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*Artículos científicos*

## **Intervención organizacional por competencias profesionales en una empresa de proveeduría de calzado dentro del estado de Guanajuato**

*Organizational intervention for professional skills in a shoe supply  
company in the State of Guanajuato*

*Intervenção organizacional para qualificação profissional em empresa  
fornecedora de calçados do estado de Guanajuato*

**Adriana Fragoso Mora**

Tecnológico Nacional de México, Instituto Tecnológico Superior de Purísima del  
Rincón, México

[adriana.fm@purisima.tecnm.mx](mailto:adriana.fm@purisima.tecnm.mx)

<https://orcid.org/0000-0001-6434-8485>

**Laura Marisela Martínez Sánchez**

Tecnológico Nacional de México, Instituto Tecnológico Superior de Purísima del  
Rincón, México

[laura.ms@purisima.tecnm.mx](mailto:laura.ms@purisima.tecnm.mx)

<https://orcid.org/0000-0002-1112-1700>

**Alba Edith Elías Chávez**

Tecnológico Nacional de México, Instituto Tecnológico Superior de Purísima del  
Rincón, México

[alba.ec@purisima.tecnm.mx](mailto:alba.ec@purisima.tecnm.mx)

<https://orcid.org/0000-0001-8325-7095>

## Resumen

El objetivo de esta investigación fue determinar el impacto de las competencias blandas de personas que ocupan puestos gerenciales en una empresa de calzado guanajuatense con el fin de respaldar el modelo de gestión tecnológica. Para ello se empleó una metodología de caso, la cual fue desarrollada siguiendo cuatro fases: fundamentos y diseño de instrumentos, selección de puestos tipo y aplicación de instrumentos, validación por expertos, y evaluación al desempeño piloto. Algunos beneficios detectados fueron los siguientes: diagnosticar situacionalmente a la organización, identificar las necesidades de capacitación y evaluar mejor el desempeño traducido en el comportamiento de los gerentes, implementar un sistema de evaluación capaz de neutralizar la subjetividad, y proponer medidas orientadas a mejorar el comportamiento y la comunicación. La empresa objeto de estudio, en síntesis, logró determinar cuáles colaboradores requieren de un proceso de mejora continua, así como seleccionar a los que tienen condiciones de promoción para estimular la productividad y mejorar las relaciones humanas en el trabajo.

**Palabras clave:** descripción del empleo, evaluación de personal, gestión de competencias, organización.

## Abstract

The research of this research was to determine the impact of the soft skills of people who occupy managerial positions in Guanajuato Footwear Company in order to support the technology management model. For this, a case methodology was used, which was developed following four phases: fundamentals and design of instruments, selection of standard positions and application of instruments, validation by experts, and evaluation of pilot performance. Some benefits detected were the following: situationally diagnosing the organization, identifying training needs and better evaluating performance translated into the behavior of managers, implementing an evaluation system capable of neutralizing subjectivity, and proposing measures aimed at improving behavior and communication. The company under study, in short, sought to select employees, as well as select a continuous improvement process, as well as select those who have promotional conditions to stimulate productivity and improve human relations at work.

**Keywords:** job description, staff evaluation, competency management, organization.

## Resumo

O objetivo desta pesquisa foi determinar o impacto das habilidades sociais de pessoas que ocupam cargos gerenciais em uma empresa calçadista de Guanajuato para apoiar o modelo de gestão tecnológica. Para isso, foi utilizada uma metodologia de caso, que foi desenvolvida seguindo quatro fases: fundamentos e desenho dos instrumentos, seleção das posições padrão e aplicação dos instrumentos, validação por especialistas e avaliação do desempenho do piloto. Alguns benefícios detectados foram os seguintes: diagnosticar situacionalmente a organização, identificar necessidades de treinamento e avaliar melhor o desempenho traduzido no comportamento dos gestores, implantar um sistema de avaliação capaz de neutralizar a subjetividade e propor medidas que visem melhorar o comportamento e comunicação. A empresa em estudo, em suma, conseguiu determinar quais são os colaboradores que requerem um processo de melhoria contínua, bem como selecionar aqueles que têm condições de promoção para estimular a produtividade e melhorar as relações humanas no trabalho.

**Palavras-chave:** descrição do trabalho, avaliação de pessoal, gestão de competências, organização.

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## Introduction

The role that companies play in the market is of great relevance for the correct and efficient functioning of the economies of the countries. For this reason, Palomo and Pedroza (2018) point out that “managing the company in a comprehensive and effective way, including sales, quality, delivery, the market, staff turnover and business profitability go hand in hand with technology and the efficient use of its resources”(para. 07). A company committed to research, development and innovation requires trained human talent to create and execute projects, hence the importance of detecting and training those skills in personnel so that organizations can meet market demands.

The objective of this research, therefore, was to determine the impact of the soft skills of people who occupy managerial positions in a Guanajuato footwear supplier company in order to support its technology management model.

## Literature review

The competitiveness of companies has been a subject studied by several authors. For example: (Müller, 1995) proposes it as the «sustained ability to gain and maintain a lucrative market share» relate this term to obtaining an advantage based on the generation of superior products or processes to achieve a better position in the market. In other words, it incorporates the objective of industrial achievement "

From the work of Müller: the Kaleidoscope of Competitiveness; "Competitiveness is the sustainable ability to make profit and maintain market share (...) This definition presents three important and measurable dimensions: profit; market share, and, through the word 'sustainability', it records the temporal aspect "(Duren, Martin and Westgren, 1992, p. 2).

In this sense, it should be noted that the perception of the role that small businesses play in the development of a country is changing, since the idea of a dual economic structure formed by a nucleus of companies that offer permanent jobs is not currently considered valid. and that they are surrounded by a large group of small and volatile companies that act in a subsidiary manner.

Therefore, it is accepted that competitive advantage is generated at the level of the company and specific industries. The previous perception, "builds the basis of a high level of consensus on the fact that the complex of public policies and relations between companies and institutions that surround each industry shapes the competitive environment, what Porter (1990) calls the national advantage diamond" (Solleiro & Castañón, 2005, p. 3).

Following this idea, it is considered that the present research constitutes a means to generate evaluation skills with application work and design by competencies, work that should not be associated with the opinion of steps to follow, such as form or recipe (Cazáres and Cuevas de la Garza, 2007). This is because the method used is flexible, so that everyone can adjust it to their needs.

Logically, the search for sustainable competitive differentiation and the organizational structure to maintain the efficiency of the company can be carried out by developing a distinctive quality, which must be inimitable in the short term to offer benefits. This can be promoted with the support of technological capabilities, which should be considered as a generic faculty of the company to mobilize individual technoscientific resources. These resources allow the improvement or creation of new innovative successful products, and are at the service of the implementation of effective competitive strategies to neutralize threats and exploit the opportunities offered by the

environment. In other words, technological capabilities not only demand the application of existing knowledge or the acquisition of a new one, but also the differentiation of the knowledge on which they are based. (García y Navas, 2007; Levinthal y March, 1993).

## Problem Statement

The Organization for Economic Cooperation and Development OECD (1992) concludes that the factors that influence competitiveness at the firm level include:

The successful management of production flows, raw materials and inventories.

The successful management of interaction mechanisms between marketing planning, formal R&D, design, engineering and industrial production.

The ability to combine internal R&D and innovation activities with technological cooperation with universities and other companies.

The ability to incorporate more exact definitions of the characteristics of demand and market developments in design and production strategies.

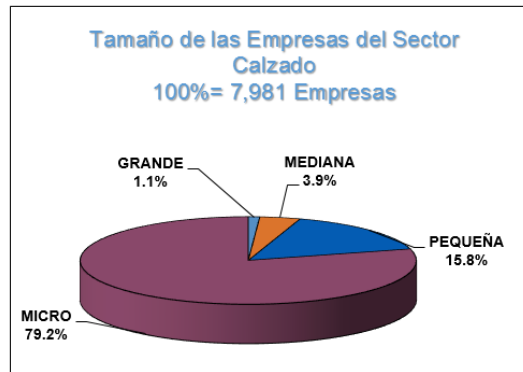
The ability to organize successful business-to-business relationships with suppliers of materials and components and customers.

