

Innovation committees, a tool for business sustainability

Los comités de innovación, herramienta para la sostenibilidad de las empresas

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Abstract

The Innovation Committees in companies manage to obtain significant results in the creation of intellectual property intangibles, which increases their income, reduces costs and maintains a project portfolio of new products on the market, in an agile manner and aligned with market needs. Against with open and global competition, it is important for companies to specialize and innovate to give sustainability to their project, prosper and grow. To achieve this, we propose an Innovation Committee model as a differentiator to improve business qualities and skills. Thus, manage innovation and develop competitiveness with a new model of organization of an Innovation Committee. Our hypothesis is that if the company has an Innovation Committee, its life expectancy will increase and it will adapt to global conditions, guaranteeing its existence in the future. The phenomenon of the Innovation Committees had no impact or momentum because they were not defined in their organization, functions and roles, and they were not correlated to innovation management models. The research presented is exploratory. The results obtained and the beta tests of the Innovation Committee have made it possible to obtain significant results for future studies. An Innovation Committee is pertinent and effective, since from the beginning it provides skills, competencies and capacities to manage competitiveness and sustainable growth.

Innovation, Innovation Committees, automotive industry, competitiveness, sustainability, value

Resumen

Los Comité de Innovación en las empresas logran obtener resultados significativos en la creación de intangibles de propiedad intelectual, que incrementa sus ingresos, reduce costos y mantiene una cartera de proyectos de nuevos productos en el mercado, de manera ágil y alineados a las necesidades del mercado. Frente a una competencia abierta y global es de importancia para las empresas, especializarse e innovar para dar sustentabilidad a su proyecto, prosperar y crecer. Para lograrlo, proponemos un modelo de Comité de Innovación como diferenciador para mejorar las cualidades y habilidades empresariales. Así lograr gestionar la innovación y desarrollar la competitividad con un nuevo modelo de organización de un Comité de Innovación. Nuestra hipótesis es que, si la empresa cuenta con un Comité de Innovación, aumentará su esperanza de vida y se adaptará a las condiciones globales, garantizando su existencia en el futuro. El fenómeno de los Comités de Innovación no tuvo impacto ni impulso debido a que no fueron definidos en su organización, funciones y roles, y no se correlacionaron a modelos de gestión de innovación. La investigación presentada es exploratoria. Los resultados obtenidos y las pruebas beta del Comité de Innovación han permitido obtener resultados significativos para futuros estudios. Es pertinente y efectivo un Comité de Innovación, ya que desde el inicio dota de habilidades, competencias y capacidades para gestionar la competitividad y el crecimiento sustentable.

Innovación, Comité de innovación, Competitividad, Sustentabilidad, Valor

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Introduction

The innovation committee is defined as a team of multidisciplinary people (Van Knippenberg and Schippers, 2017) from different areas of the organisation, dedicated to lead the implementation and management of innovation to perform a given cross-cutting task, working together to carry out a project, as well as in charge of a specific issue to review, question, issue opinions and elaborate opinions on projects. It is a space for the debate of ideas and opinions on the company's current opportunities in order to implement tools that differentiate the company from its competitors. It is the executive body of the company, whose mission will be to align innovation activities and market situations with the company's strategy, as well as to manage change and the culture of innovation, generating value to the company and competitiveness (it can be made up of internal and external temporary staff). The Innovation Committee generates information, projects, prototypes; carries out studies, applies methodologies, generates good information to work with (BIT) and good information to make decisions (BIPTD). It will also search for, identify, develop and implement new ways of doing things (or, in other words, innovate).

The global economic world has a set of factors measuring competitiveness in an open and silent way, unnoticed by companies. It is important for companies to know that they are in competition, so it is necessary to specialise and innovate in order to give sustainability to their business project. In the face of the economic crisis, we must manage the permanence, growth and sustainability of companies. Innovation is not part of the basis of the infrastructure of companies, so effective innovation management is necessary to facilitate the selection of projects aligned with the real needs of the market. On the other hand, the lack of technology watch processes such as data mining analysis causes a lack of capacity to conclude and make market-aligned decisions in a timely manner.

The lack of innovation management skills hinders the generation, evaluation and selection of projects aligned to the real needs of the market, project execution processes are executed without sense and consequently expect as a result a stroke of luck. Skills are understood as the ability to do a thing correctly and with ease, becoming activities that are executed habitually, generating a specialisation, focusing on a specific activity (Cambridge Dictionary, 2021).

The needs of consumers are a constant factor of change and, in addition, the presence of more prepared and aggressive competition (with better prices, credit systems, innovations, novelties, work systems, advertising, marketing, information technology and technological equipment). In this environment, a model is needed for the development of skills and competences to generate new viable solutions for the sustainability of organisations (De la Peña, 2012).

Currently, there are several questions about innovation management, which focus on the following.

What are the skills I need to acquire to do and manage innovation?

How to manage knowledge, generate and develop more of it, to turn it into money?

How to generate and accelerate the process of human capital development in innovation management?

How to develop new products, processes, new materials, services and business models in an agile way?

How to be more competitive and sustainable in business?

How to maintain a balance between innovation and humanisation?

