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Visibility of Co-innovation in the Websites of Companies in Latin America

Visibilidad de la co-innovación en sitios Web de empresas en América Latina

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ABSTRACT

Open collaborative innovation, co-innovation or co-creation is a new trend in R+D that is being adopted by different organizations around the world. The present work seeks to answer the question of how large companies in Latin America are using their Websites to show their open collaborative innovation processes in the interaction with their stakeholders. The research seeks an approach to the knowledge of business innovation in the region, particularly in large companies. A total of 120 home pages of the largest companies in Mexico, Costa Rica, Colombia, Ecuador, Peru, Chile, Argentina and Brazil were reviewed, excluding multinationals whose capital of origin was external from the country analyzed. From this total of revised pages, the registration of co-innovation processes was evidenced in 43 websites, which is equivalent to 36% of the companies analyzed. The analysis of this information showed that open co-innovation prevails with integrated collaborators, mainly with customers and suppliers.

Keywords: Innovation, Websities management, large companies.

JEL Code: M15, O39.

RESUMEN

La innovación colaborativa abierta, co-innovación o co-creación es una nueva tendencia en investigación y desarrollo que está siendo adoptada por diferentes organizaciones en todo el mundo. El presente trabajo busca dar respuesta a ¿Cómo las grandes empresas de América Latina están utilizando sus sitios *Web* para visibilizar los procesos de innovación colaborativa abierta e interactuar con sus públicos de interés? La investigación es un acercamiento al conocimiento de la innovación empresarial en la región, en particular en las grandes empresas. Se revisaron en total 120 *home page* de las empresas más grandes de México, Costa Rica, Colombia, Ecuador, Perú, Chile, Argentina y Brasil, excluyendo las multinacionales cuyo capital de origen fuera externo al país analizado. De este total, se evidenció el registro de procesos de co-innovación en 43 sitios *Web*, lo que equivale al 36% de las empresas analizadas. El análisis de dicha información arrojó que prevalece la co-innovación abierta con colaboradores integrados, principalmente con clientes y proveedores.

Palabras clave: Innovación, Gestión de sitios *Web*, grandes empresas.

Código JEL: M15, O39.

INTRODUCTION

Traditionally, companies have developed and managed their innovation activities under closed models, from their Research, Development, and Innovation offices (R+D+I), with resources and knowledge of their own. However, the challenges in terms of costs and time to successfully carry out the process of transforming the idea in a product that can be marketed, or be a viable process, have opened the gates to a new model of open innovation (Mejía-Villa *et al.*, 2017).

In that sense, organizations have had to acknowledge the role played by the target stakeholders and the prominence that they have in decision-making. Innovation processes must fulfill the expectations of said stakeholders, since they will be the one judging, from the public domain, how pertinent entrepreneurial developments are (Bentele & Nothhaft, 2010). This phenomenon has become of interest to academia regarding open collaborative innovation and the paradigm of co-creation in which target stakeholders are involved in the development of new products (Chesbrough, 2003).

In this context and in the current communicative ecosystem (Scolari, 2015), for all those organizations – the ones born during the *dot com boom* at the beginning of the 21st century and the ones created during the industrial era and that overcame the turn of the century, and even for those that were created more recently – digital media has become a facilitating agent for the relationship between the organization and its stakeholders.

In addition, digital media is fundamental in the competitive consolidation of companies. In the words of Gálvez (2014), Information and Communication Technologies (ICTs) are supporting tools for the entrepreneurial management, and they contribute to improving competitiveness, innovation, and sustainability strategies. Ultimately, this has an impact on society in general terms.

Adopting ICTs can improve entrepreneurial performance since they accelerate communication and data processing, and this can help reduce the costs related to the decision-making process. They can also promote a substantial restructuration of the company, making processes more flexible and rational as well as improving communication channels with both clients and suppliers, thereby increasing their innovation capacity (Grazzi & Jung, 2016). In order to make organizations more visible inside the digital ecosystem, web pages or websites are developed. They represent fundamental channels to relate organizations to their target stakeholders. It is there that the organizations can show what their interests are as well as their mission, vision, objectives, philosophy, history and, of course, the best place to elicit

input from their stakeholders during open collaborative innovation processes. By 2004, Baeza et al. (2004) had already acknowledged the prominence of websites by noticing that they represent a technological step forward in the history of humankind and, therefore, have become indispensable to the whole world.