The steps taken to improve the capabilities of workers and employees through investments in specialized training, as well as in the generation of higher levels of worker responsibility in production. (Solleiro & Castañón, 2005, p. 6-7).

However, Mexico usually occupies the last positions in terms of competitiveness development, which may be the consequence of a scarce innovation that is not promoted from an integration between the university, the industry and the government (triple helix model) (Leydesdorff and Etzkowitz, 1996). The proof of this is a deficient legal framework and the limitations of governance in the innovation system. Even so, efforts are currently being made in the country to overcome these weaknesses through, for example, the commercialization of public research and the creation of conditions for innovative entrepreneurship.

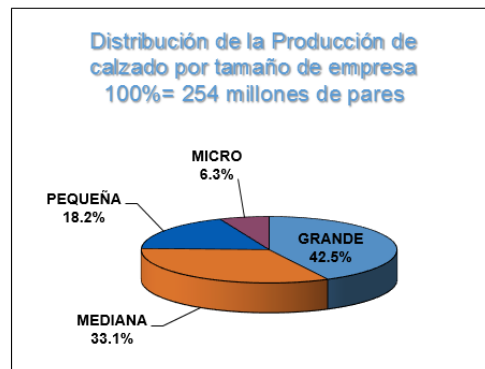
In the specific case of this work, the focus has been on the footwear sector, which is made up of 7981 companies divided into large, medium, small and micros (figure 1) that distribute some 254 million pairs nationwide pieces per year (figure 2):

**Figura 1.** Tamaño de empresas del sector calzado



Fuente: Elaboración propia de la empresa con base en datos Instituto Nacional de Estadística Geografía e Informática-INEGI-Mexico (2007-2016).

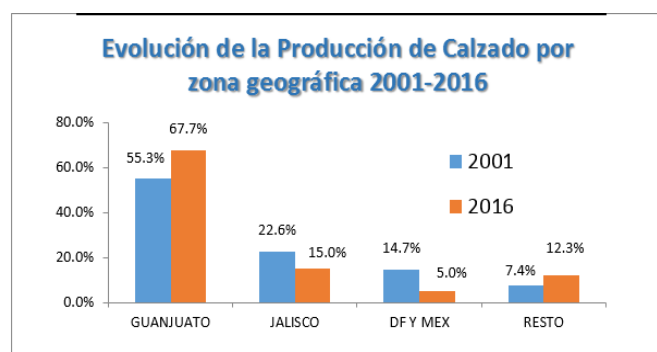
**Figura 2.** Distribución de la producción de calzado por tamaño de empresa



Fuente: Elaboración propia de la empresa con base en datos Instituto Nacional de Estadística Geografía e Informática-INEGI-Mexico (2007-2016).

The evolution of production in the footwear sector is shown in Figure 3, where a comparison is offered between 2001 and 2016.

**Figura 3.** Evolución de la producción de calzado por zona geográfica 2001-2016



Fuente: Elaboración propia de la empresa con base en datos Instituto Nacional de Estadística Geografía e Informática-INEGI-Mexico (2007-2016).

Now, the organization that is the object of study in this work was established on October 27, 1978, although it began operations in 1980 in order to cover the need to provide the supply of plastic lasts to the footwear industry, for which counted on the advice of Italian companies. Currently, it has approximately 102 collaborators, and its main products are the following: 3D printing, fourth generation last, and integrated or fifth generation plate last, which are marketed within the country, as well as in other nations (eg, Canada, United States, Guatemala, El Salvador, Chile, Peru, Colombia, Dominican Republic).

Since its inception, the organization has been committed to research and development of innovation, which is evidenced in its 40-year history of permanence in different national and international markets. In 2017, she was awarded the National Award for Technology and Innovation, as she was the creator of its technology management model. Despite these achievements, however, the company also perceived various problems related to attitudinal and managerial factors on the part of the managerial staff, as well as the middle and operational managers. In other words, there were constant errors and lack of clear specifications with customers, which made it difficult to solve problems.

### General purpose

Identify the professional attitudinal competencies of the organization's managerial and middle management personnel in order to evaluate their current performance and their impact on the implementation of the technology management model in their productive areas to achieve the expected results towards their clients and towards the Company address.

It is worth mentioning that the term professional capacity or competence refers to the comprehensive actions carried out to identify, interpret, argue and solve problems in the context in the most ethical and ideal way possible, articulating knowing how to be, know how and know how to know (Tobón, 2012 ). In socio-training, it is key to serve others, the environment and yourself in order to achieve comprehensive training and development of the necessary skills. This is done by helping to solve specific needs and problems based on strategies such as problem-based learning and project execution. "It is not enough to have knowledge, it must be applied in the transformation of the world" (Tobón, 2012, p. 4).

### **Justification**

This explanatory, descriptive and corrective research is justified because it aims to provide knowledge in the field of the competencies of knowing, doing and knowing how to transfer through the proposal of diagnosis of training needs and evaluation of managerial performance under the 360 methodology degrees. This seeks to transform the experience in management into managerial performance as meaningful and organizational learning within the company.

### **Hypothesis**

By identifying the professional attitudinal competencies of the managerial staff, as well as the middle managers of the organization, it can be determined that there is a significant difference in the implementation of the technological management model in its productive areas for the achievement of expected results towards its clients and, in Consequently, towards the direction of the company.

### **Methodology**

#### **Study development**

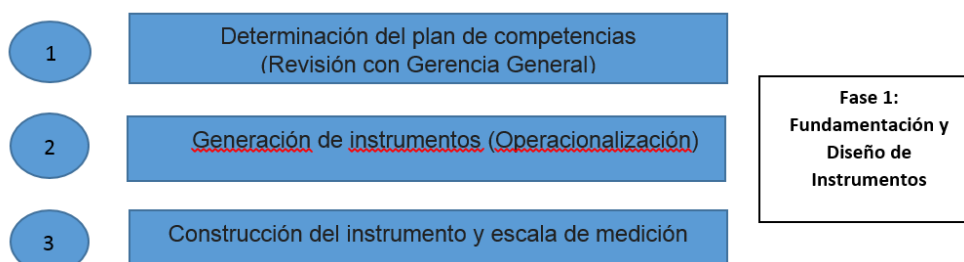
In the research, a case methodology was used, which was developed in the following phases:



### Phase 1: Fundamentals and instrument design

An initial meeting was held with the general management of the footwear company to agree on the intervention plan. In this first meeting, the needs were heard to determine the necessary skills according to the analysis of the company's technological management model, as well as the functionality and development of each of its strategic functions: monitor, plan, enable, protect and implement ( figure 4).

**Figura 4.** Fase 1: Fundamentación y diseño de instrumentos



Fuente: Elaboración propia

On the other hand, the work session in the workshop was held with the managers, where a format was provided for them to describe the scope of their responsibilities translated into professional skills. For this, the following measurement scales were agreed:

- Level 1: Competence not necessary
- Level 2: Low competition
- Level 3: intermediate competence
- Level 4: Proficiency in high and deep domain
- Level 5: Competence in an expert degree and with the ability to teach others.

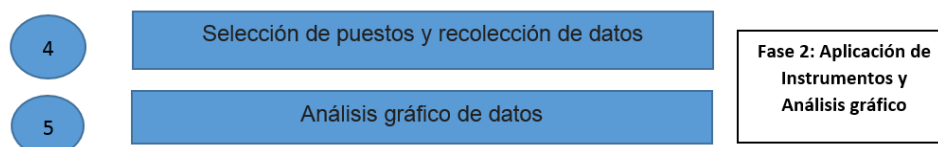
Likewise, the scope by position of responsibility was analyzed according to the generic competencies and the techniques required to deliver results in accordance with the technology management model.

### Phase 2: Selection of standard positions and application of instruments

The deliverable of the management workshop was the job description developed by each manager. Then, each of them was interviewed to specify the scope, generic competencies and those necessary for the technology management model. Likewise, the instrument was implemented to detect the training needs (DNC) of the occupants of the positions with respect to the competencies determined in the job descriptions. The data were processed statistically according to the levels of competence required and the

training priorities to be covered according to the generic and technological management competencies to graphically determine the training gaps to be covered for the preparation of the annual training plan ( figure 5).