Satisfying customer experience is the added value that multiplies joy and happiness, which causes diffusion, promotion and recommendations in the customer's environment in a direct way, without any cost for the company itself. In society there is a great interest in the consumer market for products that have added value; customers want to solve their problems by maximising their payment versus the service or product purchased, with a differentiation of performance, cost, customer experience and easy and quick acquisition. This demands a series of new products, processes and services, so that they replace the old in a faster way, in less time, with more value-added deliverables and lower costs (Porter, 1991).

Companies see their growth and development as a function of their cash flow, but they confuse the difference between growth and development, as growth implies a quantitative increase in what is related to money, revenues and profits. They lose sight of the fact that development is about improving qualities in order to remain relevant in the marketplace, as well as meeting the present and future needs of their customers. Businesses face the incubation and growth stages without the tools to compete in the world-class domestic and global marketplace. Consumer needs are a constant factor of change, and with more prepared and aggressive competition.

In this environment, it is necessary to develop creative skills and competences to generate new viable and real solutions to problems, the generation of new values for the client, added values for the company itself, the community and society, which require the development of innovation competences. As a solution to the above, we propose as an objective to create and integrate innovation committees that allow the management of competitiveness and sustainability through an innovation management model. Therefore it is necessary to integrate a multidisciplinary group that manages the development of competences and innovation. In fact, there is no comprehensive tool on the market for the selection and integration, organisation, formation and development of Innovation Committees (De la Peña, 2021).

Literature review

Concept of innovation

In the review of the literature on the concept of innovation in journals, books, essays, reports, websites, carried out over a period of 20 years, the summary of which is described in table 1, we observed authors defining this concept with multiple nuances:

Author	Ideas that relate to Innovation
Joseph Schumpeter (1939)	New products or goods, new process or method, market introduction, commercialisation, new value.
Freeman (1974)	New products or goods, new process or method, market introduction, commercialisation.
Gee (1981)	Idea, new products or goods, new process or method, market introduction.
Pavón and Goodman (1981)	New products or goods, new process or method.
Nelson (1982)	A change with a break
West and Farr (1990)	Idea, new products or goods, new process or method, benefit to society.
Barcelo (1992)	New products or goods, new process or method, market introduction.
Rothwell (1994)	Idea, new products or goods, new process or method, market introduction, commercialisation.
Pavón and Hidalgo (1997)	New products or goods, new process or method
Machado (1997)	Commercialisation, competitiveness
Sandven and Baratte (1999)	New products or goods, new process or method, new value, new value, new products or goods, new process or method, new value
Oslo Manual (2005)	Idea, creative, new products or goods, commercialisation, Commercialisation, competitiveness
Holcombe (2007)	Progress of a country
Alejandro Schnarch Kirberg (2008)	Change
Galindo Cota (2008)	Idea, creative, knowledge transformation
Mario Morales and Angélica León (2013)	Idea, creative, new value, execution
Lorenzo García (2016)	Idea, market introduction
Alberto Tundidor Díaz (2016)	New value
Jacinto Yáñez Rivera (2017)	Significant change
José Antonio Rodero (2019)	Idea, new products or goods, new process or method, knowledge transformation.
Royal Spanish Academy (2020)	Introduction of novelty

Table 1 Literature review on the concepts of innovation
Source: Own elaboration. De la Peña, F. (2022)

Most of them limit it to a new product, process and method; this is where we see the greatest agreement among the authors. However, in order not to leave the contributions in oblivion, it is convenient to define it in the following way, as it has been considered in previous research (de la Peña, 2021):

Innovation is an idea-solution, new or substantially improved, that anticipates the needs and problems of the customer in the future; that solves a problem posed, defined, described, analysed, measured, validated, reflected upon and that has a proven market opportunity, which is executed with the sense of a project. Resulting in the solution to the problem, with a new added value that makes customers happy and generates a satisfaction and differentiation against market competitors, creating a competitive advantage contemplated in the dissemination and business model, which is to make the introduction to the market. Innovation starts with the need, the customer's problem and ends with the satisfaction and solution to the customer's problem, presently and in the future. Innovation starts in the humanities and not in the technical areas. Creating new forms of value, anticipating future ones, identifying consumer needs, and bringing the future into the present is innovation (De la Peña, 2021).

Evaluados articles for qualitative extraction

1	VAN KNIPPENBERG, D., y SCHIPPERS, M. C. (2017). <i>Work group diversity</i> . En Annual Review of Psychology, vol. 58, pp. 515-541. Doi: 10.1146 / annurev.psych.58.110405.085546.
2	REDPATH, N., O'CONNELL, J.F., AND WARNOCK S, D. (2017). THE STRATEGIC IMPACT OF AIRLINE GROUP DIVERSIFICATION: THE CASES OF EMIRATES AND LUFTHANSA. In Journal of Air Transport Management, Volume 64, Part B, pp121-138. DOI:10.1016/j.jairtraman.2016.08.009
3	ZARTHA, J. & SOLLEIRO, JOSE & MONTES HINCAPIÉ, JUAN & ZARTA, RAUL. (2020). Innovation Management Models -A Literature Review. 10. 175.
4	RAMDANI, B., BINSALF, A. AND BOUKRAMI, E. (2019), "Business model innovation: a review and research agenda", New England Journal of Entrepreneurship, Vol. 22 No. 2, pp. 89-108. https://doi.org/10.1108/NEJE-06-2019-0030
5	SAREM, M. A. (1984). A classification and review of models of the intra firm innovation process. En R & D Management, vol. 14, núm. 10, pp. 11-24.
6	Atalay, M., Anafarta, N. and Sarvan, F. (2013) The Relationship between Innovation and Firm Performance: An Empirical Evidence from Turkish Automotive Supplier Industry. Procedia-Ciencias Sociales y del Comportamiento, 75, 226-235.
7	Caetano, I. (2017). Standardization and innovation management. Journal of innovation management, 5(2), 8-14. https://doi: 10.24840/2183-0606_005.002_0003.
8	Dziallas, M., & Blind, K. (2019). Innovation indicators throughout the innovation process: An extensive literature analysis. Technovation, 80-81, 3-29. https://doi.org/10.1016/j.technovation.2018.05.005