Webpages quickly became the best option to seek relevant information, and Internet browsers navigate you to the webpages of organizations that you might be interested in checking out. From that year, we have come a long way in the building of that digital tool. It is difficult to think of an organization, no matter how small it is, without a webpage as a window to the world and as its main means of communication with its target audience. However, the data provided by the press show that, in Mexico, only 10% of Small and Medium Enterprises (SMEs) have websites (El empresario, 2019). That situation can be attributed to the fact that companies are used to traditional marketing or to word-of-mouth recommendations to promote their products and services (Roberto, 2018).

Nevertheless, this technology is largely responsible for the fundamental change of work in the organizations and the way businesses are made in a globalized world, and they represent a challenge for companies in emerging countries. While the technologic gap between highly developed and emerging markets has become narrower in recent years, companies in Latin American countries are still adapting to the dynamics of market integration and to contact with those who use the Internet more and more for their personal relationships and commercial purposes (García *et al.,* 2018). However, the productivity profits propelled by ICTs widely varies from one country to the next and from one sector to another. According to Gazzi and Jung (2016), empirical evidence shows that the operational and organizational characteristics, which are specific to each company, determine the benefit that ICTs offer as well as the impact of their use.

ICTs seem to work as a facilitator that enables companies to use new processes and business practices as well as improves their performance. This is evident with a greater frequency in companies that invest in processes for organizational change and human capital. Those investments increase the absorption capacity and maximize the real impact of new technologies (Grazzi & Jung, 2016). Therefore, this article seeks to investigate how large companies in Latin America are using their websites to make their open collaborative innovation processes visible and to interact with their target stakeholders.

INNOVATION AND CO-INNOVATION

In order to speak specifically about digital media and entrepreneurial innovation, we must first define what innovation and open collaborative innovation is. Ciresa and Maloney (2017) assert that innovation means different things for different people and they base their concept

on Schumpeter (1934). According to his concept, innovation is the capacity to use knowledge to develop and apply new ideas, thus resulting in changes in production and the organizational structure. In that sense, innovation could be deemed as:

- The introduction of a new product or changes to an existing product
- A new process or technology in an industry
- The discovery of a new market
- Development of new sources of supplies and raw materials
- Changes in industrial organization

Innovation is more ample than invention, and it involves the commercial applications of digital technology, a new material, or new methods and processes. It involves the process of adopting existing technologies, copying, or emulating other products or adopting new managerial and organizational practices that have already been proved in other companies. Innovation also includes the invention of new technologies and disruptive commercial methods that represent a small part of everything that is considered innovation (Cirera & Maloney, 2017).

Gálvez (2004), quoting Castells and Pasola (2003), mentions that innovation is a synonym of change, and said that change can take place either in the manufacturing or management of products. The author also mentions that, according to the Spanish Association of Accountancy and Business Administration (AECA, 1995), innovation can be applicable to products, processes, or management. Therefore:

> *Innovation in products is materialized in the marketing of a new article or in the improvement of an existing product, innovating in processes offers new equipment or new production processes to the company, and innovation in management can be seen through changes or improvements in the purchasing direction, marketing and sales, etc.* (AECA, 1995, quoted by Gálvez, 2014).

Furthermore, innovation arises from human intellect or human capital, since it works as an accelerator or an agent that dynamizes processes. This means:

> *It acts as a strategic system to reveal, create, and incorporate change processes and the 'organizational learning model' to develop dynamic and technologic abilities to grow, strengthen and compete in turbulent surroundings* (Bueno *et al*., 2016).

Along this line, it is important to consider what is understood as investment in innovation, since innovation is not limited to the creation of new products and every entrepreneurial change is subject to the allocation of resources – whether they are physical, human, or financial. Therefore, investment in innovation takes into consideration both the resources dedicated to research and development as well as those resources that are used to cover intellectual property rights (patents, trademarks, industrial designs, copyright, and consulting services (Mohan, Strobl, & Watson, 2016 quoted by Grazzi & Pietrobelli, 2016)).