**Figura 5.** Fase 2: Aplicación de instrumentos y análisis gráfico



Fuente: Elaboración propia

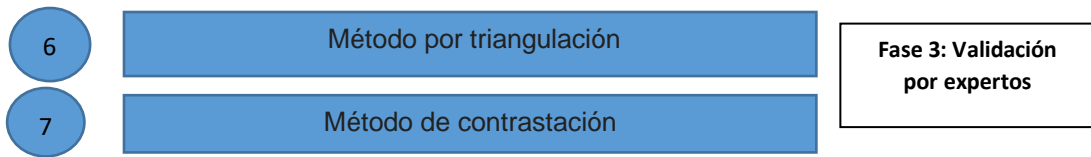
### Phase 3: Validation by experts

According to Rodríguez (2005), Arias (2000), Pérez (2000), among others, the triangulation of data can be oriented in time and space, of person, of researchers, of theories, of methods or multiple. In the present investigation, data triangulation was used. The objective was to verify the trends detected in a certain group of observations.

The comparison of data can be based on spatio-temporal criteria and levels of analysis. According to Arias (2000), in this typology it is considered as the use of multiple data sources to obtain different views about a topic for the purpose of validation. In turn, the triangulation of data over time implies validating a theoretical proposition regarding a phenomenon at different times.

Within the present investigation, the triangulation was carried out per person, that is, it is the collection of data from the diagnosis of training needs (DNC) and its corresponding performance evaluation (360 degree methodology) in at least two of the three levels of person: individuals (managers), groups or collectives (areas or departments). Data collection from one source was used to validate data from the other sources or from only one. Each level of data was contrasted to validate the findings of the other level (Figure 6).

**Figura 6.** Fase 3: Validación por expertos

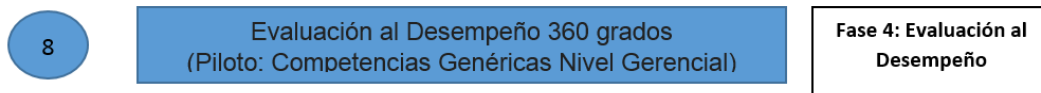


Fuente: Elaboración propia

#### **Phase 4: Evaluation of the pilot performance (data collection)**

The position profile was established based on the soft skills identified as necessary for each managerial position in phases 1, 2 and 3 of the project; In this sense, the 360 degree evaluation process was organized in full with the managers, including a self-evaluation, evaluation of their immediate boss and a peer in this regard. With this graphically, the results were obtained for analysis, collaborative discussion between evaluators (ITSPR staff), evaluated (managers) and general director for their better understanding of the evaluation process and group feedback for their own continuous improvement (figure 7 ).

**Figura 7.** Fase 4: Evaluación al desempeño



Fuente: Elaboración propia

The performance evaluation by the 360-degree method in a Mexican company indicated that ED is related to establishing objectives and performance standards, which allow measuring the exercise against said standards and providing feedback to employees (Sapien-Aguilar, Gutiérrez Diez, Piñón Howlet and Araiza Zapata, 2016).

Given the above, the development of phase 4 in this research consisted of evaluating performance using the 360-degree method based on three groups of competencies: generic, managerial to support its technological management model and specific techniques. This knowledge will improve the interaction between employees and the company to achieve a common benefit, enabling the creation of conditions for better performance. The 360-degree method is a human talent management tool that aims - based on organizational objectives - to assess the behaviors and attitudes that define the way in which each person is carrying out their task.

## Results

The process of diagnosis and evaluation of soft managerial competencies are relevant due to the degree of development required by the collaborators of the organization under study; In this sense, the following were identified: situational leadership, emotional intelligence, ability to listen to others, negotiation, sense of innovation, teamwork, initiative, human talent management, ability to communicate, priority management and tolerance.

The competitive strategy of the organization is based on the innovation of products, processes and services. In fact, for seven years the differentiation of products and services has been had in mind, hence the investment in R&D has been made in order to satisfy the needs of its customers and thus obtain better results. The type of sale that is made is direct; However, to better serve customers, a digital marketing strategy has been created using the internet and social networks.

As part of this competitive strategy, work has been done to identify national and foreign competitors. It is important to mention that the organization is in a premium market niche, that is, it serves well-known customers and brands, due to the high technology used in the production of lasts, as well as the highly qualified personnel, so it is not possible to compete with hormeros of a less technification.

The main competitive advantages of its products are the high dimensional precision and the automatic finishing of the toe and heel of the last, which are the critical areas in the bio-sizing of the last anatomy, giving a perfect fit for the manufacture of footwear. without the intervention of labor.

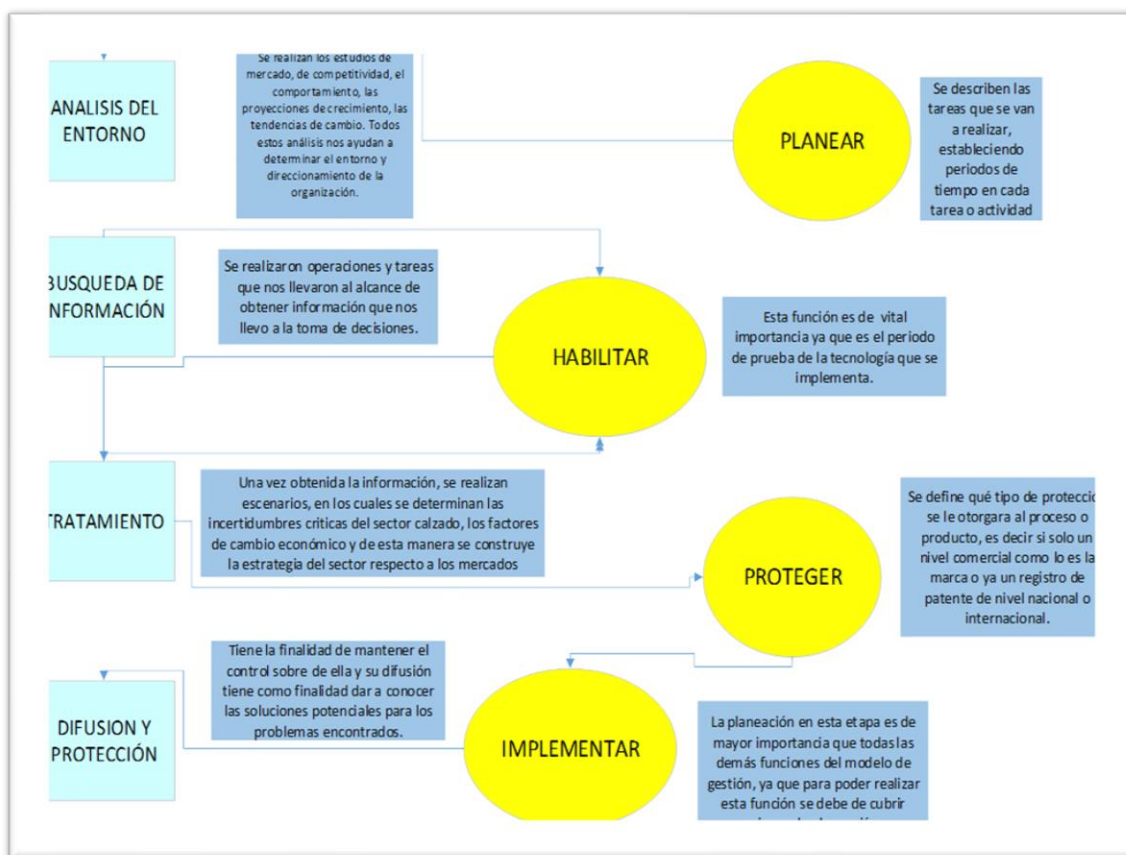
Regarding the most notable comparative advantage that the organization has achieved with the technological innovation projects implemented in the last three years (which constitutes a key factor of success in the market), the speed of response in the design can be mentioned. and development of prototypes of shoe lasts, with the highest quality and dimensional precision. Today footwear manufacturers recognize that the key to compete globally is found in the speed to introduce a new product to the market (speed to market) without sacrificing quality (PNTi National Technology and Innovation Award, 2017).