9	Garzón, M. A., e Ibarra, A. (2013). Innovación empresarial, difusión, definiciones y tipología. Una revisión de literatura. Dimensión empresarial, 11(1), 45-60.
10	Kahn, K. (2018). Understanding innovation. Business Horizons, 61(3), 453-460. https://doi.org/10.1016/j.bushor.2018.01.011
11	Guerra, S. & Blanco Jiménez, Monica & López, O. & De Negocios, Innovaciones. (2008). Evolución de los modelos de la gestión de innovación (Evolution of innovation administration models). Innovaciones de Negocios. 5. 251-264. Gestión de la Innovación InnOvaciOnes de NegOciOs 5(2): 251 -264, 2009 © 2009 UANL, Impreso en México (ISSN 1665-9627)
12	J Milena, A. (2019). Metodología para la identificación de factores que inciden en la dirección estratégica para el desarrollo de procesos de innovación. Caso: Pequeñas empresas del software Colombia. [Tesis de maestría no publicada, Universidad Internacional Iberoamericana].
13	J Morris, L. (2015). The innovation formula: the guidebook to innovation for small business leaders and entrepreneurs. Innovation Academy LLC.
14	Naranjo, V., y Calderón, H. (2015). Construyendo una cultura de innovación. Una propuesta de transformación cultural. Estudios Gerenciales, 31(135), 223-236. https://doi.org/10.1016/j.estger.2014.12.005
15	OECD/Eurostat. (2018). Oslo Manual 2018: Guidelines for collecting, reporting and using data on innovation, 4th edition. OECD Publishing. https://doi.org/10.1787/9789264304604-en
16	OECD. (2015) Frascati Manual 2015: Guidelines for collecting and reporting data on research and experimental development. OECD Publishing. https://www.oecd-ilibrary.org/docserver/9789264239012-en.pdf?expires=1564529071&id=id&accname=guest&checksum=3877ED5C3CA71F7B7F8EFE64446428DB
17	Pemberthy Gallo, L. S., Plazas Tenorio, A., & Castillo Molina, Y. Y. (2013). Núcleos de Innovación: un modelo de desarrollo competitivo para el Cauca. Punto De Vista, 3(4). https://doi.org/10.15765/pdv.v3i4.92
18	Rábade, H., Alfaro, J. (2008). Claves para un comité de nuevos productos. Harvard Deusto Marketing y Ventas, (86), 6-13. http://www.harvard-deusto.com/frontal/deusto/revista1.asp?cod=3
19	ROBAYO ACUNA, Paula Viviana. La innovación como proceso y su gestión en la organización: una aplicación para el sector gráfico colombiano. suma neg. [online]. 2016, vol.7, n.16, pp.125-140. ISSN 2215-910X. https://doi.org/10.1016/j.sumneg.2016.02.007.
20	Saunila, M., & Ukko, J. (2014). Intangible aspects of innovation capability in SMEs: Impacts of size and industry. Journal of Engineering and Technology Management, 33, 32-46. https://doi: 10.1016/j.jengtecman.2014.02.002
21	Seido, N., Pavanelli, S., & Elaine, V. (2014). Innovation management processes, their internal organizational elements and contextual factors: An investigation in Brazil. Journal of Engineering and Technology Management, 33, 63-92. https://doi.org/10.1016/j.jengtecman.2014.02.004
22	Vrgovic, P., Vidicki, P., Glassman, B., & Walton, A. (2012). Open innovation for SMEs in developing countries - An intermediated communication network model for collaboration beyond obstacles. Innovation: Management, Policy & Practice, 14(3), 290-302. https://10.5172/impp.2012.587
23	DE LA PEÑA, Fernando (2012). Desarrollo de un modelo de formación y desarrollo de talento humano para equipos de trabajo de investigación y desarrollo de ciencia aplicada, en el sector público de la rama industrial automotriz en México. México. Fundación Universitaria Iberoamericana.
24	SAREM, M. A. (1984). A classification and review of models of the intra firm innovation process. En R & D Management, vol. 14, núm. 10, pp. 11-24.
25	TAKEUCHI, H., y NONAKA, I. (1986). The new product development game. Stop running the relay race and take up rugby. En Harvard Business Review, vol. enero-febrero, pp. 137-146.

