



International Journal of Economic Policy in Emerging Economies

ISSN online: 1752-0460 - ISSN print: 1752-0452

<https://www.inderscience.com/ijepee>

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DOI: [10.1504/IJEPEE.2022.10049125](https://doi.org/10.1504/IJEPEE.2022.10049125)

Article History:

Received:	07 January 2021
Accepted:	08 June 2022
Published online:	13 November 2023

Design-proposal of a conceptual model of intellectual property management and technology transfer in the context of higher education in Latin America

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Abstract: Higher education institutions (HEIs) have as their objectives teaching and research, the latter being a relevant factor for the generation of knowledge and technologies that can have practical use at an industrial and social level. However, not all the products generated have practical application or it is not known how to create the partnerships or the means for them to contribute in industrial or social contexts. The objective of this work is to propose a conceptual model of intellectual property management and technology transfer in the context of higher education to provide improvement actions in academia; the case of Instituto Tecnológico Metropolitano is taken as a reference where a diagnosis is made in the area in charge of intellectual property and technology transfer. The model also has strategies for the short, medium and long term that allow to understand its structure. It is concluded that, although it is a model created so that it can be adapted to any type of institution considering its policies and realities, it is necessary to have the support of government, industry and society to achieve a complete articulation and generate better results for these organisations.

Keywords: intellectual property management; IPM; technology transfer; conceptual model; higher education institutions; HEIs; emerging market.

Reference to this paper should be made as follows: Gaviria-Yepes, L.M., Valencia-Arias, A. and Hincapié-Montoya, E.M. (2023) 'Design-proposal of a conceptual model of intellectual property management and technology transfer in the context of higher education in Latin America', *Int. J. Economic Policy in Emerging Economies*, Vol. 18, No. 1, pp.102–116.

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This paper is a revised and expanded version of a paper entitled ‘Design – proposal of a conceptual model of intellectual property management and technology transfer in the context of higher education’ presented at Brawijaya International Conference on Economics, Business & Finance (online), University of Brawijaya, Malang, Indonesia, 4–5 December 2020.

1 Introduction

Developed countries, or those that offer a higher quality of life to their inhabitants, are those that invest more in research and development and whose academic processes have high quality practices (Wang and Zhang, 2020). For this reason, betting on education and, above all, on academic and research processes contributes to technological progress, which, added to capital inputs and an increase in the labor force, drives a country’s economic growth (Armeanu et al., 2017; Rahmat, 2020; Wu and Liu, 2020). But it is not only about investing money, a diagnosis must also be made in the key areas to ensure successful results.

Managing intellectual property (IP) is a key factor in any organisation, this allows to maintain control over IP assets and identifies which of these assets can have a commercial potential or can solve problems in society. Higher education institutions (HEIs) have as an objective the generation of knowledge, however, not everything is susceptible of application (Govender et al., 2018; Gómez-Bayona et al., 2020), therefore, it is necessary to identify key points and establish improvement actions so that the knowledge generated has a practical use not only at industrial level but also at social level, in this step, is when technology transfer becomes vital to facilitate these processes (De La Torre-Martínez et al., 2016; Pisár and Varga, 2018).

Some studies sought to develop a model for the management of industrial property rights focused on patents from the universities of Colombia, Chile and Spain (Gómez et al., 2009), however, their study does not fully understand what IP encompasses. On the other hand, at a university in Cuba, research was carried out to develop a methodology

for the management of visible or identifiable intangible fixed assets that includes IP, but is not relevant in technology transfer processes (Mesa Palacios et al., 2018). Finally, a study in India sought to identify the barriers of HEIs in the generation of IP, its commercialisation and technology transfer, where it was discovered that the lack of proportional incentives to inventors, links with industries and facilities were the main obstacles between universities and research institutions, in addition, the institutional policy of IP should promote the links of the industry with the universities that result in the generation of IP and the transfer of technology successfully (Sattiraju et al., 2021).

In this research, it is proposed the design of a conceptual model in intellectual property management (IPM) and technology transfer for the context of higher education, the objective is that this is replicable to other institutions and easily adaptable to their contexts. In the first part, some theoretical references in the scientific literature are shown that will allow the understanding of some of the concepts discussed here; the methodology shows the way in which the results are obtained, the means and sources used; the results show the description of the model and some medium, short and long term strategies to take into account for success, in addition to the group discussion and some useful data for the recommendation; finally, the discussion section and conclusions are presented.