Undoubtedly, this is an organization committed to research, technological development and innovation (R + D + i). For this reason, 10% of monthly sales are invested to carry out tests and search for new methods or production systems; Thanks to this, the reduction

of waste and losses has been achieved, which has increased the profit and value of the shares by up to 50%.

Regarding the situational diagnosis in the organization, the relevant generic competencies were determined to support the company's technological management model: systemic thinking, technological surveillance, industrial property regulations, research, management of new technologies, projects in technological management, innovation of the knowledge, among others, immediately quantifying the evaluation obtained in this regard in each function of the strategic management model of the company (figure 8).

**Figura 8.** Modelo de gestión tecnológica de la empresa



Fuente: Elaboración propia

The main objective of the technology management model within the organization is to help develop and evolve systems, methods, processes and technologies with the purpose of innovating existing ones, as well as helping to evaluate new technology to make the best decision. Innovation arises through the national technology management model because it contains the following functions: technology watch, basic planning, implementation and improvement, so the vital functions of enabling and protecting are not used. Therefore, it continues to be strengthened based on the model proposed by the National Award for Technology and Innovation.

It is worth noting that the strategic functions established by the company's technological management model described in figure 8 are explained below, as well as the diagnosis of training needs (DNC) with the competencies identified as necessary to be developed by the management personnel; also, its level technically required by each function and supported by the general management for the transition and implementation of the model in question. In this sense, the description of the levels of the training needs assessment (DNC) for management personnel is presented below:

- Level 1: Competence not necessary
- Level 2: Low competition
- Level 3: intermediate competence
- Level 4: Proficiency in high and deep domain
- Level 5: Competence in an expert degree and with the ability to teach others.

**Monitor:** A continuous monitoring and search action is carried out in the environment of the main technology and technological developments that impact our business, as well as trends and sector indicators.

Managerial DNC, identified competencies:

- Strategic thinking - 90% level 5
- Technological surveillance - 96% level 5
- Investigation of trends - 95% level 4 and 5
- Research - 90% level 4

**Plan:** The technological and strategic planning was carried out according to the results obtained in the technological surveillance. One of them was the opening of the Chinese market in Mexico.

Managerial DNC, identified competencies:

- Analytical thinking - 86% level 5
- Innovation capacity - 100% level 5
- Development of improvement proposals - 77% level 4
- Management of new technologies - 95% level 5
- Research > 90% level 4

**Enable:** To obtain the technologies, the company carries out financial management with government support —p. eg, the National Council of Science and Technology (Conacyt), the Guanajuato Funds and the Ministry of Economy (SE) -. In order to identify the necessary intellectual capital, a profile is prepared according to the requirements for adoption and transfer of technology. They develop with links to

universities and research centers; We also have strategic alliances with the best technology and fashion manufacturers in Italy.

Managerial DNC, identified competencies

- Information search - 70% level 5
- Knowledge innovation - 93% level 5
- Emotional intelligence - 80% level 4
- Negotiation - 95% level 5

**Protect:** The registration and protection strategy was created before the Mexican Institute of Industrial Property (IMPI) for the protection of the technologies developed, the patent application in product and process is currently being processed.

Managerial DNC, identified competencies:

- Systemic thinking - 89% level 5
- Teamwork - 93% level 5
- Situational leadership - 97% level 4
- Projects in technology management - 90% level 5
- Applicable regulations - 90% level 4
- Industrial property - 94% level 5

**Implement:** It is the execution of the technological plan and is the result of the technological qualification to achieve the objectives set from the beginning.

Managerial DNC, identified competencies:

- Human talent management - 91% level 5
- Ability to communicate - 89% level 5
- Ability to listen to others - 97% level 4
- Initiative - 96% level 5
- Continuous improvement - 86% level 4

The results of the practical application of this research are translated into the following deliverables for the organization:

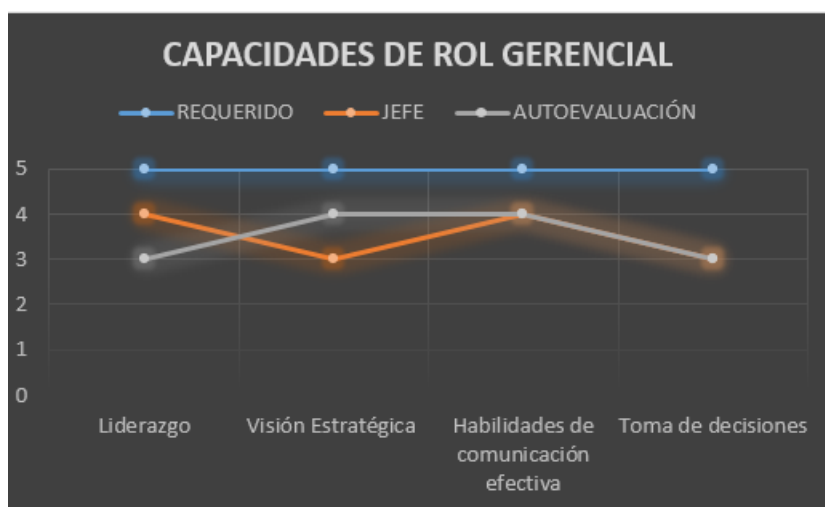
- Diagnosis of managerial and operational training needs (DNC).
- 2018-2020 Competency Training Plan for management positions.
- Managerial job descriptions translated into competencies with monitoring of performance indicators (KPI's)
- Pilot evaluation for managerial performance under the 360 degree methodology for 100% of the positions. Next, the graphical analysis by position in the pilot

evaluation is presented, and the relevant findings of the process are shown, with a synthetic interpretation of its main measurements.

### General management

In terms of leadership, there is a point below that required, so it is necessary to improve the understanding of the organization, delegation and monitoring of plans, programs and projects of the collaborators (figure 9):

**Figura 9:** Capacidades de rol gerencial (puesto: gerente general)



Fuente: Elaboración propia

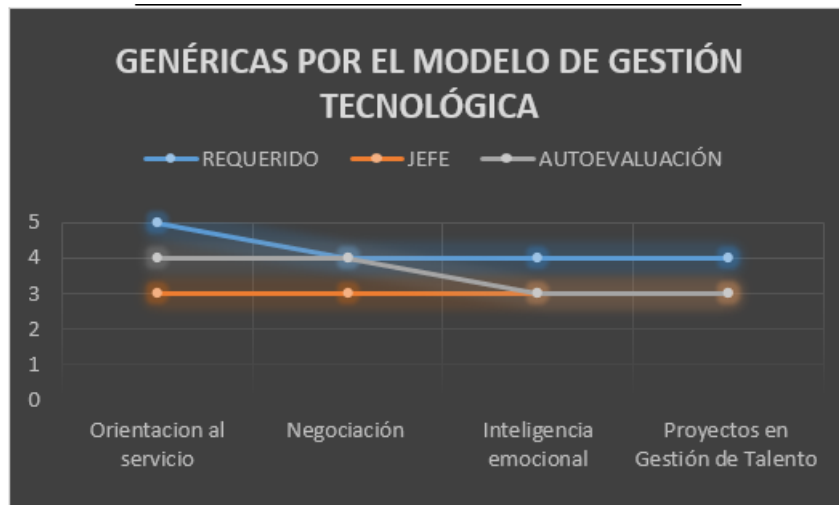
This variable presents the strategic vision as an area of improvement, which can be improved with the ability to understand and anticipate market changes to find business opportunities. Their communication is mostly effective, however, it is necessary to understand and provide greater follow-up and solution to internal personnel problems.

On the other hand, it presents an important gap in decision-making, which must be optimized, since the planning and improvement of the organization depends on it. Likewise, it requires greater service orientation, which emerges from the strategic vision, which is why it is an important opportunity area for general management. This is characterized by having an adequate level of negotiation, a fundamental aspect in the leadership of its function. It requires raising your level of emotional intelligence, as well as generating more talent management projects to strengthen leadership.

