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Industrial Development of the SMEs Based in Knowledge Management through its Job in the Supply Chain of Innovation Technology Companies

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Abstract

This paper propose the integration of knowledge management and the integration of small and medium-sized enterprises (SMEs) in the supply chains of innovative enterprises, as a means to achieve their development and retention in the markets that are increasingly competitive, dynamic and changing. The proposal is directed towards the development of a methodology for developing knowledge management and its impact on productivity growth and the strengthening of the competitive position.

Key words

SMEs, knowledge management, supply chain, innovation.

Introduction

Actually requires a lot of knowledge to deal with the complexity, to provide services that add value to the interprises and encourage innovation. For this reason, more companies are joining forces to combine their knowledge.

Knowledge management has attracted a growing interest in a business ambit and in academia from a little over ten years, due to its importance in the development of enterprises worldwide.

It is proposed that the organizational learning, knowledge management and the wise management of its human resources, will be key factors in the processes of innovation and success in the small and médium-sized enterprises (SMEs).

Innovation should be seen as a strategic process in all companies. To innovate requires an extensive knowledge of a certain need, not all ideas are successful, it is therefore necessary to use all the tools for innovation, in whatever form it occurs, not only impact to customers but also to function.

The combination of these concepts is giving rise to new forms of integration and formalization of the relationship between large companies and SMEs.

Small and Medium Sized Enterprises

Small and medium enterprises (SMEs) are the nucleus for the development and growth of the countries at present. In Latin America is the largest sector workforce demand in the economy, similar to other regions of the world.

The SMEs are characterized by their companies having generally familiar character. Its owners-entrepreneurs are at the forefront of the business, in addition to live with the problems of a family. Moreover, whatever the reason chosen to formally establish a company, the affection between members of the organization will become a staple for his leadership.

This fact leads to the SMEs to have certain strengths to develop other sectors that do not possess and weaknesses from their meagre resources. Together with its traditional leadership and centralized decisions, placed in a position that generally local financial systems of the qualifying risky to be subject to appropriation.

The situation is commonly must face all businesses and more SMEs is the managing scarce resources, between the demands and assignments are. They generate conflicts of interests of various magnitudes.

The reduction and not the disappearance of conflicts begin to analyze their products (goods or services), to consider how it is seen in their environment and to create value in order to remain on the market. Thus, one can say that in principle the SMEs to face problems related to: sales, training, leadership, the systematic diagnosis of problems or conflict management within the family business.

Joined with this, the environment in which they operate SMEs is increasingly dynamic and changing by the interaction of all actors: federal government and its plans for economic development, tax policies in each country, developers of information technology, infrastructure, customers and suppliers, financial institutions, regulatory bodies in the chain customer supplier.

Knowledge Management

Knowledge management is a discipline that is becoming increasingly force, several companies around the world are developing strategies to manage their processes of generation, storage, use and dissemination of knowledge. It has joined terms such as intellectual capital and intangible assets in daily life within organizations. But is it a new subject knowledge management?

Not really, says Liebowitz (1999), who asserts that knowledge management is about creating value of the intangible assets of the organization. It adds that it is an amalgam of concepts from artificial intelligence, knowledge-based systems, software engineering, RPG (reengineering of business processes by its initials in Spanish), human resources management and organizational behavior.

However, this point of view could lead to the same mistakes that other techniques and methodologies administration committed and suffered at the time. The fundamental basis of knowledge management lies in recognizing that the most important means of production at present and that it is impossible to duplicate by others, is the knowledge within an organization.

The individual knowledge in the organization is a single instance of experience and knowledge that can never be duplicated, this individual knowledge combined with the knowledge of other individuals giving life to organizational knowledge, which inherits the properties of its origin, is a single and unique knowledge.

Now, what occupies knowledge management is not the knowledge management as a subject, but the administration of the knowledge processes that enable an organization efficiently and effectively articulate the existing knowledge to get the most value for the future.

Knowledge

There are two epistemological traditions. On the one hand, rationalism which affirms that knowledge exists by itself without the need to be perceived by the people, can be deduced by logical reasoning through axioms; an example of this tradition is that of mathematics. Moreover empiricism asserts that there is no prior knowledge, and that this is due to the sensory experience of human beings and everything in the world is an objective inherent in its existence, an example of this tradition is experimental science. (Nonaka and Takeuchi, 1995).

A more practical definition for the purpose of this work is that knowledge can be understood as the set of ideas, experiences, skills and resources that a human being acquired during her lifetime and used as a frame of reference for the daily events of his person.