As part of the resources being used, the use and goal of ICTs must also be taken into consideration. For Gálvez (2014), ICTs facilitate the collection, storage, and exploitation of information. Nevertheless, in order to have an impact on innovation, the use of digital media must be based on the recognition of others, and on a sense of confidence in what stakeholders offer for the construction of novel changes.

Innovation can be open or closed. The closed innovation model is the one in which companies carry out their development processes exclusively inside the organization, following the maximum possible secrecy. They may have access to external sources of knowledge, but only for a specific stage of the innovation process and generally they do it through didactic collaborations. Companies incorporate – to such effect – research and development departments (R+D) to which highly qualified personnel are attached and able to keep the confidentiality of their development.

Open innovation enables the recognition of other external participants that contribute to the creation of new products, which might make the difference between keeping products traditional and taking a disruptive leap toward the transformation and adaptation to the needs of current generations. An example of this is the case of the company LEGO that, thanks to the alliances it secured with audio-visual entertainment companies, it managed to reinvent itself and get back a part of the market that it had lost due to video games (Gutiérrez *et al.,* 2018).

Co-innovation is a new paradigm in the field of value creation that comes from the integration of external and internal resources to create and co-create value. Co-innovation has different values for companies: it might increase market share and decrease marketing time, but it also increases results in the learning process and the knowledge of companies. This is a new strategy that gets clients to work, allowing them to become co-innovators (Bugshan, 2015).

The open innovation model or co-innovation is related to companies that can work with many different partners. It makes the distinction of three types of collaboration: first of all, innovation with specialized collaborators that focuses its participation on a unique point of the innovation process, generally in the initial part of the innovative idea. This is the case of companies that involve a wide set of stakeholders (universities, experts, research centers) at this stage of the creation of ideas. The second type includes integrated collaborators, and companies open their processes of innovation to the contributions of some highly identified partners that keep a tight relationship with the organization (suppliers, clients, and the internal personnel working in different agencies or departments).

A third model is applied to completely open enterprises that are able to handle a wide set of technological relationships that have an impact on the innovation process and that involve a

wide range of partners working in a network who could be either internal or external from the organization (Lazzarotti & Manzini, 2009).

Large international companies, such as Audi and Microsoft, are encouraging the creation of online communities, mainly consumer communities, to widen the understanding of their products and to open the discussion on new business lines. These are co-innovation or open collaborative innovation efforts that are possible thanks to ICTs that enrich the interaction process between companies and their clients and that become a powerful source of value creation for both parties (Bugshan, 2015).

Co-innovation is possible thanks to the development of social media that revolutionized the way in which consumers and company interact (Choudhury & Harrigan, 2014, quoted by Bugshan, 2015). Increasingly more companies are developing online communities to ease their interaction with their clients with the objective of co-creating. An additional advantage for a company is that online communities make it possible to socially interact with their consumers at a very low cost (Bugshan, 2015). Nevertheless, the first contact with stakeholders who want to participate in the innovation process takes place through the website, which is the main tool that companies use to establish relationships.

Advantages of co-innovation mediated trough ICTs

A case study conducted by Hatem Bugshan (2015) analyzed the behavior of the online community: *Dell IdeaStorm*. It provided some important results regarding the social interaction of the community online, since it showed that a sense of responsibility, involvement, and availability was created with the objective of sharing knowledge, thereby facilitating the configuration of social capital. Bugshan (2015) states that this online community enables end users to establish social interaction with other members of the community; being a member of said community develops their sense of responsibility. This sense of responsibility of the members of the community makes them feel like they should share knowledge and information, so that it is then used to develop existing ideas, create new ideas for an existing product, or develop completely new suggestions.

The online community, as a main factor of social capital, creates an environment in which members support each other for free – or at a very low cost – in comparison to the large investments that are made in innovation and development, closed innovation, or inside companies. The members of these communities feel committed toward all the other members, and this leads them to provide their ideas that might contribute to the improvement of a seminal idea or a solution to a certain problem that has been presented. Members share information and knowledge for a specific product with their peers, even though they have not met each other, and even though no economic compensation is given.