Regarding the technology management model, the competencies that the general manager must improve are negotiation, emotional intelligence and projects in talent management (figure 10):



**Figura 10.** Genéricas por el modelo de gestión tecnológica

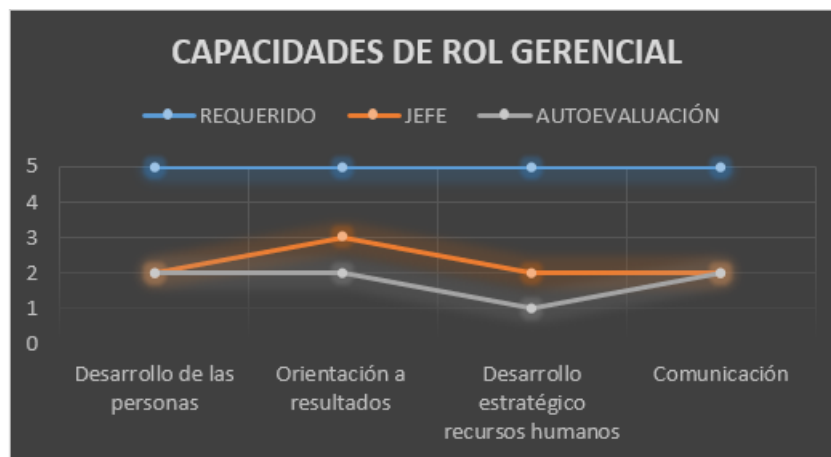


Fuente: Elaboración propia

### Human Resources Management

This aspect presents a significant gap in the development of people between the level of competence and the level required. Therefore, orientation must be improved to achieve optimal results (Figure 11).

**Figura 11.** Capacidades de rol gerencial (puesto: gerente de recursos humanos)



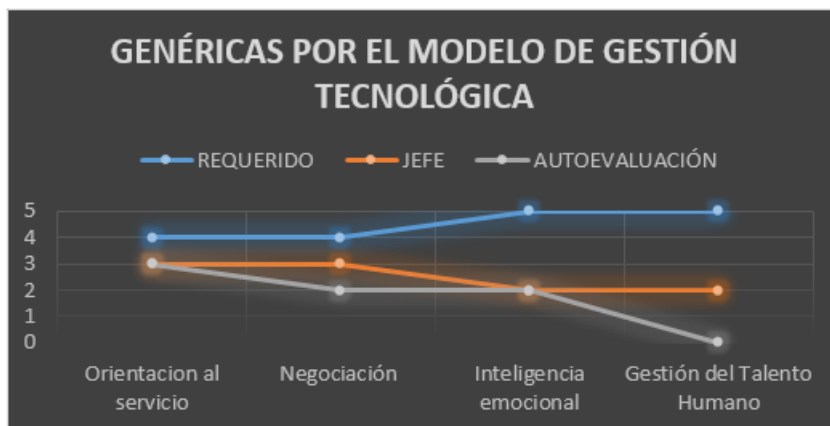
Fuente: Elaboración propia

Regarding the strategic development of human resources, strategies must be implemented to take advantage of the talent of the collaborators. Regarding communication, his level is below what is required for his position, which is essential for the strengthening of interpersonal relationships.

Likewise, work should be done on a greater orientation to service, which emerges from the strategic vision, hence it is considered an important opportunity area for your role as human resources manager. Similarly, it shows a significant gap in negotiation

competence, which is critical for performing responsibilities as a mediator between the organization and employees. Emphasis should also be placed on the level of emotional intelligence to strengthen communication and personal development skills (figure 12).

**Figura 12.** Genéricas por el modelo de gestión tecnológica

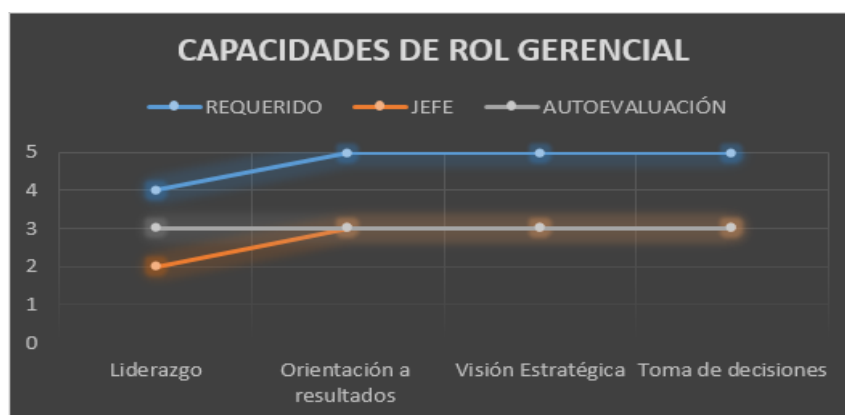


Fuente: Elaboración propia

### Accounting management

Leadership is one point below that required, so you need to improve the understanding of the organization, delegation and monitoring of plans, programs and projects of employees (figure 13). Likewise, the orientation towards results must be optimized, since their approach tends to be forgotten, which puts the achievement of the objectives set at risk.

**Figura 13.** Capacidades del rol gerencial (puesto: gerente de contabilidad)



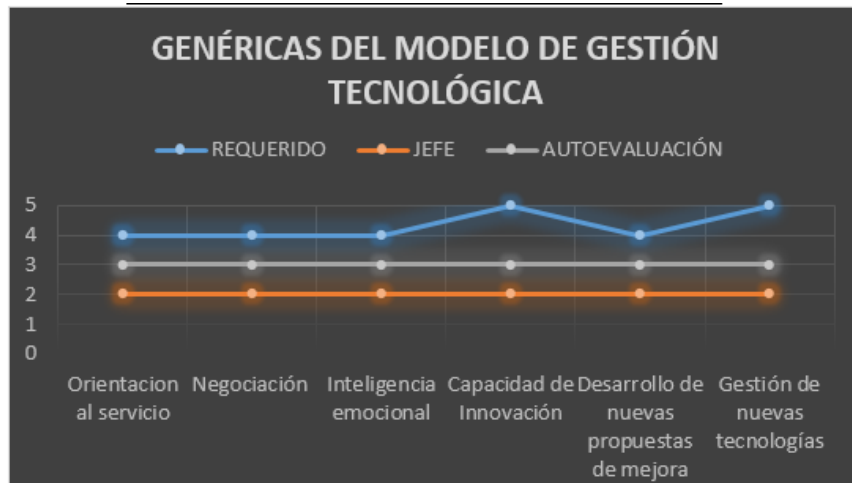
Fuente: Elaboración propia

As an area for improvement, the strategic vision was detected, which can be addressed with the ability to understand and anticipate changes in the market to find business opportunities. There is also a significant gap in decision-making, which depends on planning and improving the processes in your area.

Likewise, greater service orientation is required, which emerges from the strategic vision. In this sense, it must have an adequate level of negotiation, a fundamental aspect for the execution of its work, since it is directly related to internal and external suppliers and clients. Therefore, it is suggested to raise the level of emotional intelligence, which is below what is recommended.

Regarding the capacity for innovation, it is necessary to adapt to change, create new strategies and provide better support for their implementation. It is necessary to improve the development of new proposals, since this variable is below the competence required for the transition of the model. Likewise, in the management of new technologies, strategies must be implemented to optimize the use of your department (figure 14).

**Figura 14.** Genéricas del modelo de gestión tecnológica



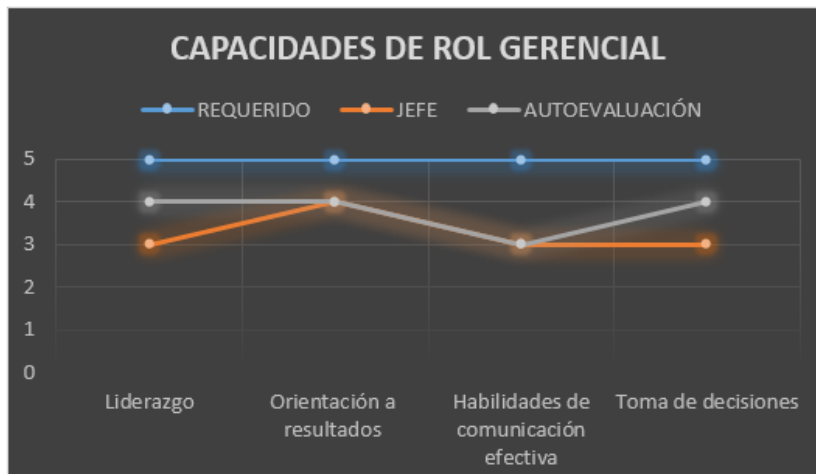
Fuente: Elaboración propia

### Sales management

This category presents an adequate level of leadership, although it can be improved to achieve the required one. Likewise, work should be done on results orientation so as not to lose sight of the objectives set. The area of opportunity lies in effective communication skills, so understanding must be enhanced and greater follow-up provided, as well as the solution to internal staff problems. Decision-making should

also be emphasized, since the planning and improvement of the organization depends on this (figure 15).