According to Alegre (2004), who referring to Nonaka and Takeuchi (1995), mentions that the knowledge is in two states: implicit knowledge, which is part of the person lies in their senses. It is the result of learning and the accumulation of knowledge and experience over the life of the individual. Explicit knowledge is the result of the codification of knowledge of the sources of information such as books, notes, journals, or databases.

In this vein, a component of knowledge management can be seen as the process by which the human being extracted knowledge internal and shape formally (encodes) in a document, database, a talk, and so on. It's called outsourcing and is extremely complex because not only refers to a part of the knowledge, but it takes place within a domestic context of the person and of the external environment around him at that time.

The reverse process by which a person receives knowledge, processes it and stores it is called internalization and is equally complex for the same reasons.

As a discipline, is supported by various scientific theories and apply its concepts from the systemic point of view and not under the traditional patterns of other disciplines. Both disciplines are converging on the most fundamental learning to talk to because we talk about this knowledge and learning is possible through the knowledge of the processes involved in the knowledge management. Knowledge provides intelligence for decision making and appropriate action at the right time.

The production of knowledge integrates individual models of learning in a simple sense of social context within which represents the group or organizational learning. The organizational and individual actions are represented by the interaction of the proposals of knowledge and business processes but in a simple sense of organizational learning hijack proposals knowledge valid, not validated and void. The double meaning of organizational learning is possible when proposals for knowledge has been validated and integrated the organizational knowledge base for the use of it by the organizational structure.

The business processes are part of the knowledge base, the ability to modify them based on knowledge acquired forms are operational within a model of organizational learning dual meaning. The ability to update and modify these processes represent a continuous improvement process for any organization.

Supply Chains

The approaches on the latest industrial development in a global environment, have shored the companies to correct and redirect their schemes organization with the aim of being able to be more competitive in the environment around them.

The Centre for Innovation in Applied Competitive Technologies (2008), stated in its website that the administration or management of the supply chain SCM, is a collaborative effort among members channel productive customers, manufacturers and suppliers. Designing, implementing and managing processes that add value to satisfy the real needs of the end customer.

Supply chains generate strong obligations among participants of the structure of the chain in order to achieve competitive advantages in some explicit design (Jimenez and Hernandez, 2002). This condition allows us to observe the need to interact more closely with the participating companies that they should interact in a systematic way.

Contrary to the philosophy of the supply chain, companies in traditional organization, generally seek vertical integration with its suppliers and customers. They personal negotiations with a short-term vision, seeking a lasting relationship without commitments. More specifically, the integration of the companies participating in a supply chain not only involves coordination of the flow of goods and services, it also involves a greater commitment of the parties which leads necessarily to a change in corporate culture.

The close linkage of various companies in the supply chain involves a change in the traditional positions. Suppliers, wholesalers and retailers are now as a partner, they share more information, outlined joint plans for: business, sales and promotions, participate as a single team in research and product development. Develop analysis and growth plans together, ie, examine the supply and demand coverage.

Innovation

Innovation should be seen as a strategic process in all companies. It is a term of an economic or social rather than technological. Berumen and Palacios (2006), mentioned that Schumpeter (from 1912), defined the evolution in terms of the changes taking place within the organization, which placed technological change in the center of the evolution and the entrepreneur as the body that promotes innovation in enterprises.

According Escorsa (1997), innovation is the process which, from an idea, invention or recognition of a need develops a product, service or useful technique until it is commercially accepted. According to this concept, innovation is the process of developing new or something that is not known from the methodical study of a need, whether personal, group or organization to achieve economic goal. In other words, innovation generates those ideas that can be sold in a particular market.

To innovate requires an extensive knowledge of a certain need, not all ideas are successful, it is therefore necessary to use all the tools for innovation, in whatever form it occurs, not only surprised but also works.

The first impact of innovation can locate in the process of research and development (R & D) in the generation and the launch of new products. The development of new products requires a particular culture. The culture generated around the investigative processes, it also integrates the human environment, consists of objective factors such as research laboratories, equipment, office furniture, the organizational infrastructure and subjective elements such as laws, rules and regulations organizational values.

Among the most important elements of culture are alleged not established, for example in the respective forms in which it should develop a product or a new service. For this reason, some cultures are more effective than others. But it is an established fact that the groups are able to raise their levels of productivity in an atmosphere of cooperation.