Bugshan (2015) asserts this is a way to create social capital as an important source of value creation in this community. Strengthened by social media, people feel attracted to this online community and wish to be a part of their areas of interest to develop a new idea. The author concludes that online communities are a productive tool to develop co-innovation since these communities facilitate the users' interconnectivity and develop social capital. With this open collaborative innovation system, the company can access novel ideas for the creation of new products and it also provides the members of the community with the chance to discuss the way in which the presented problems in existing products can be solved – problems that have already given way to complaints and claims by the users (Bugshan, 2015).

Nevertheless, Lazzarotti and Manzini (2009) conducted research together with 52 Italian companies. In it, they compare the two innovation models: open and closed. The research explored how open those innovation processes were as well as the number of stakeholders being worked with. They concluded that both models offer different degrees of benefits and costs. Moreover, the selection of the innovation model that is going to be followed greatly depends on strategy and the company's managerial features. Quoting Dahlander and Gann (2007), the authors say that it is not true that "the greater the openness, the better" because great openness can be translated into higher costs. Therefore, they propose intermediate approaches that can turn out to be interesting options in terms of benefits and costs (Lazzarotti & Manzini, 2009).

The role of ICTs in the Innovation Processes in Latin America

The research works that were checked suggest that there is a relationship between innovation, productivity, access, and usage of ICTs. Nevertheless, this relationship is not easily identifiable and, in Latin American, there are only a few empirical research studies that have been conducted on this (Grazzi & Pietrobelli, 2016). In spite of the lack of existing information, it can be asserted that, in modern economies, ICTs favor the development of new processes, they can make internal restructuring easier, more flexible processes, decrease capital requirements, and enable smaller inventories. It also makes external communication with suppliers, clients, and other companies easier, while it also facilitates the exchange of knowledge (Grazzi & Pietrobelli, 2016). Gálvez (2014) says there seems to be a close relationship between the results in the use of ICTs and innovation processes. This author conducted research that included 1,201 Colombian micro, small, and medium enterprises.

That research aimed to establish the relationship between the degree of usage of ICTs and innovation in that entrepreneurial segment. As a result, Gálvez (2014) concludes the usage of ICTs improves products, services, and the marketing of new products in a meaningful way. Furthermore, the research showed that using ICTs creates improvement changes in management, purchases, and supply management as well as in the processes of marketing and sales. However, it could not prove that the usage of ICTs could contribute to the improvement of productive processes or to favor the acquisition of new equipment.

On the other hand, the index of innovation developed by the *Bloomberg* news agency (2016) shows a list of the 50 most innovative countries in the planet in 2016. The list shows South Korea at the top, followed by Germany, Switzerland, Japan, Sweden, and Singapore. Among those 50 countries, only one Latin American country is included – Argentina – in the 49th position.

Grazzi et al. (2016) provide their take on the scenario showing the fact that the dissemination of ICTs is still low in Latin America and the Caribbean, even though an increasing trend can be seen. By 2014, according to the information provided by the International Union of Telecommunications (UIT), as quoted by Grazzi et al. (2016,) the penetration of the wide band for Europe, the United States, and Canada was 32 connections per 100 inhabitants. Latin America and the Caribbean only had 10 connections per 100 inhabitants.

In spite of the negative data provided by the UIT, a study performed by the Banco Mundial, carried out between 2009 and 2010, show the dissemination of wide band, the use of electronic mail, and the availability of a website by companies. The results are more optimistic, since almost 855 of the companies surveyed in Latin America and the Caribbean have a high-speed Internet connection, 90% use email as a means to communicate with their clients and suppliers, and 60% have their own website. This places the region as one of the areas with greater ICT penetration among developing countries (Grazzi *et al*., 2016). Nevertheless, the authors strongly criticize this, given that it only assesses the use of the most basic ICTs that, in other parts of the world, are taken for granted inside organizations.