Table 2 Items assessed for qualitative extraction
Source: Own elaboration. De la Peña, F. (2022)

The different models of innovation management and their approach to the concept of innovation committee

From the outset, the models mentioned in the literature do not refer to a model of innovation formation, interlinked with systematic activities and functions for innovation. Some authors mention that the development of skills and competences are vital characteristics for successful revenue growth (Redpath, O'Connell and Warnock, 2017), but they do not tell us which skills, they mention that knowledge exists and that it must be sought and acquired. We see in Rothwell's linear model a sequential and ordered character, without feedback; we do not see cross-cutting processes of knowledge management, technology and intelligence, nor feedback with the market and the environment.

Rothwell and Zegveld's (1985) mixed innovation model broadens the view towards market needs and a correlation with the state of the art; transversally, it starts from the need and ends at commercialisation in the market. The integrated model of the technological innovation process, developed by Toyota and Nissan (Nuchera, León and Pavón, 2002), makes a reference to group meeting or organisation, without mentioning the type or form of group; nor does it give us an idea of the organisation and formation of the teams that develop the innovation.

In the Networked Innovation Model, efforts to achieve better integration between product and production strategies (design for manufacture), learning from internal and external experiences, knowledge accumulation and knowledge sharing persevere; it does not mention the team or innovation formation model.

We consider that any innovation model that does not have a specific definition of the concept and its Innovation Formation Model will be difficult to fully understand and comprehend. The Innovation Training Model should have cross-cutting activities collaboratively; and within the process of knowledge management, intelligence, creativity, marketing, organisational development, so as to enable the detection of possible emerging technologies and methodologies, which can determine the new trends in the sector.

To take advantage of the organisation's knowledge to reduce uncertainty and risks about the future, as well as to evaluate new markets in order to project the company's growth, generating the competitive advantage that will allow it to differentiate itself from the competition. In these models, the concept of innovation management is presented as a role for a team or group, but they do not introduce the aspect of an integral Model for Innovation Formation, the management of innovation culture and knowledge.

As can be seen in the previous section, none of the models described make explicit reference to the existence or need for an Innovation Committee that interrelates with the systemic activities and functions necessary for the development of the innovation process. Nothing is indicated about the existing interaction with change management. Only Rothwell and Zegveld's (1985) mixed innovation model broadens the view to needs, the market, and a correlation with the state of the art; transversally, it starts from the need and ends at commercialisation in the market.

The integrated model of the technological innovation process, developed by Toyota and Nissan (Nuchera, León and Pavón, 2002), refers to a group meeting or organisation, without defining the type or form of group; nor does it give us an idea of the organisation and formation of the teams that develop the innovation. In the Networked Innovation Model, efforts persevere to achieve better integration between product and production strategies (design for manufacture); learning from internal and external experiences; knowledge accumulation and sharing.

The missing piece in these models is monitoring, as adhering to one of the models without adequate monitoring of the models can lead to avoidable drawbacks during innovation, where there can be no risk control even though good innovation consists of it (Rothwell, 1994). A model that does not have an Innovation Committee, a multidisciplinary team and does not have transversal technological surveillance, will have a very weak strategy and its innovations will not be agile or aligned to the market.



Figure 1 Competitive intelligence: a transversal and permanent activity of the Innovation Committee (De la Peña, 2021)

Technology watch and competitive intelligence, as a transversal and permanent activity, is fundamental for the knowledge of the organisation's environment, as well as for the analysis, interpretation and communication of information of strategic value, which is transmitted to decision-makers in the organisation, including those related to the innovation system, to avoid technological, social and commercial surprises, and to have elements to evaluate the strengths and weaknesses of competitors, as well as to identify one's own; on the other hand, to take advantage of the organisation's knowledge to reduce uncertainty and risks about the future, as well as to evaluate new markets in order to project the company's growth. The analysis of information in this process allows management to visualise different opportunities and possible scenarios, and to make strategic decisions to allocate resources, develop technological projects, innovate and realise business opportunities that increase the organisation's competitiveness. It also allows to bring together the dispersed information and experience that the organisation has used for its technological development, converting these efforts into a systematic and permanent process that acquires greater value as part of a technology management system, and generating the competitive advantage that will allow differentiation from the competition. This will produce competitive intelligence = technology watch, technology foresight, knowledge management. "One can be forgiven for a mistake in innovation, but never be surprised" (De la Peña, 2021).

Conclusions from the literature

Based on the literature review, it is concluded that no author has mentioned or analysed the concept of Innovation Committees. Therefore, the exploratory research strategy is feasible and necessary.

In our systematic review, we have the following question to answer: Why didn't Innovation Committees have positive impacts on business history?

The phenomenon of Innovation Committees lacked momentum, novelty and popularity. Innovation Committees were never defined in innovation management models; integration, selection processes, training and skills development were not discussed. They had no momentum, no consistency, and therefore no positive outcome or impact on business communities.

The purpose of this synthesis is related to the Innovation Committee, its constitution, its organisation, the definition of the cross-cutting roles of its members, as well as its training and capacity building model for innovation skills development. As a summary of this review of the state of the art, it can be seen how different models of innovation management with different characteristics are proposed. However, the models analysed do not propose an Innovation Committee.

Method

The research has a qualitative exploratory character with regard to the application of a consultancy model, but also seeks to interpret quantitative results generated from the integration of an innovation committee; the technique employed was to use and review the current literature, using the prism diagram for the analysis of the available information and thus develop the beta test in different sectors of the industry, where the training model of the present work was applied from the consulting services of the company Innovaciencias, through the observational study of 5 cases as a sample.