2 Literature review

Numerous articles can be found in the, about technology transfer, IPM and companies and HEIs literature (Barragán-Ocaña et al., 2019; Bengtsson, 2017; Fuquen and Olaya Escobar, 2018; Hayter et al., 2020; Holgersson and Aaboén, 2019). The terms proposed can be confusing since some authors frame these activities within processes such as R&D, knowledge management, technology management, among others.

IPM is part of technology transfer as a concept beyond the legal aspects (Fischer et al., 2018; Gargate and Momaya, 2018). There is research that sought to develop a methodology for managing IP in science, technology and innovation projects at a university in Cuba, where its results mentioned that the methodology allowed projects to be valued from the perspective of IP in its management process, ensuring actions related to the acquisition, conservation, maintenance and defence of IP rights that have their output in research, development and innovation activities (Domínguez et al., 2018).

A reference of IPM at Latin American level is the study carried out by Luna López and Solleiro Rebolledo (2007), addresses the policies of protection of technological developments, the key elements of value creation in research projects and the development of patents and other IP titles, creating a model that is compared with the IP practices of the Instituto Mexicano del Petróleo. Thus, the concept of IPG is no longer focused only on the protection of IP assets, but on a series of activities that seek to maximise the economy from the knowledge and innovations of the institutions (Rodríguez-Lora et al., 2016; Tejedor Estupiñán et al., 2018).

Globalisation, free market and the great competition, force the companies to act very quickly before the changes that take place (Kowalska-Potok and Cirella, 2019). Therefore, it is necessary to use information and communication technologies (ICT) that are at the forefront of production processes, the aim is to generate an added and innovative value with the processes and assets of the different organisations that participate in the economic system (Geissdoerfer et al., 2018; Medina et al., 2019).

To this end, companies must create cooperation networks with universities in order to strengthen and generate new technologies that promote innovation within these (Marín et al., 2017). These networks of cooperation can also be a function of the policies formulated by governments, which consequently also benefit from these alliances (Castillo-Vergara and Alvarez-Marin, 2015).

The alliances between universities and companies have meant great advances through time, in fact, these dates from the time of the Industrial Revolution, when the knowledge for the construction of the steam engine arose as the beginning of modernising the industry (Urquijo Valdivieso, 2017). From that moment on, a before and after in the forms of production was marked, which has been a key factor in the development of society in general.

It is for this reason that the concept of technology transfer arises, which, according to Medina et al. (2019), is known as the set of actions that serve to support and facilitate the adaptation, reproduction, and dissemination of a product, generate technological resources to achieve competitive advantages in the socio-economic environment, which will eventually translate into development for a region. This transfer, although it involves several types of organisations, usually occurs more between HEIs and companies (Macias Urrego et al., 2018).

The HEIs are important centres that are catalogued as training agents, places where knowledge is created and where society develops (Luna López and Solleiro Rebolledo, 2007; Gaviria-Yepes and Londoño-Llanos, 2016), for this reason its role is fundamental and more speaking in a society that every day must be more competitive and requires knowledge and technologies to improve the living conditions of those who live in society (Nord et al., 2014). These institutions over time have been transformed according to the global economic order, where the production of knowledge has a fundamental role and is driven by competitiveness policies for this, great efforts are made to create knowledge and innovation (Marín et al., 2017).

In five high-profile research institutions in the United States, Chile and Argentina, a study was carried out whose purpose was to compare the operation and structure of IPM programs, technology transfer, and the mechanisms through which promoting entrepreneurship. The research allowed to identify common objectives and central activities, shared and implemented in a similar way among the five institutions, however, the analysis also identified divergent areas within the structure and operation of the various technology transfer programs, which represent significant differences. between institutions (Jefferson et al., 2017). In addition, some Latin American universities study the implications of technology transfer, as is the case of the University of Concepción in Chile, where it was sought to contribute to the identification of the determinants of technology transfer within the institution, where a positive effect was obtained. statistically significant associated with the number of patents requested by R&D projects (Catalán et al., 2019), despite the results there is no deeper focus on determinants that make up IP.