**Figura 15.** Capacidades de rol gerencial (puesto: gerente de ventas)

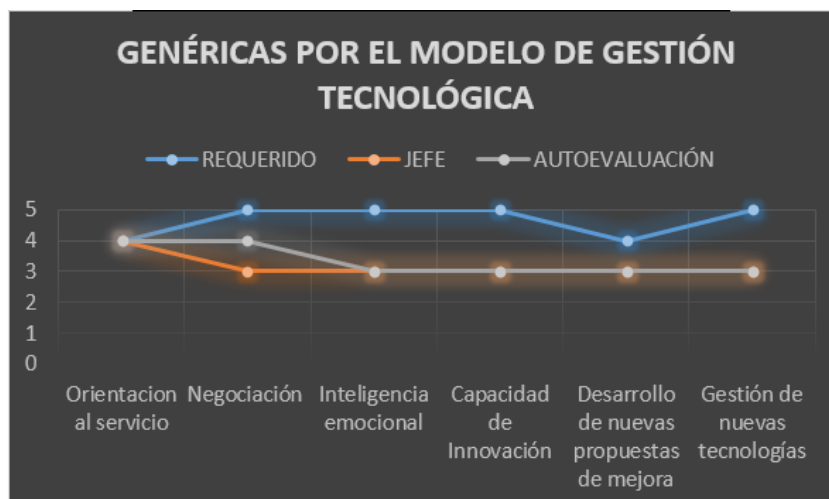


Fuente: Elaboración propia

Likewise, greater service orientation is required, which emerges from the strategic vision, which is why it is an important opportunity area for accounting management, which will allow generating new strategies and giving better support to their implementation.

It is also desirable that the development of new improvement proposals be optimized, since these are below the competence required for the transition of the model. In short, the diagnosis carried out shows that strategies must be implemented to take advantage of the tasks performed by this department.

**Figura 16.** Genéricas por el modelo de gestión tecnológica

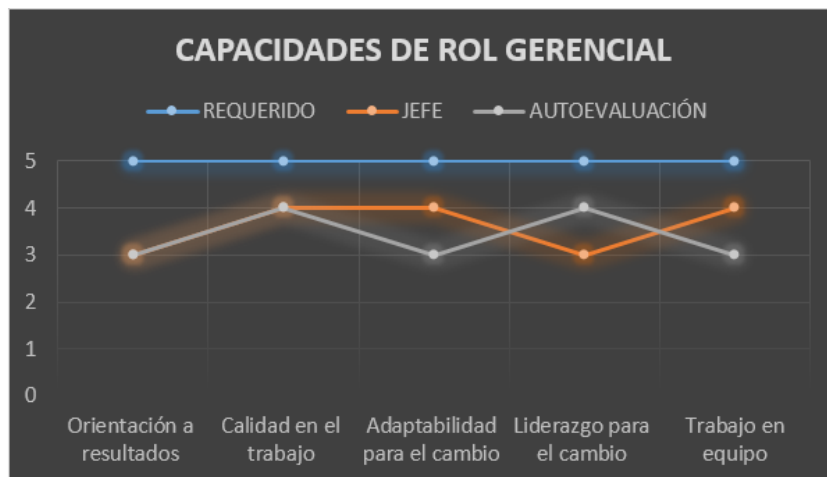


Fuente: Elaboración propia

### Quality management

Results orientation should be improved. Although the quality of work is at an adequate level, this competence must be raised at least one additional level (figure 17). It is desirable to work on increasing their adaptability for change, since their processes are exposed to constant changes to meet the established goals. On the other hand, areas of opportunity were detected in terms of leadership for change and adaptability for change.

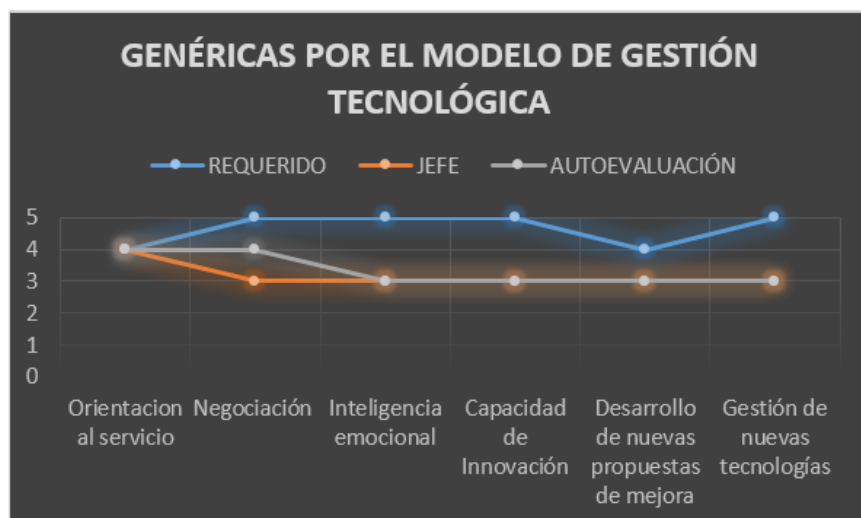
**Figura 17.** Capacidades de rol gerencial (puesto: gerente de calidad)



Fuente: Elaboración propia

A focus on teamwork is required to achieve goals and support the transition of the organization. Likewise, the level of emotional intelligence must be raised, since it is below that required.

**Figura 18.** Genéricas por el modelo de gestión tecnológica



Fuente: Elaboración propia

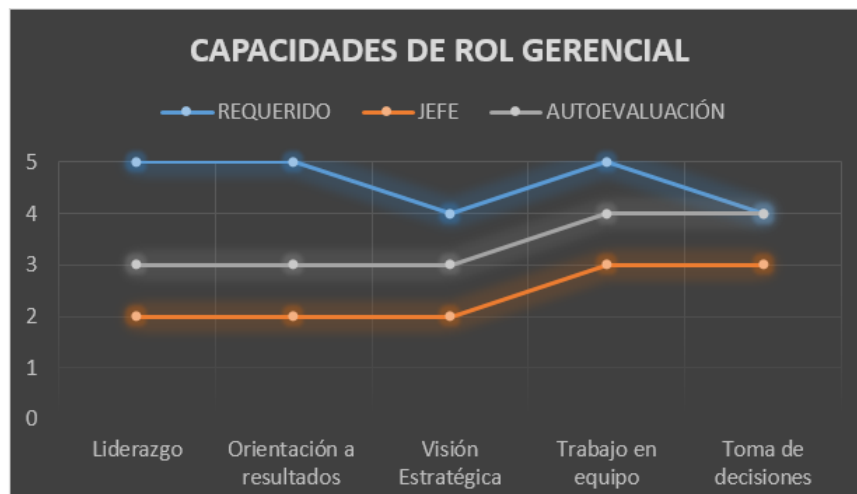
As for productivity, it has an adequate level, although it can reach higher indicators. It presents a significant gap in the development of people between the level of competence you have and the level required. In addition, people must be made aware of their responsibility in the area. In the sense of capacity for innovation, greater adaptability to change is needed, creating new strategies and providing better support for their implementation (figure 18).

It is also necessary to promote the development of new improvement proposals, since it is below the competence required for the transition of the model. Regarding innovation for knowledge, it is desirable to broaden the vision with the implementation of strategies to acquire more technical information on the area (figure 18).

### Maintenance management

The level of leadership is well below that required, so you need to improve the understanding of the organization, delegation and monitoring of plans, programs and projects of employees, since decision-making depends on this (figure 19).