Data synthesis: there were 71 meta-analysis reports in the databases published in different journals, of which four articles were selected: mentioned in table 2, being eligible the themes of innovation training. In the technological monitoring activity carried out with a systematic review and its meta-analysis, following the PRISMA methodology, on the research directly related to the present study (see figure 2), no document was found that refers to an innovation model correlated with knowledge management.

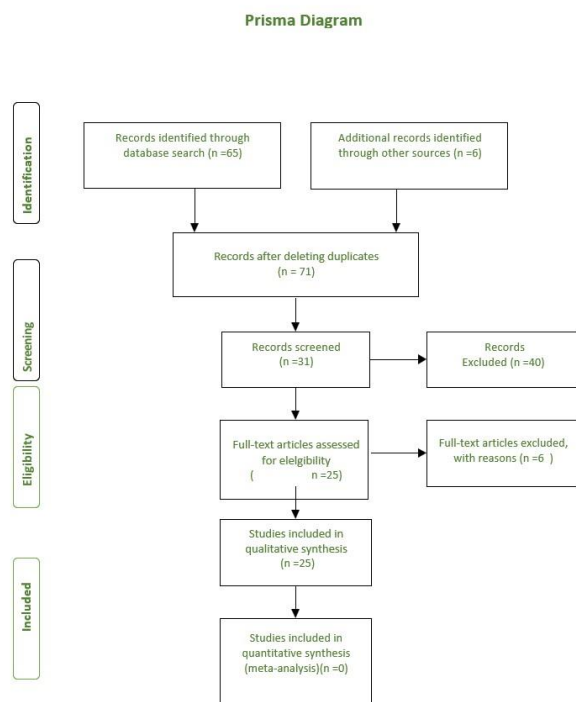


Figure 2 Prism diagram

Source: Own elaboration, 2022

We also made observations on the problem of training and the dual execution of functions within the organisations of individuals, and observed the results, applying statistical methods.

The data collection was carried out through interviews with managers of the companies that agreed to participate; the information we sought to obtain was the following: the portfolio of the number of projects, as well as the reduction of costs and their sales, applying the proposed model to companies in the automotive sector exclusively, and its limitation is the lack of data and values of other intangible items.

We observe how it impacts and the results generated by the application of a skills training model for innovation management:

The initial model of the consulting firm innovaciencias

It is a holistic, basic and integral training model that develops a new culture of green, sustainable, social and human innovation; it enables the development of talent, knowledge and intelligence. Therefore, training must cover both technical areas and humanities areas.

In systems thinking, the innovaciencias model is given by the simultaneous formation of a harmonious interaction between characteristics of an innovative human person, the selection and assessment of ideas, and a constant technological vigilance (Fig. 3).



Figure 3 The Innovation Formation Model

Source: (De la Peña, 2012)

Innovaciencias, with its set of sciences, techniques and methodologies, are the basic and necessary tools for innovation management. We can observe in the model that the first training process is to know the human person; the processes of integral training are directly related to anthropological and human processes, ethics, and moral, philosophical, religious and natural principles. The participant has to discover himself as a human being, who is and is part of the cycle of life, and his relationship with the infinite universe. The development of emotional intelligence is to heal one's own history and to try to live happily and gratefully. Human training is required to be able to identify the human needs and problems of future clients, as well as to know how to identify what makes your client happy. The tool is a solution to the problem of companies in the training and development of innovation management skills, because the tool complements the technical and scientific knowledge acquired, generates new knowledge about the human person and provides social training, allowing to generate more complete innovations, with sense and alignment in the market, in a more social and human way. The Model works transversally and collaboratively in the process of knowledge management, intelligence, creativity, marketing, organisational development, so as to enable the detection of possible technologies, emerging methodologies that can determine the trends of the sector and new knowledge.

The aim of innovaciencas

Initially, the consultancy focuses on basic and integral holistic training that facilitates the development of knowledge, social responsibility, intelligence, creativity, innovation, emotional balance, sustainability, self-regulation and self-knowledge, as well as the development of the different multiple intelligences, skills, technical and management capacities; the development of willpower, emotional balance, self-regulation, self-knowledge; and the development of human talent with a sustainable and socially responsible culture, allowing companies to be both competitive and sustainable in time and form. For the purposes of this work, the consultant's objective was to develop a comprehensive training model in client companies for the appropriate management of innovation through the creation of committees to regulate and monitor the procedure.

The expected result

The purpose of the study is to demonstrate that companies that have an innovation training model will increase their life expectancy in the market, and will adapt to global market conditions quickly, thus guaranteeing their existence in the future by generating new projects, revenues and profits. Likewise, to demonstrate that the model of Innovation Committees of Innovaciencas consultancy, its methodologies and techniques, with its training models, are tools that respond to the needs of companies for the continuous improvement of innovation skills and competences for the development of competitiveness and growth of companies, providing them with sustainability and permanence in the process of strengthening through the practice of innovation. The implementation is through training courses and working meetings.