In order to respond to the needs of the market, the HEIs have a series of processes, among them the missionary ones, among which are the realisations of training or teaching, research and extension activities (Bennett et al., 2018; Pineda Márquez et al., 2011). It is in research activity where knowledge is produced from existing knowledge and it is here where knowledge plays an important role since it should not remain only at the institutional level, but should be applied or transferred to industry, research centres and other institutions.

3 Method

The level of research that refers to the degree of depth, with which the problem is addressed, for the purposes of this research, will be of a descriptive type since information will be collected on concepts and variables and it is not intended to seek a correlation between these (Hernández Sampieri et al., 2010). One could also speak of an exploratory character due to the collection of data in primary sources in one of the phases of the investigation.

Depending on the period or extension of time, it is also of a simple transversal nature, since the time situation was characterised in a specific period, for this case, at the time of data collection. This research was carried out under the qualitative approach, since it is guided by significant themes and areas of research and the mode of data collection is not numerical, which allows for more open interpretations of the data obtained (Hernández Sampieri et al., 2010). The inputs used in this phase were primary and secondary sources, the former having to do with semi-structured interviews with people in charge of the area of IP and technology transfer at the Instituto Tecnológico Metropolitano – ITM, and the latter with contributions from literature reviews in specialised databases and taking into account that this must be done constantly in order to identify progress in the topics covered in this research.

The ITM is mentioned as an object of study because it is the largest HEI and has the greatest resources in terms of human talent and infrastructure in the city of Medellín, Colombia. Additionally, in the ITM, some potentialities are evidenced in terms of its GPI practices and that directly influence the TT processes, however, these practices are not in a maturing process that allow positioning the institution as a reference to Local level, for this reason, is defined as the institution under study.

It is proposed then, the design of a conceptual model of IPM that can be replicated in other HEIs, starting from the ITM case.

4 Results

Next, it is presented the conceptual model that contributes with a better understanding of the situation in the ITM in front of its referents and later, the proposal of a series of improvement actions formulated as strategies to enrich the existing processes.

Now, in order to define a conceptual model, it is necessary to first recognise the synonyms of that term, among which are: conceptual system, framework, paradigm, and disciplinary matrix. It should also be clarified that there is no global consensus on the concept as such. Therefore, it will be necessary to proceed to the construction of one own based on the definitions of other authors. Thus, a conceptual model explains in a general way a set of coordinated elements that respond to some guidelines, with a specific order and that by working in a coordinated way contribute to the fulfilment of a specific objective. This is usually represented graphically as a flow chart, which is done, often with a block diagram appearance, to synthesise a problem and proceed to the organisation and testing of existing data. Thus, a conceptual model is the process by which a real event is observed and organised, obtaining one or more conceptual entities with spatial distribution and concrete temporal evolution. Therefore, it is a communication tool, which tries to understand the important concepts and their relationships, which in turn allows the simplified visualisation of a thought structure or solution, with the purpose of

transmitting knowledge in a simple way (Balmaseda and Ponce de León, 2010; Kuerten Rocha and Lenise do Prado, 2008).

For the elaboration of the model and the strategies, in addition to the interviews, the discussion of the interview groups was taken into account, in which the following categories are highlighted: mission orientation, where the role of HEIs in relation to society is highlighted; entrepreneurship, where the main forms of entrepreneurship in the institution and the accompaniment given to the members of the community are defined; commercialisation, which has to do with the actions for the generation and transfer of technologies and/or knowledge to other organisations, especially companies; protection of IP, where the different strategies for the protection of tangible and intangible assets were evidenced; monitoring, this variable analysed aspects such as auditing and surveillance of technological assets, a key factor for the monitoring of technologies; promotion of research, the way in which research processes are carried out through research groups and formative research from the institution's research groups was analysed; improvement actions, the last category, referred to the perceptions of the interviewees in order to significantly improve the institution's processes, which was aimed at the consolidation of processes and other technical aspects.

Based on the previous discussion and the mapping of the characteristics, the conceptual model is developed, which can be seen in Figure 1.

The previous conceptual model is an adapted representation of the existing model called 'scientific dissemination – communication' which is the most current in CTIC and allows to understand the practices of IPM from a general vision to strengthen the processes of technology transfer in the institution of study. This model is proposed with a circular structure without beginning or end, that is, it constantly follows a process without waiting for a specific need to start its cycle. Now then, a starting point of the model could be the selection and administration of projects, for the specific case of the ITM, research projects; at this stage, projects that respond to a specific need or problem of the society should be taken into account, in order to focus the research on a practical use; after this, the acquisition of research licenses is fundamental to execute projects that require it.

