

# **Innovation and Business Development in Logistics Sector in Panama**

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## **Abstract**

The development of products, especially high technology ones, has relatively not been an important activity in Latin America. The paper will contribute to the service innovation body of knowledge on the sector of Supply Chain Management. Given that little knowledge is published about experiences in Latin America.

**Keywords:** innovation management, business development, logistics

## **Introduction**

The development of products, especially high technology ones, has relatively not been an important activity in Latin America. We appreciate that the top 5 products imported from Latin America in the European Union (EU-27) on year 2010 where mining and agricultural products: metalliferous, ores and metal scrap, petroleum, petroleum products and related materials, vegetables and fruits, feeding stuff for animals and non-ferrous metal (Eurostat 2010).

This reality shows that the region economy is not focused on the production of high technology novelties. For countries such like Panama and Costa Rica, the service sector is the driving motor of the national economy with important activities in communication, transport, tourism, bank and education. The available studies in innovation are to a large extent concentrated on product innovation, mainly on high technology product innovation. This paper will contribute to the body of knowledge in service innovation; more specifically, on service innovation on the sector of logistics. Given that little knowledge is published about experiences in Latin America, the results promise to be a valuable, until now, not existent research dealing with the special conditions of this region.

Panama is an exemplary case in Latin America with one of the strongest economic growth in the region. The paper will describe the actual process of innovation management on the logistics sector that has contributed to the economic growth of the

country. Inputs will be quantitative and qualitative information gathered through interviews as well as national indicators. On the literature review innovation management will be defined and its relation with business development. To present a global picture of the innovation activities in the region, a research about related publications and conferences for Latin American will be conducted.

The survey will address the fields of innovation management and business development and inquire the patterns across national and international companies operating in Panama. The research problem is formulated as follows. How is innovation managed in the logistics sector in Panama? How do companies on the logistics sector try to be innovative? Furthermore, it is intended to identify patterns how do these innovative ideas in the logistic sector are being managed to plan and execute new projects and on this wise to develop new business?

Before gathering information about these complex processes, a first impression of the respondent will clarify how interviewees consider is the innovation level in Panama on their own perception.

At the end of this research it is expected to build a model, which depicts the innovative activities on the logistics sector in Panama, and how are they managed. Within this exercise, it will be revealed the main reasons that impulse companies in Panama to be innovative; the main drivers behind innovation management and business development as well as the sources for innovative ideas. With a comprehensive panorama, the authors will develop a logistic innovation and business development model for Panama. This is the first time that innovation processes in logistics in Latin American will be with an empirical research be analyzed. The results of this research will contribute to raising the level of knowledge about innovation and business development of this region. The paper encompasses the Republic of Panama as a leading country on logistic sector of the region but it is foreseen that this initiative will support extending this study to another countries and moreover to the whole region.

### **Relevance of the logistics sector**

The phenomenon of globalization concerns all economic activities. Customer over the whole globe has access on their local stores to products that were manufactured thousands miles away. Elements of the globalization are the strong international flows in integrated markets which are not limited to merchandise and services but include as well capital, labor mark and know-how.

The forces that drive these elements of the globalization can be divided into economic, political and technological ones (WTO 2008). An important economical event that favored the increase in international flows was the foundation of the North American Free Trade Agreement (NAFTA) and the Euro-Zone. Important political events that fortify the emergence of free markets were the fall of the Berlin Wall and the dissolution of the Soviet Union. The development of mobile technologies with the introduction of 2G networks, the invention of the internet and the containerizing of international merchandise flows are without doubt triggers of the globalization.

Regardless that trade still has an importance at a local level; it is the international trade which had won importance in the last years. In order to keep competitive on this international stage, companies broke down their networks and e.g. move their production plants to foreign countries to reduce the production costs. The expansion of border-

crossing flows is promoted even more by the permanent reductions on transport and communications costs (BPB 2010).