Discussion

It is clear that a country's competitiveness depends on the ability of their companies in all industries to innovate and improve continually. "… We can not fail to meet this element and factor of development and devote studies, research and reflections on how knowledge that arises in the minds of the people can help raise the standard of living of the general public" (Lucendo, 2007).

The proposal focuses on the management of the SMEs conjunten strategically knowledge management and their integration into supply chains innovative companies. The identification of innovative companies in any industry within which the performance is the keyword.

The idea is that knowledge management must go beyond the boundaries of business, both in the core company of the chain as those that are part of its supply chain. That is, should develop a continuous flow of knowledge and information between companies for the development on the one hand, to suppliers of goods or services, and secondly, the final product that the company nucleus (innovative) is committed to deliver clients in a highly competitive market.

Thus necessarily the development of SMEs will be enhanced, and large enterprises achieve stabilize their supply chains. Except that this achievement to measure, it should establish a methodology for developing knowledge management and its impact on the metrics of innovation of SMEs in supply chains. Methodology that the author intends to develop as a doctoral research.

Expand innovation within the supply chain of an innovative company goes beyond stabilizing the chain through the implementation of the SCOR model (Supply Chain Operational Reference Model), as explained Wang, W. Et al, (2007). This is to make maximum use knowledge of people within all organizations involved to expedite the process R & D + i.

But this would not be an isolated effort, but in conjunction with government agencies in each country responsible for innovation, development of SMEs, financial institutions and mainly government plans to guide public policy in the development sector covering between 60 and 80% of all jobs created annually in each country.

However, if the managers of large companies see no benefit to their companies, will not give this step towards the development of its suppliers. That's where lies the importance of public policies to strengthen SMEs, because they can offer some kind of tax incentives for example, large companies to assist the development and strengthening of SMEs involved in its processes.

Much has been written with regard to the SMEs to have a high drop in the market. Soriano (2008), provides that the failure of the figures are alarming SMEs in any country to be considered. Statistics show that, on average, 80% of SMEs fail before their fifth birthday and 90% of them less than 10 years. For the owners of SMEs to the reasons for the failure should be sought outside companies, but analysts are more oriented towards identifying the causes of failure in his own SMEs, in particular in the management capability of its leaders.

Knowledge management has become a new paradigm. For an organization that is functioning and competitive it is necessary to have a strategy, clearly defined objectives, management control, a set of processes rightly established at the same time insured, a system of formal internal and external communication, a performance measurement system and improved performance and finally, a distinct corporate culture. What is new is that until a few years ago, the combination of these elements was sufficient condition to be competitive and survive in the market, and currently only in a global economy is a prerequisite.

Today, for the SMEs to be able to compete successfully, it is necessary to make use of an efficient management tools, the synergies of the organization to interact with others within a supply chain and ensure a pace of learning that is approaching, the maximum possible pace of change in the market, so that when you are able to overcome it, arises innovation.

Those organizations capable of creating the conditions for their pace of learning is more than that required by the market can innovate and thus obtain a sustainable competitive advantage over its competitors. Streamline and accelerate the learning-cycle experience is the key.

It takes over the SMEs things that make it better than others, what they are specialists. And to continue doing so well, it is necessary to maximize the learning experiences at high speed.

In this environment, the change has been the key that has set the pace of development. Change means that the new state of affairs is different from the old and the change has been a constant since the end of 1990, due to the accelerated flow in the exchange of information, the processes of globalization and new business practices, among others.

The only way for the SMEs to be competitive in the long term is innovating more than its competitors. When the top management of a company is aware of this, the most viable way will accelerate the pace of learning to be innovative achieve.

From the literature review, we have seen that in any region of the world, is remarkable interest locate, process and analyse reliable information to monitor the evolution of the processes of technological innovation.

For government agencies that track both the processes of innovation, the Bogota Manual (2001) may be useful in establishing a basis for the design and evaluation of public policies aimed at strengthening systems Innovation in the same way, it may be useful as supporting those shares in companies that are undertaken for the improvement of their technology.

The Bogota Manual is the work of the Network of Science and Technology Indicators (RICYT by its initials in Spanish), uses the experiences of Oslo Manual (OECD, 1997), produced by the most developed countries as uniform method for the investigation, but that adapts to the characteristics of Latin America.

The monitoring is being proposed in the Bogota Manual can be an intervener in defining strategies for companies interested in having elements and parameters for which comparable, in terms of technology.