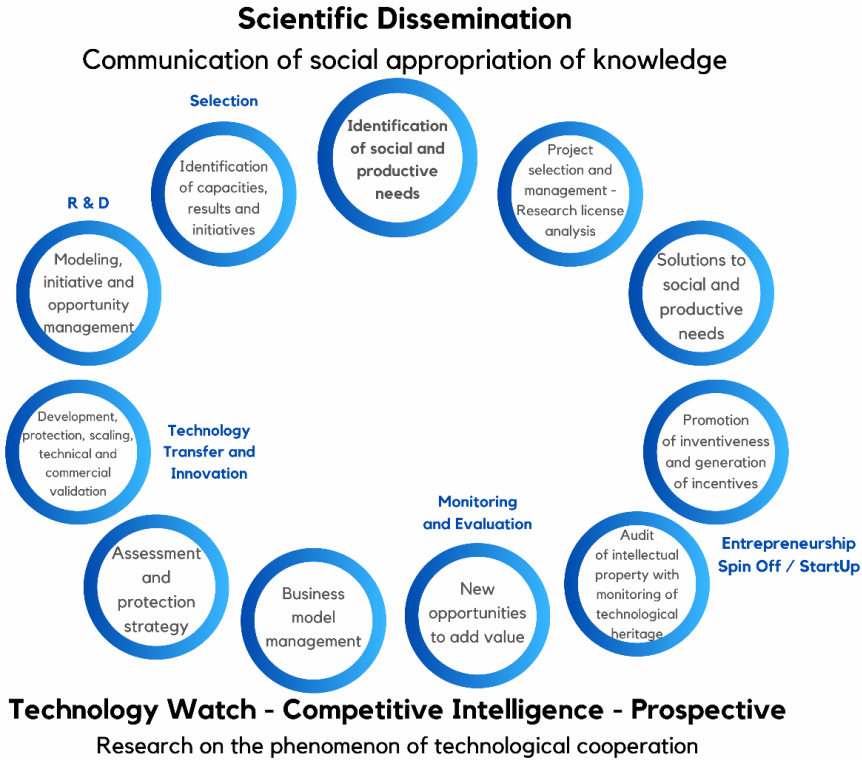
In the identification of capabilities, results, and initiatives, will be defined from the research groups with specific projects that are addressed according to the capabilities of each, or also raises whether it is necessary a collaboration between two or more groups. In the part of modelling and management of initiatives and opportunities, it begins with the development of research, after this, the development and prototyping that lead to an initial version of the result of the research, in this stage, in addition, the technical and commercial validations are made to find an optimal development.

Once the model is ready, it proceeds to identify which are the most appropriate protection strategies in terms of IP, thus differentiating whether the result of the research will be protected under copyright or under industrial property. Likewise, according to the valuation methods, the most appropriate one is defined according to the research result.

When the previous process is finished, the business model is managed, in which depending on the type of IP and the method of valuation, the invention is managed. Subsequently, once presented to potential clients or beneficiaries, it is defined whether it is possible to generate new opportunities for value generation; at this stage the scaling of technology readiness level (TRL) is analysed. Once the result of research or invention has been transferred to the industry or society, it is important to leave a record of this and regularly, make an audit, that is, keep track of payments of fees to patents, trademark renewals and other records. On the other hand, the surveillance of the technological

heritage is also important in the sense that, although it does not avoid the infringements to the IP, it allows having a fast action against the infringers.

Figure 1 Proposed model of conceptual model of IPM and technology transfer (see online version for colours)



Source: Created by authors

The promotion of inventiveness and the generation of inventions on account of research results that have been transferred through licensing, is also a need to further motivate researchers, who are already encouraged by the generation of other products such as academic articles, for research as such have assigned a few hours in their teaching work plan, however, offering an additional incentive, on account of royalties, would achieve greater impact on future research.

Even though the model could end up delivering a solution to the productive sector or society, the ideal is to continue with the cycle and not do it in a linear way. This refers to the fact that it is decisive to work with needs or problems, that for example the ITM is an institution that is attentive to investigate current and circumstantial situations. To that extent, technological surveillance, competitive intelligence and prospective processes will be carried out, which support each of the stages, that is, they are not exclusive to one and oversee identifying similar technologies, possible infringements to IP rights, projections, among others.