To couple with the high complex task of organizing this international flow, companies in the logistic sector are demanded to constantly look for new strategies. The capacity of such a company to be innovative will determine its competitiveness and thus its success. Therefore, innovation management and business development are key factors for companies in the logistic sector that want to be leaders on their fields.

### **Innovation**

Innovation is not a phenomenon of the modern society, otherwise innovation occurs since the very begin of human history. The term “innovation” comes from the Latin word “innovate” what means “to introduce as or as if new” (Merriam-Webster 2013). Along the history, man has innovated as a result of a search to achieve a better living condition through continuous evaluation and analysis of the reached state. Nowadays, human continues doing so but in a more corporative environment within enterprises. This change of the scenario, which relocates the modern man from innovating on his backyard or studio to the boundaries of an organization on multidisciplinary teams, had promoted the necessity to manage the innovation. The importance of innovative organizations for a sustainable growth is a key element as the competitiveness of a nation and therefore their economy depend on the capacity of its industry to innovate and upgrade (Porter 1990).

Innovation is a valuable resource for a company and the key element for a long-term competitive development. (Chen et al. 2004) categorize the intellectual capital of a company as the structural capital, human capital, the innovation capital, and customer capital. For the authors innovation refers to “the introduction of a new combination of the essential factors of production into the production system” and works as a pivotal link in the intellectual capital. The categorization of the fields where innovation can take place goes further than the production; in this context, innovation can be a new product, a new technology, a new market, new material or new combination as well.

A very important condition to categorize a novelty as innovation is the requirement that it should conclude with its introduction into the market (Freeman and Engel 2007). Invention by itself does not imply innovation. In fact, invention takes place on a different time than innovation. Innovation is an organizational and social process that requires the adoption of a market, while invention could be performed by an individual in a creative act and them in another time and another location this invention could be adopted by an organization and be commercialized (Becker and Whisler 1967).

For (Bergmann 2000) the innovation goes a step further when after the invention and market introduction, the novelty is valued as useful. In this context, the innovation should give a new advantage to the user; it is original and possesses a high quality.

A very large literature is nowadays available from authors defining what innovation implies. All of them do clearly attach the element of “novelty” to their definitions. However, differences could be noticed amount them in what are the action fields where innovation could take place.

The Organization for Economic Co-operation and Development (OECD) which promotes policies that will improve the economic and social well-being of people around the world agrees that the innovation is a fundamental factor for achieving this target (OECD 2013). The OECD defines innovation as “the implementation of a new or

significantly improved product, or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations.” In the modern global marketplace, organizations are demanded to improve continuously their competitiveness in order to stay ahead, therefore they must look for innovative strategies (Chapman et al. 2002).

Innovation refers not only to products and processes but as well to concepts (Disselkamp 2012). Being a concept anything that is conceived in the mind as an abstract or generic idea to be generalized from a particular instances (Merriam-Webster 2012) a consensus within authors to specify how does innovation takes places on concepts is not available. (Tidd and Bessant 2009) extend the innovation space to the innovation in position and paradigm. An innovation in position does not necessary imply a new product or process but a new perception to the eyes of the customer. The new mode of use of the product or process suggests an innovation in position. An innovation in paradigm requires a self-reflection of the organization to change the ways they operate and its culture (Francis and Bessant 2005). (Disselkamp 2012) differentiates here between a structural innovation and a cultural innovation. The structural innovation refers to the change in the functionalities of the work structure. Such changes help to improve the work motivation, workers qualification and to achieve a better streamlining of the work course. Cultural innovations on the other hand, are improvement on social spheres; this mean, there is a new mentality of a group in front of a situation what encourages a new value scale. In the case of organizations, this will lead to new business models (Francis, and Bessant 2005) that define what the directive lines of a company are. Finally (Disselkamp 2012) adds a mark innovation and defines it as the acquisition of new procurement and sales mark by reducing the price or increasing the quality of a product or of the attached services.