Innovation implies the introduction of new products and discoveries or meaningful changes in the organization. In Latin America, innovation in the companies in the region is much more focused on adapting and acquiring machines and equipment, in technological emulation and transference since research and development are very expensive for these economies and the return of investment is only evident in the long term (Grazzi *et al*., 2016), which is a situation that is not financially viable for many companies.

Unstable markets and depending on internal consumption both limit companies from undertaking expensive, long-term projects. This situation places them in a vicious circle in which the scarcity of resources keeps them from developing their own innovation projects, without enabling them to enter new markets and improve their cash flow. Therefore, they still depend on local demand and face multinational competitors that are constantly investing and renewing themselves.

A report by the World Bank on innovation (Cirera & Maloney, 2017), shows a direct relationship between appropriation, absorption, and adaptation of technology and the growth

and development of countries. In the year 1900, the authors say countries like Argentina, Chile, Denmark, Sweden, and the southern part of the United States had similar levels of income per capita, but different capacities to innovate. Nordic countries and the United States accelerated their innovation, while Latin America lost terrain. In the twentieth century, Japan and other Asian tigers increased their capacity to innovate and to close the technological gap. Those countries that have not been able to innovate and apply technology have fewer possibilities to have updated industries that can advance, or to see new industries being born (Cirera & Maloney, 2017).

Even though the development of innovation is linked to universities, intellectual centers, and government institutions, analysts agree that the main generator of innovation is the entrepreneurial field. However, companies in developing countries and particularly those in Latin America, lack some skills, from basic accountancy tasks, design abilities for the facility, all the way to tools to plan a pluriannual scenario and identify relevant technological advancement or training personnel to adapt it. Without this entrepreneurial dynamism, government and educational institutions are missing an ideal partner that lets them multiply the innovation process (Cirera & Maloney, 2017).

On the other hand, Grazzi and Pietrobelli (2016) found a direct relationship between a low productivity of the production factors and the level of development of Latin American countries. Productivity is linked to entrepreneurial management and, according to the research of Grazzi and Pietrobelli (2016), it was stuck for fifty years, between 1960 and 2011. In that regard, the authors mention “the economic results of a country or sector will ultimately depend on the decisions being made at an entrepreneurial level” (p. 29).

METHODOLOGY

In order to establish an approximation about how large companies in Latin America are using the websites to make open collaborative innovation processes visible and interact with their target stakeholders, this research used an exploratory-descriptive methodology. It started checking 120 websites of those companies considered as the largest ones with domestic capital in eight countries within the region. The lists were taken from the classifications that had been published by the economy media of each country: Mexico (expansion.mx, 2018), Costa Rica (Quiminet, 2012; EKA, 2008), Colombia (Dinero, 2017), Peru (Economía, 2012) Chile (Economía, 2014), Ecuador (Ekos, 2018), Argentina (El Clarín, 2017), and Brazil (Economía, 2011).

Second, a content analysis was used. It took the main pages of each portal as the unit to be analyzed as well as their menus, navigation and browsing systems. The analysis categories were stipulated in terms of the identification of how the following elements were disclosed:

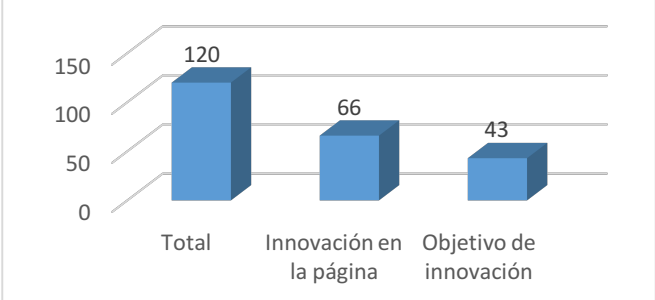
- Clear goals related to innovation processes, e.g. if innovation was performed to improve products or to satisfy the clients' expectations.
- Terms or code words related to innovation – innovates, innovation, innovating, ideas, new ideas, creation, and co-creation.