The fact that the Bogota Manual is inspired by the Oslo Manual reveals concerns that the indicators used to meet criteria and procedures to ensure comparability, both in Latin America and in other regions.

Moreover, the Oslo Manual in its third edition, 2005 provides guidelines for the collection and interpretation of data on innovation. It is also considered a basic source for studies related to those activities that lead to technological innovation, its scope, the types of innovation and impact of innovations in the performance of the organizations contributing to the establishment of a culture continuing technological development.

In the SMEs to service, non-technological innovation plays an important role and its own characteristics. This leads managers to adapt their concepts and definitions developed for the manufacturing sector, the reality of service provision.

When innovation in services is touched, rarely is a change in their functional characteristics (as opposed to product innovation), but often involves new forms of distribution, interaction with the customer, and so on. Almost never, in practice, is a radically different from before but incrementally different.

Innovation in services is possible without technological innovation. However, many services use a lot of information, therefore, in many innovations in service technology plays a vital role. In practice there is a wide range of relationships between technology and innovation in service.

The cycle of life on innovation in services is different from the products. The processes associated with the engineering R & D takes on a different meaning in services. These cycles standard in manufacturing may be useful as a guide but in the vast majority of service firms, do not have an actual application.

Traditionally, innovation indicators refer only to technological innovation and, in general, the indicators used are: spending on R & D and the number of patents. These indicators have little validity in the case of services. Innovation in services is not always technological and as a result, there are no factors applicable to R & D, also by its very nature innovations in services are not patentable.

Since innovation in services is a strong element of innovation and transition process will be here where each company should define its own indicators of measurement and control.

On the other hand, learning, organizational knowledge management and the wise management of its human resources, will be key factors in the processes of innovation and success in service companies.

It is increasingly rapid obsolescence of the processes and products, which characterizes the current competitive stage and differentiated goods are taking at the same time an increasing weight in international trade (especially in the exchanges between the more developed economies) have spread the idea that innovation is the key to business success.

In business today, organizations are joining to form networks for the purchase of raw materials, manufacturing or service creation, storage and distribution of goods and, finally, the distribution of products to customers consumers. This effort is being developed in a cooperative manner and was cooperative management of the supply chain.

The management of the supply chain has become the main strategy for companies that want to remain in business today, it profits as creating sustainable competitive advantages, increase profitability, reducing inventories, increasing returns assets and investments, increase in market share, cost reduction.

Managers of large enterprises not only need to understand the principles underlying this strategy, but also learn the value of cooperation and development among its suppliers; redirect internal competition for each weight invested in improving the network and request assistance partners who are willing and interested in building the supply chain dominant sector.

In Mexico a case of great success is the emergence of the network "Construrama ®" that combines SMEs engaged in the marketing of building materials with Cementos Mexicanos SA Ltd., the organization's largest cement. On the one hand, the big company needs to ensure a distribution channel for their solutions under construction and on the other are the small traders which once covered certain requirements, are able to offer a differentiated service to micro, small and medium-sized builders They resort to this network of distributors and partners meet their requirements for building supplies with a guarantee of supply in a period not exceeding 24 hours.

Conclusions

There is a growing and widespread recognition of the importance assumed by technological innovation as a tool to increase levels of competitiveness and the potential for sustainable development. This has generated in the region a notable increase in interest in the study and measurement.

The primary endpoint of innovation is knowledge, without it, there is no innovation possible and therefore it is essential to know how to manage it within an environment of competition and cooperation.

Currently, all companies in any industry to innovate is not a choice but an obligation of companies in any market. Today, no one can question that innovation is essential for companies to be competitive and able to endure.

Nationally, innovative companies have assumed greater competitiveness of the economy as a whole, also of the generation of technological developments disseminators the remaining operators.

It is necessary to distinguish large companies within the industry to do so should be established in each country to develop a standard criteria of innovative businesses.

They must consider the directors of large companies that innovation is not only the product or process, but also in management. Observe and follow in the footsteps of leading companies that have undertaken new forms of management through the design of effective supply chains, where not only receive from the SMEs, but at the same time become suppliers and driving them.

The involvement of institutions of development banks play a vital role in the financing of joint projects and the SMEs themselves integrated into chains, through mechanisms such as factoring to accelerate the recapitalization of the companies.

It is advisable to extend the formation of supply chains based on successful models, adapting to each country to the existing legislation and economic priorities. Avoiding as far as possible variability of government policies resulting distrust of entrepreneurs and inhibits long-term prospects for SMEs.

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