Innovation model

This new model (figure 4) has five basic activities (in green) that are correlated in a transversal and permanent way, as well as knowledge management and training (the Innovation Committee will have to live the experience of learning by doing; it will also learn from its successes and its mistakes, therefore, it will have to be in a permanent process of education and training), technology watch, change management and the review of the infrastructure to assess the capacity of the management of the projects. Committee members will have dual roles within the organisation, covering both their position and their organisational role; the second will be their role within the committee, which is directly linked to their organisational activity. In this new model, unlike the others, the novelty is that it starts from the problem statement and the cross-cutting functions, as well as the five basic functions, which are more detailed and specific than in the other models. The transversal functions are present in each of the activities, governing, aligning, justifying and supporting the projects in order to make the model successful and competitive.

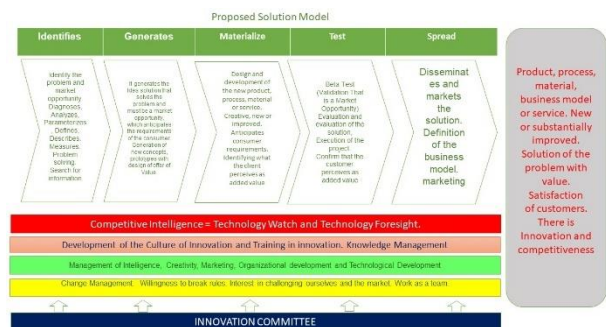


Figure 4 Innovation Management Solution Model

Source: (De la Peña, 2021) [5]

Objectives of the innovation committee

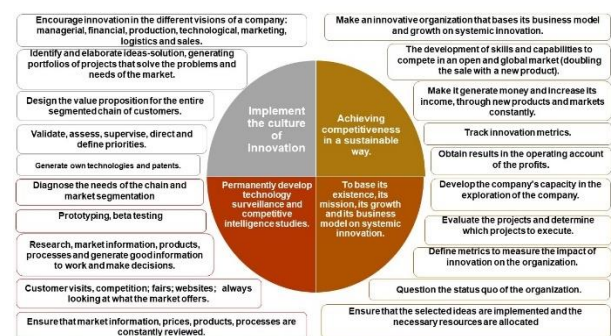


Figure 5 Objectives of the Innovation Committee

Source: (De la Peña, 2021)

Results

The study selection: articles related to Innovation Committees. We found six authors with articles mentioning something related to innovation training (training for innovation), seven authors on articles mentioning something related to innovation models, and ten authors who addressed relevant topics. Data mining: no author studies the phenomenon of Innovation Committees, the integration of the committee members, nor the description of their roles and expected activities within the committee.

Data synthesis: 71 meta-analysis reports in the databases published in different journals, from which 25 articles were selected, the topics of Innovation Committees and innovation models being eligible. Meta-analyses published in the database of systematic reviews were more likely to meet the eligibility of training models for an innovation committee or innovation task forces. We did not find any articles mentioning any organisational methodology or manuals describing the roles of the committee or task force. We did not find any innovation models correlated and interpolated with Innovation Committees.

In the technological monitoring activity carried out with a systematic review and its meta-analysis, following the PRISMA methodology (González, Buñuel and González, 2011), on the research directly related to the present study (see figure 11), we did not find any document that refers to a model of integration of Innovation Committees, as well as their integration methodology, function manuals and training within the committee; nor did we find an innovation model correlated with innovation. We did find innovation models that are current, but in our opinion, they are incomplete or lack complementary activities to guarantee the competitiveness factor.

Qualitative analysis

The model of innovation management linked to an Innovation Committee

Tables 2 and 3 below present the linear functions of the Innovation Committee and its cross-cutting activities.

Identify	(Go find, what no one has found.) Identifies the problem, the need or the real market opportunity.
Generate	(Go see, what no one has seen). Generate new concepts-ideas-solution that solve the problem anticipate the requirements and future needs of the consumer.
Materialize	(Design and do, which no one has done). Bring something new, different, original, look for new, constructive partnerships that generate value to the entire market chain.
Try	(Review and validate, the novelty). beta testing of the ideas-solution verifies the solution, performs a validation with the conjugation of the market.
Spread	(Communicate, what no one has done and the solution). Communicate to the market innovation and its value characteristics.

Table 3 Solution model activities
Source: (De la Peña, 2021)

Competitive intelligence = technology watch and foresight	Work transversally and collaboratively in the process of observing the environment, so as to enable the detection of possible emerging technologies that can determine the trends in the sector, in a systematic way.
Management of intelligence, creativity, marketing, organisational development and technology.	Be open to all realities in order to develop new things, sell ideas and revise the structure.
Knowledge management, training and development of the culture of innovation.	Development of innovation culture and training in innovation. Knowledge management.
Change management	Breaking internal and external rules. Interest in challenging ourselves and the market.
The organisational structure of the committee	Described in the methodology.
Expected results	The result of competitiveness, new revenues, product, process, material or service. Customer satisfaction. The evaluation of innovation is success in the market.

Table 4 Solution model activities
Source: (De la Peña, 2021)

The lack of empirical studies that analyse the reality of innovation practices in companies, correlated to a training model that drives the explosion of human capital development focused on innovation management skills, makes the innovation management model relevant and effective, since from the beginning of its incubation it provides skills, competences and capacities to manage competitiveness and sustainable growth.

Companies, in their incubation and growth processes, by integrating into the knowledge society, will develop solutions and innovations that can be subject to a type of intellectual property, generating intangible assets. Being in a sector that is very demanding of change, it is necessary to be on the technological watch and to manage it.