In some cases, browsing systems would take documents stored in each portal, which could not be accessed from the navigation menus. These documents, which were in formats other than HTML, were also checked. As a third step, following the concepts provided by Lazzarotti and Manzini (2009), the current process of each page being analyzed was classified, linking the concept to an objective in one of four types of innovation: 1) closed innovation; 2) open innovation or co-innovation; 3) open innovation or co-innovation with integrated collaborators; 4) fully open innovation. The following instance included identifying the type of audience that the website tried to appeal and that was being invited to participate in the open collaborative innovation process of the website. These categories were not predefined, and they were taken as emergent for each case. In addition, it was determined that several of the websites of the companies were linked to other pages or platforms specialized in innovation.

RESULTS

Among the approx. 120 websites that were analyzed, 66 of them include the word 'innovation', 'creation', or a similar word related to the concept of innovation. This means 55% of the websites that were analyzed. However, not every company that mentions innovation clearly includes an objective related to value creation through the performance of processes that involve new ideas. Only 43 of the websites that were checked (35.8%) have a record of a clear goal. In the same way, as it can be seen in Graph 1, companies that have a record of innovation processes in their web pages are unclear about the goal's formulation. Therefore, 41 entrepreneurial websites (34.1%) help making innovation processes visible, regardless of the existence of the statement of a clear innovation goal.

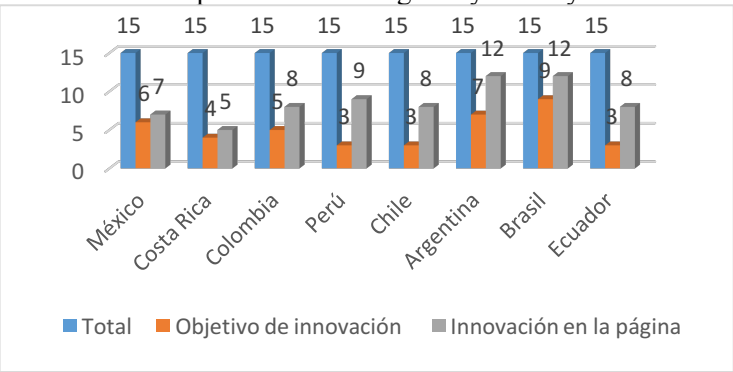
Graph 1. Companies that have a record of innovation processes in their web pages



Source: Own elaboration (in spanish).

When checking the existence of innovation goals by country (Graph 2), it can be observed that the companies in Brazil that were analyzed are the ones that show a larger number of websites with clear innovation goals stated (9, 60%), followed by Argentinian companies (7, 46.6%), and Mexican companies (5, 40%).

Graph 2. Innovation goal by country

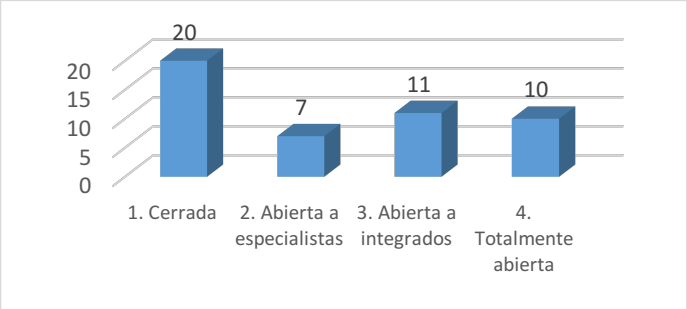


Source: Own elaboration (in spanish).

The following observation required linking information on innovation – recorded in the websites – to any of the four types of innovation categorized by Lazzarotti and Manzini (2009): 1) closed innovation; 2) open innovation or co-innovation with specialized collaborators; 3) open innovation or co-innovation with integrated collaborators; 4) fully open innovation.

The aggregated data (Graph 3), shows that 20 of the types of innovation that were observed belong to the closed innovation category, which means 41.6% of the hits in comparison to the number of websites that have clear innovation goals. Then, open collaborative innovation with integrated collaborators, 11 hits (22.9%), and fully open innovation with 20 hits (20.8%). When comparing this information with the total amount of websites that were analyzed (120), the percentages are considerably lower: closed innovation 16.6%; open collaborative innovation with specialized collaborators (5.8%); co-innovation with integrated collaborators (9.1%); fully open collaborative innovation (8.3%).