**Figura 19.** Capacidades de rol gerencial (puesto: gerente de mantenimiento)

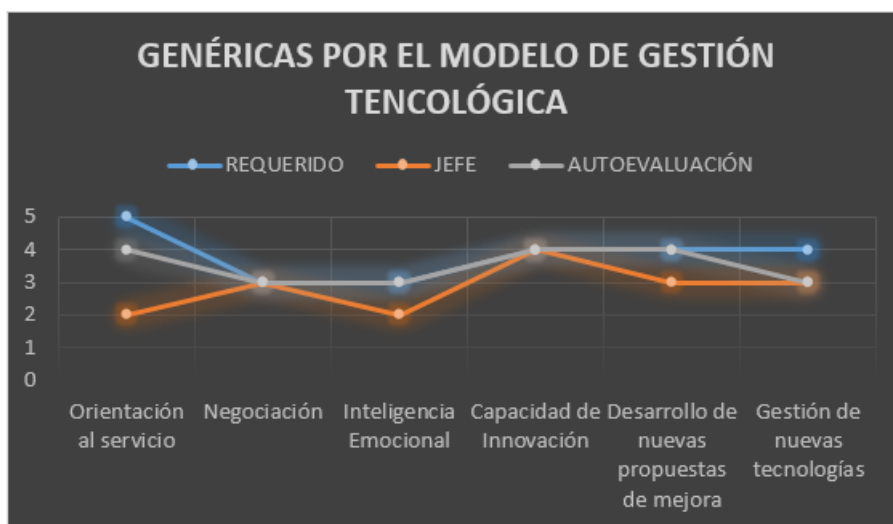


Fuente: Elaboración propia

Likewise, the management objective should not be lost sight of, since this puts the achievement of the proposed goals at risk (figure 19). As for an area of improvement, the strategic vision must be taken into account, which can be addressed with the ability to understand and anticipate market changes to find business opportunities. It is essential that emphasis is also placed on teamwork skills so that general goals can be achieved and support the transition of the organization. Regarding the evaluation of competencies that support the technology management model, the maintenance manager a level 3 in terms

of negotiation and innovation capacity, which coincides with the requirement of the position profile and the evaluation of the immediate boss. However, figure 20 shows the competencies of results orientation, management of new technologies and emotional intelligence as opportunities to raise professional competence at least at a latent level of improvement.

**Figura 20.** Genéricas por el modelo de gestión tecnológica

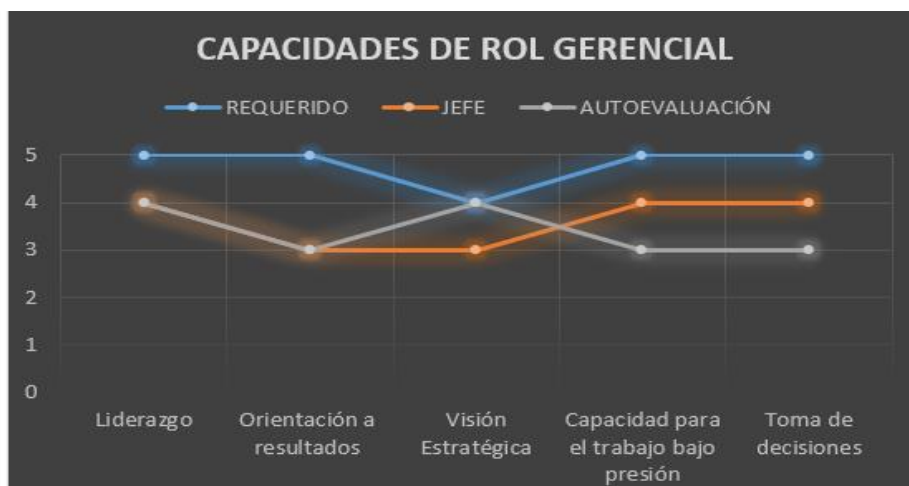


Fuente: Elaboración propia

### Systems management

For the analysis of this management, the results are shown in figure 21. In leadership an evaluation of the immediate boss is observed at level 4, which coincides with his self-evaluation; however, the required profile is level 5, so it can be said that there is an area for improvement.

**Figura 21.** Capacidades de rol gerencial (puesto: gerente de sistemas)

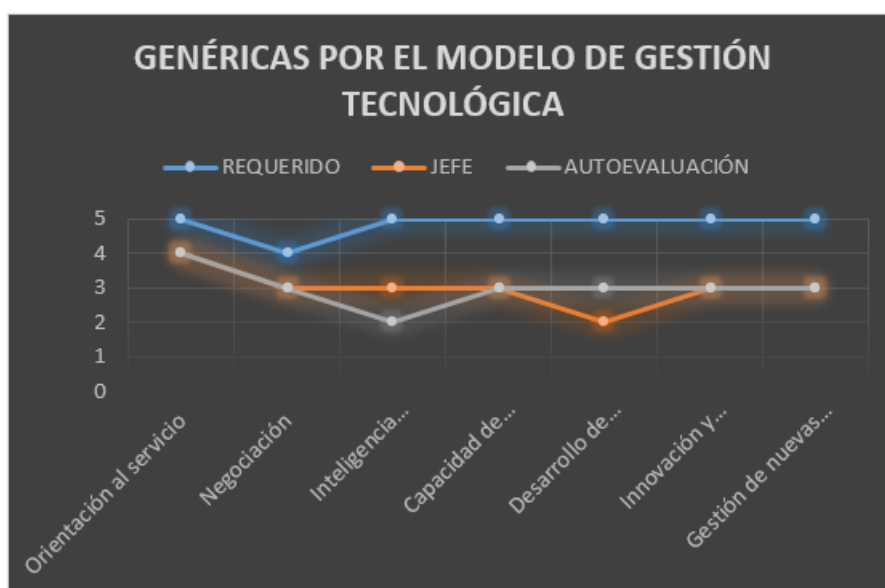


Fuente: Elaboración propia

Likewise, in terms of results orientation, ability to work under pressure and decision making, a level lower than that required by the profile was detected; although it is worth noting that in strategic vision a level 4 of necessary technical competence was reached (figure 21).

Regarding the evaluation of their capacities according to the DNC to support the technological management model, it is necessary for the systems manager to work on emotional intelligence. For managerial development, skills such as service orientation and negotiation must be taken into account, which are presented at level 4 and 3, respectively.

**Figura 22.** Genéricas por el modelo de gestión tecnológica



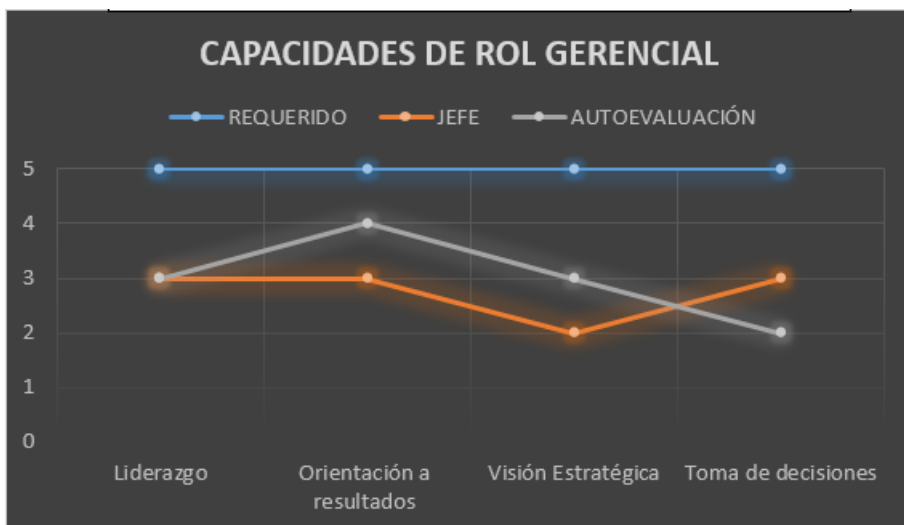
Fuente: Elaboración propia



## Project Management

For this management, in figure 23 it is observed that the self-evaluation of the occupant of the position is at level 3, with the evaluation of his immediate boss for the leadership capacity. However, the self-assessment in results orientation and strategic vision is at level 4, despite the fact that the profile demands a level 5 in all competencies. It is recommended, therefore, to enhance their capacity for strategic vision and decision-making at least 2 levels to reconfigure their leadership and results orientation.