The organisational model and methodology for integrating an Innovation Committee

The way of integrating the consultancy model and selecting the work team with the definition of its roles, objectives, positions and activities, as well as the organisational and transversal functions, allowed to ensure the revision of the structure on a permanent basis, and transversally the organisational infrastructure is revised, developing a multidisciplinary team with collaborative work skills.

The model in project portfolio management and the systemic activity of constantly reviewing products, processes and services in the market

This model involves developing skills to carry out technological surveillance and competitive intelligence processes, enabling the creation of project portfolios, defining the problem, the needs of both internal and external clients, as well as defining where the innovation lies, the new value offer, and being able to assess which project requires the least investment and whether it will be recovered in the shortest time.

Sustainability and competitiveness of the company

Innovation will become a permanent process within the company's activities, and as a consequence, the company will be in permanent search of generating new income and profits. The model contemplates decision making when there are no economic conditions to earn or sustain through a break-even point; it also contemplates decision making to apply the process of closing cycles, and opening new ones, through the development of new products and markets focused on the new value offer.

Quantitative analysis

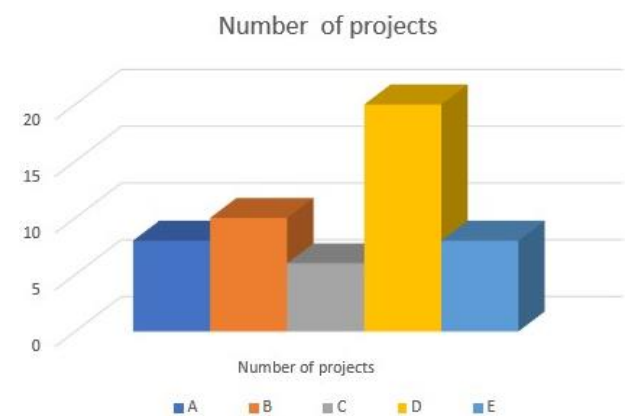
Data collection through interviews of the application of the model in 5 cases in different companies, in a period of five years as part of the object of study in the variables of number of projects, investment amounts, amount of sales increase, cost reduction and technological products.

Company	Number of projects	Amount invested by the company in millions of pesos	Sales for the next five years in millions of pesos	Cost reductions in millions of pesos	Technological products patents	Technological products PCT	Technological products industrial designs	Technological products new products	Technological products new processes
A	8	46.5	345	63	7	5	67	10	3
B	10	70	407	55.5	10	2	88	12	10
C	6	63.5	585	65.5	6	3	60	8	6
D	20	86	494	49.5	16	6	48	15	6
E	8	118	645	82	3	5	72	5	6

Table 5 Results of the experiment
 Source: Own elaboration. De la Peña, F. (2022)

Number of projects in the "Projects" portfolio

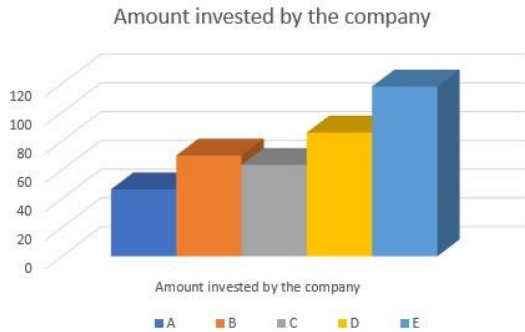
Based on the application to five companies, the number of projects was present after implementing the Innovation Committee model. This presence of structured projects is evidence that the presence of the committee in the company is forcing them to show results in number of projects realised and implemented.



Graphic 1 Number of projects in its portfolio per year
 Source: Own elaboration. De la Peña, F. (2022)

Investment amounts

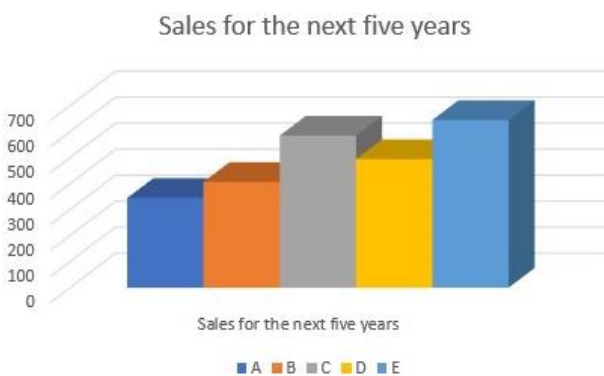
The investment in the same previously non-existent projects demonstrates the confidence placed in the work plan developed by the innovation committees for each project presented, being aware that an improvement is being sought and the direct investment in the structured development of technologies guarantees it.



Graphic 2 Amount of investment in a 5-year period
Source: Own elaboration. De la Peña, F. (2022)

Sales for the next five years

The contractual sales over a period of five years are accounted for from the end of the project. We see the increase of sales by new products in a positive way and these same results could convince the company to continue investing in new innovation projects, as well as to incorporate the participation of more employees in the already structured committee.