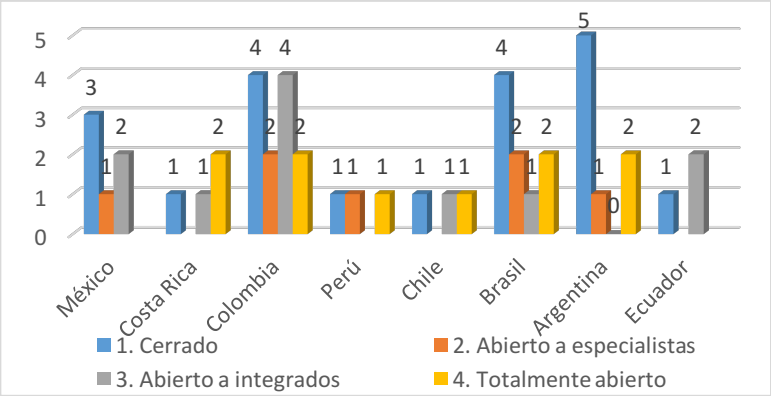
Graph 3. Types of innovation in *Websites*



Source: Own elaboration (in spanish).

When comparing this analysis to the records by country, we can see that open collaborative innovation, in any of its three types, can only be seen in one or two entrepreneurial websites (Graph 4). In some companies, two types of innovation processes can be seen, for example: closed for some developments related to innovation and development departments and open with integrated collaborators to support clients and suppliers in advance, which, in the long run, might benefit the eliciting company.

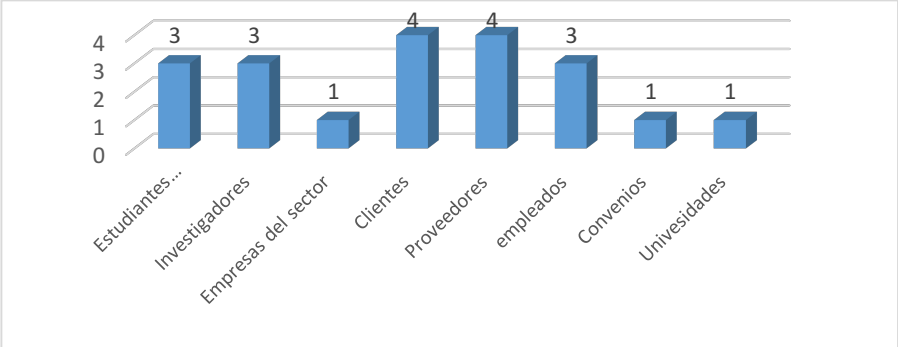
Graph 4. Types of innovation by country



Source: Own elaboration (in spanish).

The following analysis helps us identify the stakeholders that are invited to participate in the open collaborative innovation processes. At this point, most of the pages tend not to be explicit in showing who is invited. Out of the records that clearly show it, we can identify that clients are suppliers and the ones leading the invitations, followed by college students and specialized researchers (Graph 5).

Graph 5
Stakeholders that are invited to participate in the open collaborative innovation processes



Source: Own elaboration (in spanish).

Table 1
Companies that have a record of innovation processes in websites

México	Colombia	Costa Rica	Perú	Chile	Brasil	Ecuador	Argentina
Grupo Wendy (1)	Grupo Éxito (3)	Fitco (1)	Antamina (1)	Empresas Copec (1)	Petrobras (1)	Grupo Difare (1)	Molinos (4)
Estafeta México (1)	Grupo Sura (1)	Compañía Nacional de Luz y Fuerza (4)	Graña y Montero (4)	Codelco (3)	Vale (4)	Pronaca (3)	Grupo Bago (1)
Pemex (2)	Ecopetrol (3)	Instituto Costarricense de Acueducto y Alcantarillado (4)		Enel (4)	Electrobras (1)	La Fabril (3)	Grupo Arcor (1) (2)
Bimbo (3)	EPM (4)	Universidad de Costa Rica (3)			Odebrech (1)		Osde (1)
Cemex (3)	Grupo Argos (1)				JBS (3)		YPF (1) (2)
Up Si Vale (1)	ISA (2) (3)				Embraer (2)		Cervecería Quilmes (1)
	Grupo Nutresa (1) (4)				Grupo PÃO DE AÇÚCAR - GPA- (2)		Osde (1)
	Bavaria (1)				Votorantim		
					BRF (1)		

(1) Cerrada, (2) abierta con colaboradores especializados (3) abierta con colaboradores integrados (4) totalmente abierta
Source: Own elaboration (in spanish).