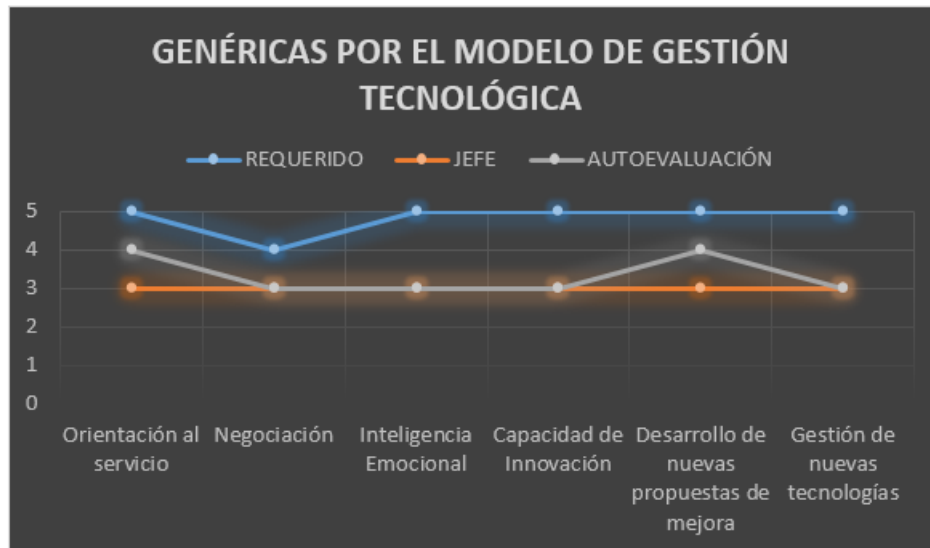
**Figura 23.** Capacidades de rol gerencial (puesto: gerente de proyectos)



Fuente: Elaboración propia

Finally, the capacity for emotional intelligence and innovation must be developed not only individually, but also collaboratively, since this manager maintains relationships with others to follow technology projects in each of the areas (figure 24).

**Figura 24.** Genéricas por el modelo de gestión tecnológica



Fuente: Elaboración propia

## Discussion

The results obtained with this research allow to indicate as a core strength the knowledge management of the organization itself, especially in terms of the development of competencies (generic professionals) and behavioral (of the managerial role) required in a level 5 profile (competence in expert degree and with the ability to teach others).

On the other hand, in the evaluations carried out on managerial performance, knowledge, skills and attitudes of the occupants of managerial positions at level 3 (intermediate competence) and level 4 (competence in high and deep domain respectively) are appreciated. In this sense, the difference or gap between the current managerial competence and that required by the company's management to support and adopt its technological management model translated into the day-to-day life of its employees is notable.

On this line of analysis, it should be taken into account that the field of development of professional competencies is a transition process, which depends on comprehensive performances to identify, interpret, argue and solve problems in the context, with suitability, ethical commitment and continuous improvement. , systemically integrating knowing how to be, knowing how to live together, knowing how to do and knowing how to know (Tobón, 2012).

Likewise, the second relevant strength provided by the research is the socialization of the tacit and explicit knowledge of managers and their own work teams, individually with the conscious achievement of the scope of responsibility and its positive and / or negative impact on work of others. On the other hand, and collectively, they achieve the

certainty of the functioning of their work teams as an integrated whole, that is, in a systemic way they are able to work in workshops, design sessions of descriptions of their positions and evaluation indicators by managerial position with the shared objective of identifying, building, documenting and evaluating their professional performances with an impact on their comprehensive training, improvement of their results and compensation for them.

Regarding the limitations of the study, the diagnosis of training needs (DNC) can be pointed out, as well as the 360-degree performance evaluation carried out by the situational diagnosis, since they must be carried out in a comprehensive way for all work positions and as systematic strategy of continuous improvement. In this sense, we consider that the adoption and transition to its technological management model of the organization will depend on it.

Another limitation has to do with the continuation of full 360 degree monitoring and evaluation, including within the job profile soft (attitudinal), generic (to support the technology management model) and specific techniques (scope of results) skills to detect probable areas of productivity, innovation and technology transfer. For this reason, timely monitoring and feedback is suggested, as well as the dispersion of results by area and specific position for directive decision-making.

The application of the 360 degree performance evaluation method is reproducible and repeatable based on the detection of training needs (DNC) in an objective and systematic way. This process carried out during the research served to detect the competencies, skills and attitudes that can be considered as areas for improvement to achieve the organizational objectives of the company during its transition to the technological management model created for global competitiveness.

The research also provided a significant tool to monitor the diagnosis of training needs (DNC), which were addressed in the update of job descriptions by competencies (job description) to finally be evaluated from the evaluation of performance (360 degree methodology) in terms of knowledge (knowledge), knowing how to be (attitudes) and know-how (skills) of current and potential management to develop in collaborators in an integral way.

In summary, it is suggested to carry out other performance evaluations as a systematic process of continuous improvement for the organization. To do this, it is necessary to diagnose the technical-specific competencies in managerial and operational positions in future organizational interventions, based on the job descriptions obtained in this study, a base analysis document for recording potential adjustments in competencies.

It should be noted that 360-degree performance evaluation is applicable from now on to measure the progress of detection, diagnosis, information processing and performance evaluation tools based on professional competencies.

## Conclusions

Regarding the evaluation process, it should focus on the personal and professional potential of the collaborators and managers involved to detect opportunities for improvement consisting of the adoption of new knowledge and the understanding of the impact of their current knowledge. This would allow people to apply it in a specific work and personal context, as well as the adoption of technical and practical tools for the development of their function.

The evaluation is pertinent and ethically feasible to be developed in an impartial manner with a focus on potentialities from an accurate situational diagnosis. However, other alternative methodologies can also be used to enrich the environments in which the person works. This means that within the organization there may be driving forces to develop the identified competencies, overcoming individual gaps subject to continuous measurement and traceability, taking into account their real potentials individually and within their work teams.

Finally, in relation to the positive effect of managerial performance, it can be said that the results were mixed regarding the evaluation of the positions in heads, coordinators and operational positions that depend directly on them. In short, a positive relationship was observed in the setting of shared objectives, redefinition of work processes and readaptation of leadership styles focused on the development of participatory proposals in work teams in both directions: towards senior management and towards positions subordinate to managerial decisions. Therefore, a comprehensive evaluation is recommended for all positions involved by functional areas of the company.

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<b>Contribución</b>	<b>Autor (es)</b>
<b>Conceptualización</b>	Adriana Fragoso Mora.
<b>Metodología</b>	Adriana Fragoso Mora, principal; Laura Marisela Martínez Sánchez, igual.
<b>Software</b>	Adriana Fragoso Mora, principal, igual; Laura Marisela Martínez Sánchez, igual; Alba Edith Elías Chávez, igual.
<b>Validación</b>	Adriana Fragoso Mora, principal; Laura Marisela Martínez Sánchez, igual.
<b>Análisis Formal</b>	Adriana Fragoso Mora, principal; Laura Marisela Martínez Sánchez, igual.
<b>Investigación</b>	Adriana Fragoso Mora, principal, Laura Marisela Martínez Sánchez, igual; Alba Edith Elías Chávez, igual.
<b>Recursos</b>	Adriana Fragoso Mora, principal, Laura Marisela Martínez Sánchez, igual; Alba Edith Elías Chávez, igual
<b>Curación de datos</b>	Adriana Fragoso Mora, principal, Laura Marisela Martínez Sánchez, igual; Alba Edith Elías Chávez, igual
<b>Escritura-Preparación del borrador original</b>	Adriana Fragoso Mora.
<b>Escritura- Revisión y Edición</b>	Adriana Fragoso Mora, principal, Laura Marisela Martínez Sánchez, igual; Alba Edith Elías Chávez, igual
<b>Visualización</b>	Adriana Fragoso Mora.
<b>Administración de Proyectos</b>	Adriana Fragoso Mora.
<b>Adquisición de Fondos</b>	Adriana Fragoso Mora.