

# UNIVERSITY MANAGEMENT THROUGH INTELLECTUAL CAPITAL: AREAS AND ELEMENTS FOR THE DEVELOPMENT OF IMPROVEMENT PLANS

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## Summary

To respond to current challenges, universities must ensure quality improvement processes in their missional activities of teaching, research, and social function, they require continuous improvements in the management of the institutions themselves, which facilitates mechanisms that promote innovation processes.

However, the management of universities is not simple since, being knowledge-based organizations, they must be concerned about the management of their intangible assets, which are not easy to measure or manage. For this reason, we have appealed to intellectual capital models, since it is through these that organizations have advanced in the measurement and management of their intangible assets. Thus, the challenge for universities is to manage the process of intellectual capital development in order to improve value creation capabilities through innovation.

This contribution seeks to provide elements that facilitate the management of universities based on intellectual capital, so that for each of its components (human capital, structural capital, and relational capital) management areas and the elements that should be considered in each of these areas have been defined, including some guidelines that facilitate the incorporation of improvement plans through organizational management.

## Keywords.

Intellectual capital, university management, educational innovation, human capital, structural capital, relational capital.

## 1. INTRODUCTION

Universities increasingly play a more relevant role in providing alternatives to the challenges they face through their missionary functions and the responsibilities they have in the training of future professionals, the generation of knowledge, as well as social function (de Matos Pedro et al., 2022), also distinguished as community service, social impact, or contributions to development (Hariyati et al., 2019). This highlights the growing concern for reviewing the contributions made by universities for the benefit of society both at the governmental level and at the level of the institutions themselves (Secundo et al., 2015).

According to the European Union report, A strategy for smart, sustainable, and inclusive growth, to move towards smarter growth, it is necessary to "enhance knowledge and innovation as drivers of our future growth. This requires improving the quality of our education, strengthening our research performance, promoting innovation and knowledge transfer" (European Commission, 2010, p. 11). The same report recognized the central role of universities in contributing to the development of a smarter, greener, and more inclusive economy.

During the Consultation for Latin America and the Caribbean in preparation for the UNESCO World Conference on Higher Education 2022, the Seminar on "Quality and relevance of programs" was held, in which Fernando Reimers, director of the Global Education Innovation Initiative of Harvard University, noted the need for universities to develop the capacity to do things better and better, for which it is necessary to professionalize university management.

Universities face an important challenge because they must guarantee continuous improvement in their teaching, research, and social projection functions, in addition to improving their organizational performance, to be able to face the challenges posed by society. Although there is a broad consensus on the importance of management for the performance of organizations and the impact of the use of new management tools and forms of governance, many universities make progress in improving quality without achieving significant changes in the way they are managed (Sánchez & Elena-Perez, 2006) and without having clear strategies to develop innovations that improve their performance (Secundo et al., 2015).

Making progress in improving university management requires understanding that these organizations are characterized by being knowledge-intensive, and knowledge, in turn, is configured as an intangible element, making its management complex by its very nature. But it is possible to generate contributions so that universities have mechanisms to facilitate their management from an intellectual capital approach that provides tools to measure the intangible elements of university institutions.

The question now is: how can university management be improved and how can continuous improvement processes with social impact be promoted? According to Secundo et al. (2015), intellectual capital makes it possible to identify, measure and value intangibles under a global management perspective, which facilitates managerial decision-making. For Edvinson "the challenge is to manage the intellectual capital development process so that value creation capabilities can be enhanced" (1997, p. 372).

Therefore, it is necessary to clarify the definition of intellectual capital and its components. For Bontis (1996, p. 1), intellectual capital is composed of human capital, structural capital, and relational capital and defines them as follows:

- Human capital is the collective capacity of the organization to extract the best solutions from the knowledge of its human resources. It is important because it is a source of innovation and strategic renewal.
- Structural capital includes the organization's routines and structures that support its professionals' pursuit of optimal intellectual performance. An individual may have a high intellectual level, but if the organization has poor systems and procedures for tracking his or her actions, the overall intellectual capital will not reach its full potential. An organization with strong structural capital will have a supportive culture that allows professionals to try, fail, learn, and try again.

- Relational capital refers to the organization's relationships or network of associates and their satisfaction and loyalty to the organization itself. It includes knowledge of market channels, customer and supplier relationships, industry associations, and a solid understanding of the impacts of government public policies.

In order to provide tools that institutions can use to generate significant improvements in their management and that allow them to establish institutional strategies that contribute to the strengthening of the missional activities (teaching, research, and social function), based on innovation processes that make it possible to design and develop processes of continuous quality improvement, we seek to generate guidelines that take into consideration the organizational management according to the nature and activities of the universities, based on an intellectual capital approach.