As a part of the observations that were performed, it was seen that some of the sites that had clear innovation goals also included links to other specialized sites or platforms. Some of those links take to extensions of the company, for example: Mexico: Bimbo Eleva Platform. Blue Box Methodology; Colombia: Grupo Sura: Sura Innova, Ecopetrol: registration platform – electronic mail, EPM: www.conexionviva.com Parque Explora and Nutresa: Imagix 2.0; Brazil: Electobrás: CEPEL (http://www.cepel.br/); Peru: Graña y Montero: Through the Espacio Azul Civil Association PI Engineering Portal - Impulso Alimentación; Chile: ENEL: Enel Santiago Innovation Hub and Open startup; Argentina: Molinos; Ecuador: Grupo Difare: Sistema Neptuno; Costa Rica: Compañía Nacional de Luz y Fuerza: Microsite of the Virtual CNFL Community – email accounts and the Costa Rican Institute of Water and Sewage: Wiki library. In Table 1, we can see the companies that make innovation processes visible on their web sites as well as the types of innovation that were identified in each one of them. As aforementioned, some companies show two types of innovation.

DISCUSSION AND CONCLUSIONS

Comparing the websites of some of the largest companies in Latin America, with domestic original capital, allows for making it evident that entrepreneurial innovation processes are being developed and that some of those organizations think it is relevant to make innovation visible on their sites or corporate portals. Grazzi and Pietrobelli (2016) stated that there is a relationship between innovation, productivity, access, and usage of ICTs, and that such a relationship is not easily identifiable. Analyzing websites allows us to have an empiric approximation of the use of ICTs in innovative processes in the region.

Most of the results obtained from this observation of portals lead us to the conclusion that a large part of the entrepreneurial innovation in the region is closed. Nevertheless, there are sufficient examples of open collaborative innovation in the three types that were mentioned by Lazzarotti and Manzini (2009).

Large companies in the region are also exploring how to use online communities that, as Bugshan mentions (2015), have different values for the companies – they can increase the market share and decrease the marketing time. They also increase the learning results and the knowledge of organizations. This is a new strategy that gets clients to work, enabling them to become co-innovators.

Cirera and Maloney (2017) mention companies in developing countries, and specifically Latin American companies, that lack the capacity of facilitating innovation. They say that, among other aspects, they lack the capacity to perform basic accounting tasks, the facility's design skills, and even the tools to plan a pluriannual scenario and identifying relevant technological advancement and training personnel to adapt it.

It is likely that the authors might have based their observations in the behavior and the features of small and micro companies in the region since this study is focused on the existence of innovation processes – both closed and open – in larger companies. Even though this situation can only be seen in 36% of the companies that were analyzed (Graph 3), it is worth mentioning that it only applies to those companies that wish to make said process visible through their websites. This point also shines an optimistic light on entrepreneurial dynamism in the region and on the articulation that is taking place among some of the companies that were researched and some educational and government organizations. It is noteworthy that the innovative ecosystem is starting to become evident with greater strength in Brazil, Argentina, Mexico, and Colombia (Graph 4).

The open collaborative innovation strategies that were found on portals and websites include: contests and challenges, trainings, support for original ideas, and online communities. New research could approach, in greater depth, the way in which these innovation processes – involving different stakeholders – are being carried out, and particularly the way in which online communities related to entrepreneurial innovation processes are being implemented in Latin America. The relationship between online communities and the creation of social capital is especially interesting. As Bugshan mentions (2015), this type of community helps build environments where members help other members – for free or at a very low cost compared to the large investments being made in innovation and development.

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