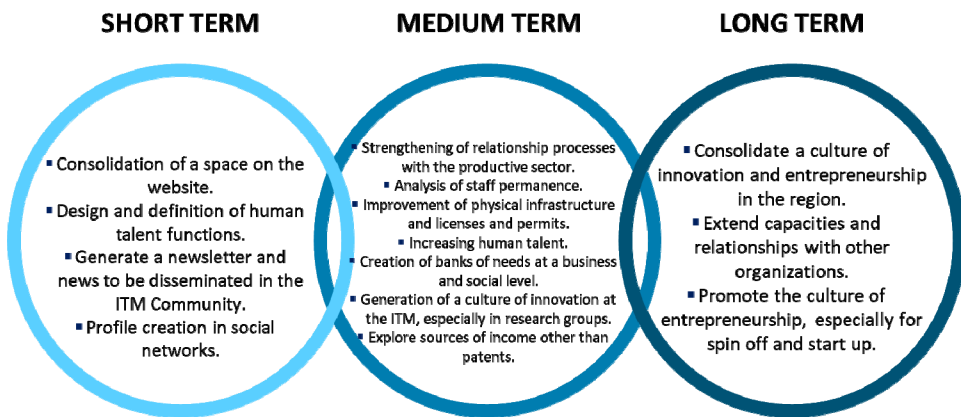
On the other hand, the process of scientific dissemination and communication will not only cover the scientific and productive spheres but also the social ones, because under the social appropriation of knowledge, communities can learn about these inventions in a

daily and close language, to use them in their daily life. The importance of other non-conventional means of dissemination such as social networks, internal bulletins, among others contributes to inform the nearby community.

Finally, and although it is not part of the end of the process, it is significant to mention that the generation of enterprises from the academy is also presented and the most common are spin off and start up, which can occur in any of the previous stages and should be treated as other types of technology transfer, there is the participation of teachers and students. Although this option is not yet well regulated by the national government, it is presented as a collateral and emerging process and to that extent, it is necessary to take it into account and define its process.

Finally, after the literature review, the comparison of practices and the analysis of the perceptions of the people in charge of IPG and TT in the MTI, it proceeds with the proposal of the strategies that, in terms of IP management, could contribute to the improvement of the technology transfer processes. The following strategies have been proposed according to three specific time periods; short, medium and long term, considering that not everything can be done in the same time. Figure 2 shows the proposal in graphic form.

Figure 2 Proposed strategies (see online version for colours)



Source: Created by authors

4.1 Strategies for the short term

For the short term, which is defined as a period between six months and one year, strategies are proposed that focus on visibility, both at the institutional and city level. The first thing that should be established is the creation of a space on the institutional web page where basic aspects such as mission, vision, objectives, values, functions and, if possible, some success stories of enterprises and relationships with the industry are shown as dependencies.

In the revision of the web pages of the most outstanding HEIs at a Latin American level, the good presentation of their spaces in the institutional pages stands out, in addition to the description of functions and processes, a good start for the ITM would be to define the positions of each one of the members of CTIC and with this achieve the

recognition of the key people and also an appropriation of them with the institution when seeing that their names are visible in the web page.

On the other hand, the creation of a bulletin corresponding to the specific area will make it possible to reach a wider audience in the ITM community, and to make known, in terms of activities, news and special events. In the ITM there are other areas or departments that have their own bulletins, as is the case of the Department of Library, Cultural Extension and Editorial Fund, which has the Newsletter Galileo, which is a fortnightly bulletin that includes, among others, news and novelties of the department as well as giving advice and making specific notes on some topics of interest. This is sent to the ITM community by means of an e-mail and is also available in the Library site in the web page of the institution so that other people different from those of the ITM can access its contents.

The next recommendation is the creation of a profile in social networks and it is proposed to generate a reach at another level, since social networks, are not necessarily followed by people from the institution and, moreover, from certain strategies (hashtag, guidelines, among others) it is possible to have a great reach. In social networks it would also be possible to share other types of content related to the newsletter and other fields, in which you can communicate meetings or conversations in real time with an audience, interact with users, present news, among others.

4.2 Strategies for the medium term

For the medium term, which can comprise between one and five years, strategies are proposed that can be classified as positioning, because, by generating strategies for the short term, it has already been achieved in this period, that the institution and especially the CTIC area is recognised locally and nationally, and why not, internationally.