### **Importance of innovation for logistics**

The new business models are characterized by less hierarchical supply chains and outsourcing wins importance. This enables the companies to focus on the core competencies while sharing the risks among parties (Gereffi et al. 2005). This has significant implications in the steps of manufacturing, warehousing, procurement and distribution for companies. As markets demand a higher supply speed and more flexibility, logistic represents an important source of competitive advantage for the companies along the stages of manufacturing, warehousing, procurement and distribution (Chapman et al. 2002).

From a study with distribution centers in Australia and Singapore, (Sossay and Hyland 2004) found that the interviewed managers considered innovation as a key element for lowering operating costs, keeping up with competitors, achieving a leading edge, responding to customer needs, motivating employees, attracting new company investors, attaining higher quality, achieving more speed and efficiency on the logistics services provided.

For (Chapman et al. 2002) the innovation in logistics services could take place through technology that facilitates the data processing and exchange as well as the better manipulation and transportation of products; through knowledge by creating, sharing and using strategic knowledge from internal or external sources to improve the efficiency; through relationship networks that demand collaborative work implementing new supply

chain concepts that promotes more integrated business processes along companies of a cluster and learning of best practices. In this last point (Dilk et al. 2008) pointed out that the merely formation of networks will not lead to a competitive advantages for the companies if they are not engage to research, develop and disperse innovations resulting of the creative long-term bonding between companies, clients and suppliers.

### **Related research in Latin American**

On the specific case of Panama, more than 3 surveys have being performed following the methodology suggested by the Oslo Manual. The last one done by (Bastos et al. 2011) was conducted in 506 firms without delimitation of their size or economic sector. The great majority of the interviews were coming from the manufacture sector. This is a very repetitive situation in other innovation studies in Latin American found during this research; the main focus lies on the manufacturing sector, which one is not a major export contributing sector, for the understanding of the authors the reason for this could be driven by the fact that the surveys are following examples from developed countries where this situation is the reality. After the analysis of the survey it is the opinion of the authors that the main objective of such surveys was to calculate indicators of innovation, like number of companies conducting innovation activities, identify limitations, investment, source and founding for innovation activities.

Example of the focus in manufacturing sector is the study of (Alvarez 2001) who analyzed 541 industries plants in Chile through a survey to identify the intensity of innovation in product, process, packing and organizational administration. Results of the analyses pointed out that exporters tend to be more innovators as non-exporters industries. The author close with the reflection that innovation is promoted by exports, but exporting is at the same time an incentive to innovate and this relationship suggests the necessity of what the author call a “virtuous circle”.

(Anlló et al. 2009) on a comparison study of the innovation surveys developed on the Latin American countries of Argentina, Brazil, Chile, Colombia, Mexico and Uruguay found that even when following the Oslo Manual, the surveys of the Latin American countries address more questions than the one suggested by the Oslo methodology on what this author understand as a way to find, beyond the sources of innovation, the characterization of innovative enterprises. Thus, the focus of the Latin American surveys is not to identify what the innovations are done but to identify how innovation is managed and which are the initiative that promotes innovation on companies.

Using literature review, electronic conferences and performing workshops and field investigations trips in Argentina, Brazil, Uruguay, Cuba and Costa Rica, (Bortagaray and Tiffin 2000) define innovation clusters in the Latin American context. On their study they defined a model based on this definition and test the model with data to identify already existing innovation clusters in Latin America, how do they operate and how mature they are.

With regard to the recent increase of success histories of corporate venturing in Latin American on ecotourism, (Rajagopal 2006) establish a direct relation between joint venturing and innovation. In a corporate joint venturing, companies complement their strengths for a unique opportunity of mutual improvement due to the interaction of mostly a young local company with promising future and knowledge of the local market

together with a large company willing to step in this unknown local market but with the capital, marketing strength and mature distribution channels.