With the purpose of offering practical tools that facilitate the management of universities, we identify for each of these capitals various management areas based on organizational theory. In addition, we consider the elements of university management that can be used to design and develop processes of continuous improvement in management and that have an impact on the quality of their missional functions.

## **2. HUMAN CAPITAL**

In summary, human capital in an organization is composed of its human team and the organization's capacity to take advantage of the knowledge they possess. Human capital is a subject of management in that it must facilitate mechanisms to promote innovation and strategic renewal.

### **Professional development area**

Establishing programs for professional development is fundamental to define a strategy for the growth and development of universities, generating an increase in productivity and impacting their quality and economic sustainability (Cernătescu et al., 2020). Within the components of professional development, the following elements must be taken into consideration.

- *Knowledge of people.* A professional development program should be based on the knowledge of people's needs and consider their personal and professional interests to support their trajectory and performance. It also strengthens a relationship of trust and security within the organization (Goethals et al., 2004).
- *Training and education for the development of competencies.* The development of competencies is characterized by facilitating a contextualized, flexible, and little or no instrumentalist training, seeking that people manage their own potential and respond to a practical knowledge in which they can apply and respond to challenges effectively (Álvarez Morán et al., 2008). Additionally, it configures a key aspect to increase competitive advantages and organizational strength through the increase of tacit and explicit knowledge, being significant in the management of the intellectual capital of organizations (Peinado Camacho et al., 2015).

- *Incentive systems.* It is relevant for the management and supervision of organizations because it seeks to reduce deviations of the interests of professionals with respect to the interests of the organization and the impact on productivity. Universities should consider trajectory and academic promotion systems as the basis of their incentive system (Interfolio and Hanover Research, 2022).

### **Leadership area**

Leadership in the organization is one of the aspects with the greatest impact on people's performance, because it contributes to the consolidation of constructive relationships, fosters the culture of excellence and impacts productivity, efficiency, and quality, being fundamental for the management of human capital (Pedraja-Rejas et al., 2020). In universities, leadership processes include both those developed by faculty in the framework of their teaching, research, and activities for social impact, as well as those developed by managers, who have decision-making power at the institutional level and academic and administrative links. To strengthen the leadership processes of universities, the following elements should be considered.

- *Training of managers.* Managers are responsible for "planning, developing, monitoring and evaluating the actions carried out in the institution, taking into account human, financial and time resources" (Soler Rodríguez et al., 2009, p. 100). The management of universities should be conceived as a process aimed at strengthening educational projects and the training of those who assume these managerial functions is crucial for the development of organizations and the strengthening of their human capital, and they should be able to understand the internal and external context, lead their teams, plan, and strategically manage each unit, contribute to the development of their faculty, and manage change and innovation.
- *Faculty leadership.* Faculty leadership is linked to the ability to develop a sense of community (Coronel Llamas, 2005) in the missional activities of teaching, research, and social function. It has an impact on the motivation that allows generating impact actions. There is a broad consensus on the importance of faculty capacity building to achieve greater impact as an institution, requiring a high level of commitment on their part (Frost & Durrant, 2002). Not only do they require greater autonomy, but also the ability to make an impact through their actions by exercising leadership in their professional practice.
- *Involvement and empowerment.* To achieve adequate involvement of professionals, mechanisms must be established to facilitate the development of strategic plans proposed and implemented by them and their teams (Davies, 2005), and to allow them to develop their ideas, share their knowledge and adopt proactive behaviors to improve the ways of doing their work (Kim & Park, 2020). In turn, empowerment enables professionals to use their knowledge to implement the improvements they have identified and that are necessary for the organization, and it is important to empower them to implement changes as an integral part of the competitive process (Badore, 1992).

### **Organizational communication area**

Organizational communication seeks to ensure the competitiveness of institutions by contributing to the learning, empowerment, and commitment of professionals (Argyris, 1994). For this reason, university leaders must be concerned about developing mechanisms that facilitate good communication to articulate the needs of academic and administrative units, giving priority to collective work over individual work, and developing adequate institutional planning and management processes. In turn, organizational communication requires the definition of appropriate institutional mechanisms and strategies. Effective communication is related with motivating people and exerting a positive influence on their actions (Pedraja-Rejas et al., 2020). It is crucial to achieve commitment and involvement with institutional objectives and must include two-way communication mechanisms.

- *Top-down*, to ensure that the objectives and institutional strategy are known in the organization.
- *Bottom-up*, so that managers are aware of needs, opportunities for improvement and initiatives from the base of the institution.