The first recommendation refers to the strengthening of the relationship with the productive sector, that is, that they not only meet with this sector to generate specific solutions, but that the links are long term and physical spaces can be created for this task. Human talent, without a doubt, is key to this work. For this reason, it will be important to analyse its permanence, as long as the technical and emotional requirements for assuming the position are met, this because, at present, most employees at the ITM are contractors and the CTIC is no exception, therefore, the reflection is the following how much does it cost an institution in terms of time and other resources to train the staff? Under the role of contractors, many people may move more of their positions in search of better opportunities, which translate into high staff turnover, which can be harmful to an organisation. The invitation is to analyse people's positions and, as far as possible, improve working conditions.

Very much in line with the previous proposal of human talent, is the improvement and expansion of physical infrastructure, as an area grows, it is also necessary to adapt the spaces for the comfort of people who are there, On the other hand, according to the analysis of the interviews, a latent need is to increase the acquisition of licenses for academic and commercial databases, sometimes you do not have access to all the information which can generate delays or inconsistencies in the delivery of products.

An important bet, will be to create a bank of needs at the business and social level, i.e., an initiative which interacts not only with the productive sector, but also with the social and where ideas and needs for both are exposed, that the proposals are not only generated in business conferences or workshops of co-creation, but can be taken to the

neighbourhoods so that people first of all, learn about what the institution does, the processes of technology transfer, its usefulness and potential that can generate in the community.

Another recommendation is to generate a culture of innovation at the ITM, this at the institutional level, but especially directed at the research groups. At present, it is common to see that researchers may not agree on specific developments for the industry, some of their research may have other origins among personnel or as the work of the research group depending on its reason for being. However, the reason for research should be rethought and a process of awareness and generation of innovation culture should be started where researchers generate only products that really have a practical and useful application either in industry or in society. This could happen with the generation of new incentives, different from those they already receive for the generation of some products (papers, presentations, designs), that is, if a patent is created and it is possible to license it, giving a percentage of the profits to the researcher, added to that is the recognition in front of the institution and in the media, highlighting the participation of the researcher and the impact that his creation had.

Finally, it is recommended to explore other sources of income different from patents, in the issues of technology transfer, the most common is to think of patents, but it is not the only thing, although patents represent a great impact on society and business level, it is important to bet on the generation of other IP assets such as software, among others, which can produce other income and also open new lines of research.

4.3 Strategies for the long term

The long term, commonly defined as between five and ten years – even longer – is a space for generating strategies of permanence in which constant work must be done. The strategies formulated for the long term are those that represent the greatest risk for an organisation, however, they can also determine great opportunities.

The first strategy proposed is the consolidation of a culture of innovation and entrepreneurship in the region, if the previous strategies have been generated within the established timeframe. By this time, the ITM and as such CTIC will be a recognised actor in the region, where its main objective is to generate synergy between industry and society and be, in turn, an agent of change. It is very likely that the judicious implementation of these strategies will be able to generate this culture of innovation at the regional level.

As for the relationship with other organisations, it is important to continue working on the alliances that are currently in place and project new ones with other institutions with which they have aspects in common (solutions, lines of research) in order to better focus their efforts. On the other hand, if the expansion in infrastructure and human talent is accomplished, the capacities to respond to the requirements derived from the alliances could be increased. In order to establish alliances in a long time, it is important to follow up the inventions or licensed products and to offer guarantees of these.

Finally, university entrepreneurship, which should be promoted not only as a form of graduate work, but as an opportunity to generate other possibilities in the life of researchers, if the capacity to respond to requests is increased and training begins in research groups, more companies can be generated with less uncertainty. To do this, the current regulations must be considered, since, for example, up to now the spin-off status

has not been established in the country, so special attention must be paid to these regulations, both locally and internationally.

As a way of monitoring compliance with the above recommendations, the following data or projections are provided for these recommendations, see Table 1.

Table 1 Data on recommendations

<i>Recommendation</i>	<i>Follow-up date</i>	<i>Expected target</i>
Short term	Within six months to one year after its implementation	Consolidation of CTIC within the institution as a generator of technologies and entrepreneurship, as well as having social and dynamic networks that allow it to differentiate itself from the competition.
Medium term	Within the next five years after its implementation	Positioning of CTIC in the region and at national level through relationships with different institutions, especially companies.
Long term	Within the next ten years after its implementation	Generation of innovation culture in the region and consolidation as a Research Results Transfer Office that generates alliances between different institutions and at the same time synergy to promote technology transfer in the region.