Literature on innovation on the Latin American region is scarce. Most studies pursue the evaluation of innovation factors and formulation of relationships to draw a picture of actual innovation state or to find the trigger, minders and investment ratios of innovation activities. These studies address in a vast majority all the economic sectors and if one economic sector is in detail analyzed it is the one of manufacturing. None study were found neither about innovation specific on the logistic sector nor with the objective to describe how innovation is managed with the final target to formulate an innovation model for the region.

### **Data Collection**

As the Innovation Management and Business Development are mainly issues addressed by the managerial level, data is being collected from interviews with key managers. They were being interviewed on their working environment using semi-structured interviews. This method allows to capture enough data in a systematic way that allows a qualitative analysis and at the same time allowing the interviewer to add personal experiences or ways of thinking. This makes possible to capture data rich in detail about real-life problems. This gives as well the researchers the flexibility to identify additional issues raised by the interviews.

As innovation is more a social process, the snowballing approach (asks participants who else to interview) is used to identify the interviews.

We developed an exploratory study where the convenience sampling was used as initial process. Two logistics companies were selected given that they are working with global companies being their distribution center and value added to their product to send them to Central and South America. Innovation and customer value are the focus of these companies.

However, in this exploratory study we were limited to a small set of interviews and observations, we will continue doing more research in order to know the regional perception of actual innovation levels, the main reasons that impulse companies in Panama to be innovative and develop a logistics innovation process model for Panama.

### **Data Analysis**

Interviews were recorded and then typewritten to allow a comprehensive documentation. The structured questions (dichotomous, nominal, ordinal, interval and contingency questions) are statistical evaluated. Open-questions and information gathered on the interview were analyzed using the interview transcripts. Concepts were extracted from the transcripts by coding them. To guarantee the correct formulation of a concept, each paper were analyzed at the sentence and paragraph level to gain understanding of interviewee. Then, the similar concepts were compared with another interviewee on the same company and across transcripts of other companies.

The managers were asked about innovation and what dimensions has introduced innovations this company? Processes, Technology, Services / Products. The companies ranked about 80% in innovation in methodologies to improve processes as can be seen in the figure 1. The 10% of the companies that answered technology did not know about the right technology solution for their logistics problems in the organization

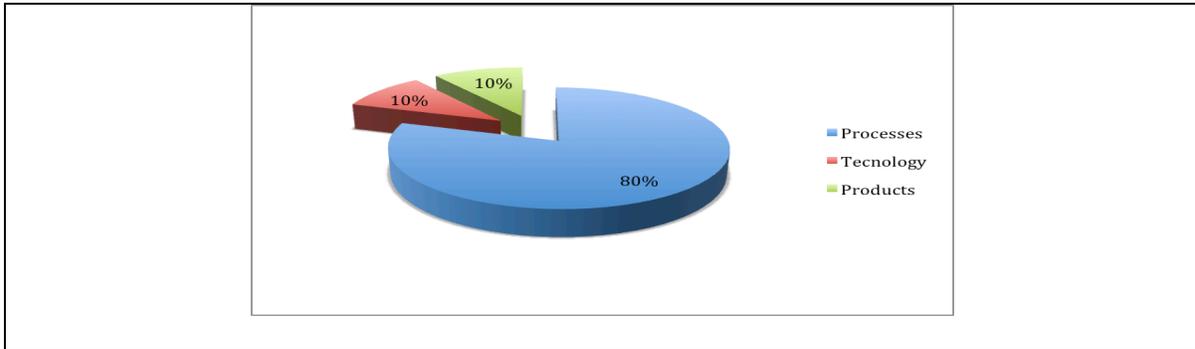


Figure 1 – Dimensions that the companies have introduced innovations

The companies do not make activities to generate ideas and implement new services or products logistics about 70 % of the time. For them innovation and development of new business are not very important. They do not exercise any kind of methodology to predict or estimate trends affecting logistics services or products.