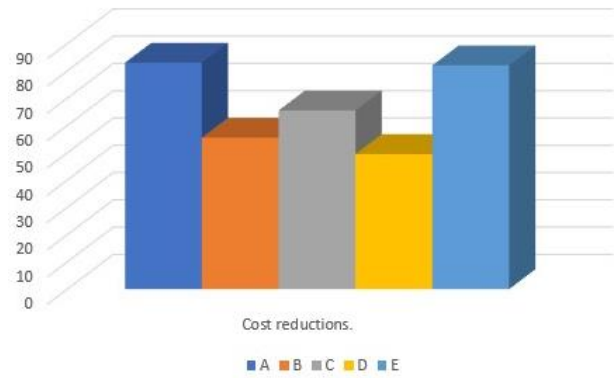


Graphic 3 Sales for the next five years
Source: own elaboration. De la Peña, F. (2022)

Cost reduction

In the savings from improvements or the development of new processes in the company, cost reduction existed with values between 83% and 49.5% in the cases studied. This amount allows the company to maintain its competitiveness in the market.

Cost reductions.

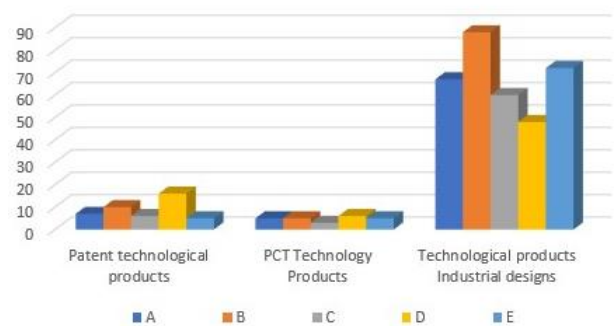


Graphic 4 Amount of cost reduction
Source: Own elaboration. De la Peña, F. (2022)

Technological products patents, PCTs and industrial designs

Patent applications filed, most of them have already obtained the approval titles through the PCT acceleration process. Although some of the innovations in these companies were handled under the recommendation of company secrecy rather than patent creation, the number of registered industrial designs increased.

Technological products



Graphic 5 National Patent Applications
Source: Own elaboration. De la Peña, F. (2022)

Conclusions

The phenomenon of Innovation Committees did not previously have an impact on business communities, in the past there was a lack of multidisciplinary integration and organisational guidance in its cross-cutting functions of the Innovation Committee correlated to the innovation model.

The research presented in the article is exploratory. The initial and beta-testing results obtained on the Innovation Committee in companies have yielded significant results for future studies. Our hypothesis and the discussion on the research is confirmed regarding the intervention of an Innovation Committee in the development of competitiveness, as they will be reviewing their profits, costs, products, processes and services, in addition they will be reviewing the position of the company with the market relationship, pushing the decision making in time and form.

We demonstrate in the results that it is necessary to have an Innovation Committee integrated by a multidisciplinary and trained team, as the engine for the development of the competitiveness of companies, which will be the thinking and vigilant brain that will bring to the table the realities and the points to be discussed about the current state of the products in the market, as well as see what you want to see, hear what you do not want to hear and change what you do not want to change, applying technology watch and competitive intelligence day by day; on the other hand, make decisions in the implementation of their projects. The analysis in drivers improves the conversion rate, which generates new customers and, consequently, sales and revenues. The Innovation Committees are designers and generators of the value offer, in the whole segmented market chain, and that solves the needs and problems of each market element.

We have posed the problem of the competitiveness of the companies, as well as our hypothesis of the Innovation Committee, which will provide diagnoses, information, problem proposals, solution projects to the company and its innovation projects, giving in a systematic way projects that allow the generation of new products, processes and services; consequently, its economic sustainability. Companies will distinguish between growth and development, they will see both their skills and qualities acquired, based on the experience of learning by doing.

Innovation in the future will be the norm rather than the exception, as will the exploitation of available knowledge and organisational capabilities with a focus on the value offer to the consumer. Innovation Committees will integrate the company into the knowledge society and improve its competitiveness and business growth.

An Innovation Committee is relevant and effective, as it provides skills, competences, and capabilities to manage competitiveness and sustainable growth from the outset. We have shown that a committee will be able to generate innovation. And this instrument focuses on the real competitiveness of the company. Companies with such a committee will increase their life expectancy in the market and adapt to global market conditions quickly, thus guaranteeing their existence in the future. This will be as long as they can live with change; change is infinite and is a constant reality in the global business world, so it is necessary to adopt an innovation management model in organisations that allows them to generate creative ideas, evaluate them, select them, execute innovation projects, align the organisation's projects, adapt to new needs and new market phenomena, design value offerings, as well as have a system of technological surveillance and competitive intelligence.

For some authors, the subject of innovation is an exhausted topic; however, since there was the first problem statement, and the first solution to the problem was developed in humanity, which was solved and acquired by it, there was innovation; it existed, exists and will exist, apart will have both its evolutions and its adaptations (Ramdani, B., Binsarif, A. And Boukrami, E. 2019), and new methodologies will come to make the phenomenon of innovation, which destroys businesses, economies, tastes, ways and standards of life, easier, more accessible and understandable. On the other hand, it is important to advance in the culturalisation of innovation, both its use and its application and development. Those who claim that innovation is an exhausted subject run the risk that in the future they will not live better, they will not seek the good of the human person, the good of the community, the promotion of change, and their business, if they have one, could suffer from what the future brings.

On the future of the research, we will seek to take the preliminary results and bring them to some universities, in order to continue and deepen on the development of skills and competences for innovation management.

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