### **3. STRUCTURAL CAPITAL**

Structural capital is related to the knowledge that the organization itself has, that allows it to function and that promotes its own development through structures, systems, and procedures (Bontis, 1999). One of the main characteristics of a strong structural capital includes a culture of innovation that allows people to try, fail, learn, and try again, without penalizing failure (Bontis, 1996). In addition, structural capital enables the organization to convert people's knowledge into intellectual assets and to measure and develop its intellectual capital.

### **Organizational design and effectiveness area**

Organizational structures, which include academic and administrative units, as well as the dynamics generated through their articulation and the definition of processes and procedures, guarantee the proper management of organizations, especially when dealing with institutions with complex structures and diverse activities such as universities. In this area, aspects related to decentralization, autonomy and control should be considered, as well as the following elements.

- *Organizational structure*. Understanding the structure and form of articulation of the academic and administrative units of universities serves to understand their systemic nature, given that they generally have academic units that respond to a central government with various levels of centralization. Structures are the basis on which the organization's ability to adapt and respond to the challenges of the environment pivots, having a high impact on the development of the relational system (Gualdrón Prieto et al., 2017). They must respond to the activities effectively performed by the different units and provide clarity in their roles and responsibilities.
- *Institutional policy documents*. Institutional policies are closely related to decision-making processes and their formulation implies the delimitation of institutional objectives (Freeman, 2020) associated with the development of certain procedures. Policies,

therefore, promote capturing and institutionalizing the knowledge generated in organizations (Demuner Flores et al., 2016) and which impacts structural capital.

- *Articulation between administrative and academic units.* The administrative units contribute to the development and promotion of the universities' missional activities, so they must facilitate clear processes and have adequate conditions to promote innovation in the various fields of action (Interfolio and Hanover Research, 2022). In this way, the aim is for universities to respond to the needs of the environment in an agile and effective way. The articulation must be contemplated both, between the different administrative units and between the academic units.
- *Interdisciplinarity and transdisciplinarity.* Organizational structures must facilitate strategies and mechanisms for the development of joint academic activities among different units. Interdisciplinarity and transdisciplinarity are sources of innovations in the missional activities and require substantial changes in management systems and university structures (Braßler, 2020).

### **Strategic management area**

Strategic management includes processes and activities related to decision making, planning, execution, and evaluation, but also to the way in which these processes should be articulated with the organizational mission and objectives. It makes it possible to expand competitive advantages (Moldovan, 2012) and contributes to the optimization of missional activities. It also considers decision-making processes based on institutional information and data.

- *Strategic and participatory planning.* Institutional planning facilitates connecting the mission with the institutional vision through clear and measurable objectives and structured activities. It requires the knowledge and commitment of the people who make up the various academic and administrative units, so it should be developed from participatory processes with defined roles and responsibilities and specifying quantitative and qualitative indicators.
- *Strategic development.* It guarantees the fulfillment of the objectives formulated in the strategic planning through mechanisms and procedures for the follow-up of the proposed activities based on defined indicators, activity schedules and the assignment of roles and responsibilities.
- *Reflection and evaluation.* Reflection and evaluation processes provide the necessary knowledge to drive improvements in the organizations. It is important to clarify the management indicators, the way in which they will be measured, the frequency with which they will be monitored and the mechanisms through which the information will be obtained (Stufflebeam, 1996).
- *Digital transformation and data-driven decision making.* Having information on the performance of the organization itself is a source of immense value for organizations. In addition, new technologies support information management and facilitate the processes of information collection, storage, and analysis, which are always essential for continuous improvement. Universities should be able to count on solid information systems that support decision-making, guide improvement, and incorporate a management coherent with the decision-making processes (Stufflebeam, 1996).

### **Innovation and organizational change area**

Innovation aims at improving aspects that have an impact on the quality of institutions and the impact on equity. Innovation must be contextualized so that it can provide answers and alternatives to the real and specific needs of each institution (Ortega Estrada, 2008).

- *Culture of change and innovation.* According to Margalef García and Arenas Martija (2006), innovation processes are important to ensure quality and achieve social impact in the university's missional functions. But innovation requires an organizational culture that provides the necessary means and resources to generate change, in addition to recognizing and rewarding the performance of professionals. The culture of change demands strengthening constructive criticism to identify opportunities for improvement, propose, implement, fail, and try again.
- *Innovation management.* Innovation management considers the processes of generation and adoption that include efforts and activities aimed at creating new ideas, implementing, and transferring them. The generation process goes through the phases of opportunity recognition, research, design, development, and distribution; and the adoption process concerns the way in which the organization becomes aware of new ideas, acquires, adapts, and uses them. Its phases incorporate initiation, decision making and implementation. Innovations can be generated and adopted within the organization itself, or generated by others (Damanpour & Aravind, 2012).