About if this company does encourage innovation among its customers, its suppliers, partners or other, the answer was: customers at first level, as can be seen in figure 2.

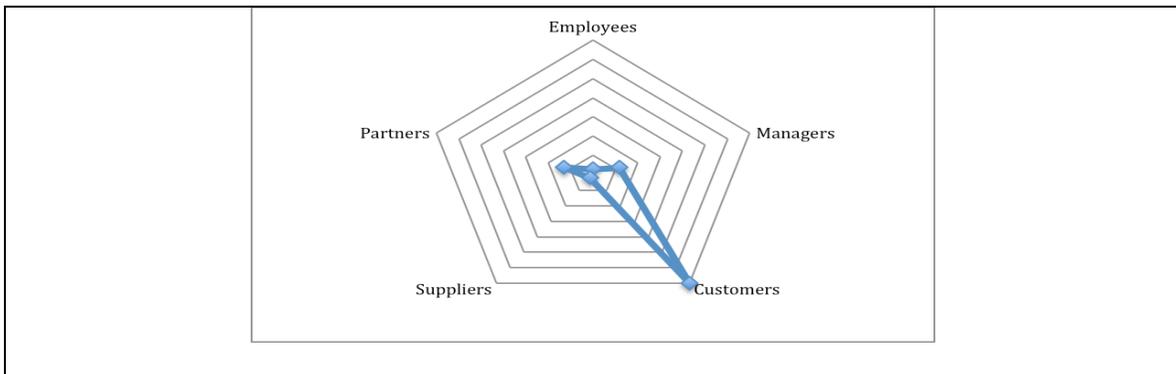


Figure 2 – Dimensions that the companies have introduced innovations

Innovation in the logistics sector according to the managers is not a priority but the market is pushing them to be innovative in order to satisfy their needs. For example in the new set of locks in Panama Canal expansion there will be an inventory of water due to the need of preserve water. The canal expansion is built because of the requirements of big vessels to transit the canal and this is an innovative way to develop new routes in the supply chain of companies. Logistics sector must be innovative in Panama and Panama should be a place for experiments and testing technologies and innovations in logistics.

The most important objective for organizations to innovate is to reduce cost according to the answers, however the market pushes the Panamanian companies to be innovative.

Nevertheless, for some companies innovation could come from all the people in the organization, for others, people are not educated neither empowered to innovate. There is not a program to motivate innovation.

Few companies use data and develop models to identify the need for changes,

improvements or innovation. They use time series with national and global variables using data from other companies that are specialized in collecting data.

The innovation process is described as follow: the director of the department collect the idea or suggestion to improve the processes and this is presented to the board of directors, they evaluate the idea and prove it, after that the people is awarded with money depending on the saving of money.

Little knowledge or experiences on managing innovation in the company is the biggest barrier that the organizations face to develop an innovation culture. Education in innovation management is needed because companies are not aware of the potential of their resources to innovate.

## **Conclusion**

There were presented some ideas about innovation and business development in the logistics sector in Panama.

The main drivers of the economy in Panama are transport and communications. The canal, ports, railroad, airports and the Free trade Zone compose the international logistics sector which represent the 24% of the GDP.

Innovation is important for the Panamanian companies in order to be competitive, but the poor adoption of technology to improve process performance is due to the lack of knowledge about the right solution, so education in innovative technologies for the management of supply chain and logistics is needed. It is necessary the spreading knowledge about innovative technologies and applications with more flexible deployment.

Partners and customers stimulate the process of innovation in companies which demand international quality standards and make it produce innovative solutions to collaborate and work.

As the marked push the innovation in few companies, others did not know about innovation, but when the concept was presented they showed interest on the process.

One next step should be develop in this study in order to know the scope of the innovation activities on the logistics sector on Panama and the main drivers of innovation and business development on Panama and what sources for the managerial level to get innovation ideas (tacit and codified knowledge).

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