assessing and benchmarking innovation ability and practice represent a critical and complex issue for some contemporary organizations. A vital test is to quantify the unpredictable procedures that impact the organization's innovation capability, and all together can be ideally overseen. The estimation of innovation is likewise vital from a scholastic research point of view [13].

Inside the management of innovation, measures of parts of innovation management are every now and then proposed as a way to react to the necessities of the two firms and scholastics to comprehend the viability of innovation activities. In any case, their treatment is divided. It is potentially a result of this discontinuity that observational investigations have discovered numerous organizations which tend to concentrate just on the estimation of innovation

information sources and yields as far as spend, speed to showcase furthermore, quantities of new items, and overlook the procedures in the middle of [14]. A summed up estimation structure determined at the level of the organization would give a valuable premise to supervisors to screen and assess their innovation forms, analyze restrictions and endorse cures. While trying to expand the estimation theory and past practices, there is an emphasis on yield performance, and therefore, this paper surveys previous studies and identifies estimation of innovation management with regards to a reasonable system of process that gives the premise to a general estimation structure. Unify unique proposals for innovation management estimation made in different parts of the writing and bridge ordinarily utilized measures at various phases of innovation management [15]. Also distinguish holes in the estimation theory and practices and indicate the way the improvement of a thorough arrangement of innovation management measures can be achieved.

In any case, scientists are confident that effective innovation needs momentum from the upper management group (UMG), in light of the fact that UMGs will likely have a more prominent impact on the innovation introduction of an association, when the land it is dynamic, eccentric and changing and competitive. Furthermore, without a strategy for innovation, the change in performance is not conceivable.

The innovation strategy reflects the industry's inclination to connect and reinforce new thoughts, rarity, experimentation and imaginative procedures that can generate new elements, administrations or mechanical procedures, and finally, the change in performance [16]. In this sense, the innovation strategy is basic for the achievement of innovation in the assembly of companies and related companies Guan, et al. [17] and is a fundamental apparatus that decides the course of business innovation. It also controls them by adjusting, incorporating and reorienting their mechanical capacities to collect, maintain and improve economic competitive advantages.

Talke, et al. [18] found that UMGs through the promotion of an innovation strategy could improve the performance of the company. Different scientists recommended that the choice of an innovation strategy could improve business performance or decrease the margin of performance by converging on changes in market conditions. In addition, the innovation strategy makes companies and companies discover new open doors for their development and development [19].

The chosen scenario to examine the impacts of innovation techniques on performance is the construction business, since the construction division not only assumes a basic part of human settlements. Hence, the industry assumes a vital part with respect to the economic, social and social development of the countries, and the extension of this industry is considered as an indication of development and development in the countries.

As indicated in the report of the Ministry of Housing and Urban Development (MHUD) of Iran in 2008, the construction business uses more than (11%) of the working population. In this sense, around 3.9 million people have been associated with the business and, during the previous decade, almost (40%) of the annual aggregate investment was made additionally in this segment [20], and accommodation and construction companies' commitment to GDP in Iran had ended (5%). However, this industry is still a growing industry spending its beginnings in Iran, which in contrast and the other created or despite creating countries, the performance of Iran's construction industry is low, due to the absence of strategic, dynamic introductions and innovation, although the construction industry is currently a very exclusive segment, and their working conditions, industry structures and the trademark of the article are changing at a rate that is regularly expanding. In addition, the movement in the business is responsible for the impacts produced by the innovative change in different areas of the economy, characteristic vulnerabilities and problems such as fluctuating net income of the organization, climate change, efficiency in the place, political circumstances in a nation, expansion, market rivalry and

customer requests. In this way, the construction business introduces a significant environment to investigate the problems identified with innovation and strategic reviews, on the basis that the business has a high potential for development and its extension of performance is extremely impressive as shown in Figure 1.

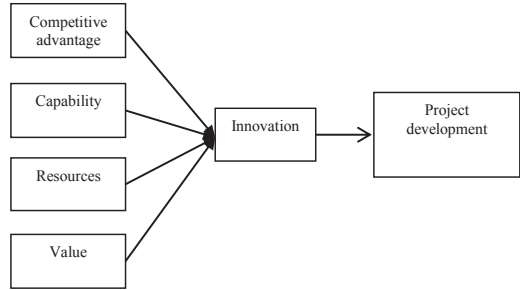


Fig. 1. Unified framework for project development

X. CONCLUSION

Investigating factors that boost the project development helps to create an integrated construct that improve the expected outcome of the project. This study provides insight for effective project development model linkage to the strategic plan of the project, this insight presents by suggesting a conceptual framework that stands on two pillars. First, the role of integrated dimensions of the competitive advantages and secondly is the mediating role of the innovation management where these two pillars integrated together toward project development.

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