### **Organizational learning and knowledge management area**

Knowledge management implies that people's tacit and explicit knowledge is converted into learning that can be transferred to others and, thus, be appropriate to achieve organizational objectives (Escorcía Guzmán & Barros Arrieta, 2020; Nonaka & Takeuchi, 1995). This is an aspect to be considered in the management of intellectual capital as it contributes to the creation, capture, organization, accessibility, and use of intellectual capital that ensures the sustainability of organizations (Escorcía Guzmán & Barros Arrieta, 2020).

- *Cooperation and communities of practice.* Cooperation processes facilitate learning and the exchange of knowledge within the organization, and communities of practice contribute to their consolidation because they are characterized by the interaction between people with knowledge and expertise in specific topics, and who are willing to share their knowledge, wish to deepen their knowledge and learn from others (Wohllebe & Götz, 2021). Communities of practice also contribute to the processes of strengthening and changing organizational culture, impacting discourses, structures, and trajectory of the community (Endersby et al., 2019).

### **Organizational ethics and social responsibility area**

The commitment of universities in the solution of social problems is fundamental, contributing through teaching, to the comprehensive training of ethical and responsible professionals with

society, as well as research that generates new knowledge in response to the needs of their environment, and from social function activities that transmits knowledge to society derived from teaching and research. In addition, universities must be committed to an ethic of care for people and the environment and be concerned that their community develops each of its activities in an integral and ethical manner.

#### **4. RELATIONAL CAPITAL**

Relational capital refers to the relationships between the organization and its stakeholders, which allows it to increase satisfaction and loyalty with the organization itself. Although for companies it is important to consider the relationship with their clients and suppliers, for universities it is important to consider their internal relationships, such as students, professors, and alumni, as well as their networks and allies, which include other national and international universities, their relationship with social and civil organizations, as well as governmental entities and private companies.

##### **Relations with internal stakeholders' area**

The internal actors are those who strengthen the organizational culture and build the network of external allies. For universities, these relationships are based on their professors and administrative staff, as well as their students and alumni.

- *Relationships with faculty and staff.* Relationships with faculty and administrative staff directly affect the productivity of the organization, so attention should be paid to factors such as the work environment, organizational culture, professional projection and training opportunities (Diaz Muñoz & Quintana Lombeida, 2021). Relational capital involves the ability of people to develop connections between them and other stakeholders, contemplating aspects such as trust and respect to acquire and sustain a competitive position (Marulanda Grisales et al., 2018).
- *Relations with students and alumni.* In organizations, one of the main determining aspects of relational capital is the relationship with its users. Relationships with students and alumni can be measured through indicators such as the increase in the number of students, their satisfaction, sense of belonging, among others.

##### **Internationalization area**

Internationalization processes are increasingly gaining interest to strengthen the universities' teaching, research, and social function activities. However, generating models for the management of internationalization is still a challenge for universities, because a comprehensive proposal must have clear institutional leadership, include the various academic units, generate an impact on the activities of faculty, students, and administrative support units, etc. It is advisable to have its own strategy according to the needs identified in each institution (Hudzik, 2011).

### **National actors' area**

The relationships of universities at the national and local levels are of great importance because they allow them to know and influence the problems of their environment, in addition to generating alliances to provide effective responses to the needs of society.

- *Relationships with allies.* Relationships with allies must be taken care of to the extent that cooperation with other institutions and participation in academic networks strengthen the development of universities and their quality. In this regard, agreements signed with other educational institutions, the development of joint activities and the participation and shared leadership in academic activities can be taken into consideration. In addition, social and civil society organizations, as well as foundations and NGOs, should be considered.
- *Relations with the public administration.* Relations with public administration bodies responsible for making decisions at the local, national, and international levels, as well as with multilateral entities, are necessary for the proper functioning of the universities and the activities they develop. Relations are not only established through formal agreements, but also through collaborations and advisory services on issues of common interest.

### **Image, reputation, and quality area**

The image and reputation of universities often depend on the quality of their missional functions, which also has an impact on the relationship with their stakeholders. Rankings, certifications, national and international recognition, studies of social perception of the brand, appearances in the media, the impact on social networks, or the quality improvement programs themselves are becoming increasingly important.

## **5. CONCLUSION**

The management of universities has been of growing interest to the extent that they are complex organizations, and it is necessary to generate continuous improvement processes to contribute to the development of their mission activities. In other words, a professionalization of management is required so that universities can have a greater impact and influence on the needs of today's society.

To this end, elements that should be considered by universities in their management of intellectual capital are proposed. The areas of management and their elements analyzed here are of interest for the development of continuous improvement and quality assurance plans by university managers. In some way, they seek to contribute to the understanding and measurement of intellectual capital in universities, improving resource allocation processes and the implementation of more effective and efficient strategic and operational actions (de Matos Pedro et al., 2022).

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