Source: Created by authors

According to Table 1, the goals are defined for specific periods of time; however, legal and administrative aspects within the institution must be taken into account to guarantee their correct execution.

5 Discussion

Works such as that of Medina et al. (2019) present a model for technology transfer and competitiveness in the business field in Cúcuta, Colombia, which proposes a framework that links endogenous, self-sufficient, and sustainable development, which is related to the cycle of scientific dissemination proposed for the ITM, since attention is paid to technology identification that has to do with business networks, scientific and research events, in addition to the motivations in the acquisition and orientation of efforts at the time of making decisions in the market are relevant aspects defining rigorous sources of information. The authors also express the need to generate training actions for the transfer of knowledge and development of employee skills, which is consistent with medium-term strategies for the permanence of staff in the institution. Along the same line, there is another study where the need to train human capital in HEIs in the use of ICTs in a continuous way is expressed, especially the teaching population, which contributes to the integration of innovative technologies to enrich the didactics in teaching processes and suggests providing tools to strengthen the ethical dimension for the management of copyright (Marín et al., 2017).

With respect to HEIs, the study by Castillo-Vergara and Alvarez-Marín (2015) asks about the transfer of research in HEIs through spin-offs in Chile to impact the economic system so that the ventures that arise in university centres can be based on innovation, for which they consider it necessary to regulate IP rights with the help of public policies, as opposed to what is also necessary to do in the local context, since for the moment there is also no regulation of this activity among research teachers and universities. To this end,

the authors suggest “incorporating instances that strengthen development, participation and the role played by the research team” (Castillo-Vergara and Alvarez-Marin, 2015), considering strategies that go beyond the technical profile of the teaching team.

On the other hand, as mentioned in the article, the relationship with other organisations is necessary to generate new alliances that strengthen technology transfer actions, as also endorsed by Novickis et al. (2017), who say that through knowledge management, innovation and technology transfer processes consolidated in a model tend to collaborate between the scientific and business sectors, through research results there would be greater promotion and dissemination of findings that can be adapted according to the needs of any organisation.

In an international context, May Amy et al. (2020) and propose the adoption of technologies in terms of improvements in staff performance in a HEI and how technologies are a key factor in articulation with the industry. On the other hand, Sergi et al. (2019) in terms of entrepreneurship, show how it can influence economic growth, especially in countries with emerging economies, which goes hand in hand with the proposals of this work where it is suggested promoting entrepreneurial culture.

6 Conclusions

It is necessary that, in HEIs, there is a model or policy to manage innovation, this is because the processes of IPM and TT must be articulated with industry and society, without these guidelines, the model will not have the expected purpose.

Among the actions that will contribute to strengthen and consolidate the proposed model for technology transfer and IPM, is the establishment of a culture of innovation and entrepreneurship that should start in the institution and in others where the model is proposed, this as a means to give guidance to what should be conceived in the universe of technology and research management.

Education and training of teachers and researchers is a key factor to achieve more accurate results in terms of research with practical utility. This refers to the way in which a relationship with the industry is achieved, although teachers are not the ones who carry out the negotiation process, if it is necessary that they are aware of the practical benefits of their research and are willing to go a step further to generate solutions at the business level.

The policies of each institution and those of the government must be taken into account at the time of making any diagnosis and later proposal, that is, each institution is a different world in terms of policies, which is why the proposal of the model is standardised for its practical adaptation to the needs and realities of each HEIs.

The social appropriation of knowledge is presented as a way to reach more people when formulating research projects and finding innovative solutions in which academia, the business sector and society can participate, so that actions can be managed that have a social impact from the recognition of needs at the social level.

Among the practical implications of the work is the replicability of the model and the strategies by any HEI in the Latin American context, since the realities are similar in terms of legislation in countries with emerging economies. On the other hand, it can contribute to the development of standard policies that can facilitate technology transfer processes between HEIs and industry, contributing to a certain extent to improving the economy and conditions in the population.

As future work, it is proposed to take data from other institutions with similar realities, to finish contrasting the information thus presented and to contribute to the generation of actions to improve and update the subject, which is fundamental for development.

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