

Proposal to encourage Innovation in MSMEs, with the appropriation of serious game

FOSADO-MARTÍNEZ, Dulce Olivia*†

Universidad Politécnica Metropolitana de Hidalgo. Boulevard Acceso a Tolcayuca 1009, Ex Hacienda San Javier, 43860 Tolcayuca, Hgo.

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Abstract

After researching entrepreneurial profiles close to the Polytechnic Metropolitan University of Hidalgo (UPMH) in Mexico, this writing provides a framework for best practices to strengthen the longevity of micro, small, and medium enterprises, employing WakeUp Brain and a 360 degree model.

In part, this writing relies on information about the entrepreneurial environment in closest three municipios to UPMH.

Innovation, Serious play, 360 degree Model, MSMEs

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* Correspondence to Author (dfosado@upmh.edu.mx)

† Researcher contributing first author.

Introduction

What is presented below is the experience that has been obtained with the desire to find actions that impact on the improvement of micro, small and medium enterprises.

When a review of the topic of innovation is made, it is impossible to separate it from creative processes and science. Although there is a considerable production of terms and definitions on the subject, what the University of Quilmes published in Argentina (1992) is repeated: it is possible to understand the innovation process as the use, application and transformation of scientific knowledge and technicians to solve certain specific problems. These ideas have been promoted and have been visible for more than three decades, especially in the companies belonging to the bloc of the countries of the Organization for Economic Cooperation and Development (OECD).

It seems unquestionable that innovation is linked to R & D (Research plus Development), however, every time there is a wide range of scientific writings and reflection on the paradigm that has been generated around the concept of innovation and that relates it with the MSMEs and not only with the large corporations and industries that are able to afford the cost of maintaining a team for R & D as was demonstrated in 1987 by Mordschelles-Regnier et al and contrary to what the collective imagination has traditionally thought when associating major multinationals with major multinationals (Vossen, 1998).

The idea is not to make an extensive treatise about it, but to pay towards what is closest to companies that use soft technology (it is known as that which refers to its internal or administrative development) or to what is not necessarily generated in industrial processes and transformation.

That is, MSMEs that are mostly service providers and in a lower percentage of manufacturing and intensive application of technology.

Justification

How could the UPMH be effective through the Innovation paradigm? In the context of being an educational entity, with limited human and economic resources applied to research it has been indisputable to understand and have knowledge about the population that lives in the region or territory in which the educational infrastructure is located.

For the institution, located in Mexico and in a metropolitan area adjacent to Mexico City, this knowledge is coherent, not only from the perspective of considering the population as the possible users of educational services but also to that population at the same time that can be served in various areas and thus achieve the link with society, which sometimes seems a utopia and for the much-needed transfer of knowledge and technology in which an institution of this nature should have as an aspiration, in its ratio of be and in their schedules. However, it is not intended to do from a welfare paradigm, where the actors involved or the community that is impacted or linked has a passive role, right there is the right field for what is recently known as Innovation with a basis in the social.

The institution in question is one of those that, in its category, represents a possibility to make a qualitative leap for those who graduate by belonging to the BIS Universities model since 2014, which means being Bilingual, International and Sustainable.

This connotation implies maintaining an innovative perspective both of its internal administrative issues and its outward projection.

Involves activities particularly directed to both students and teachers who give support so that graduate students can do so in an environment that distinguishes them from the new generations that are coming out in this school year of 2017.

The BIS graduates are students who have a level of competitive English, who had opportunities to have exchanges in other countries and who maintain an attitude and understanding of the world towards sustainability which, as we know, is a strong aspiration of our civilization because the dimensions of the environment and harmonize with those that allude to social and economic factors. In this context, the institution can aspire to make social innovation a perspective that contributes to the appropriation, modification and operation of the paradigm through the co-creation of initiatives that can be efficient, accepted, incorporated and inclusive.

With the information that we have of the companies that are located in the municipalities that are geographically close to the UPMH, our strategy is to promote what has recently become known among innovation strategies: gamification.

Although the term is a composition of an Anglo-Saxon word, of "game" (game) and that effectively alludes to the ludic, to the enjoyment of an activity, it has turned out to be a tool that can be applied to transform the entrepreneur's vision and that which is related to your company internally. It is a bet that you have to work on and bet decisively.

It requires a huge amount of time and effort to use the innovation for the takeoff of the MSMEs, but it is considered that there is no other option that is affordable, we must bet on the creation of value, a recomposition of what already exists.

Open innovation practices in companies will never see the fruits if the so-called internal business ecosystem based on knowledge and acceptance of the "culture of innovation" is not built beforehand and organized from a structure that encourages the participation of all members of the organization.

Gamification is a practice that facilitates a participatory culture based on the innovation of internal and external agents.

There is a whole theoretical framework that supports the use of this resource, however, what we want to emphasize is that, within this strategy, a series of ways to carry out gamification have emerged. On the one hand is what refers to marketing and customer acquisition through the use of social networks and applications or apps, which has interaction through video games or the use of information technology such as clear examples Foursquare that appeared in 2009 and has become a benchmark application in both geolocation and gamification.

Another case is that of Nescafé Dolce Gusto that includes on its website a section of games for registered users; BBVA, which in the banking and insurance sector is committed to this new strategy initiated in 2012 for Spain; Nike under the Nike + modality, both in the functionality it provides for the user, and in the way of communicating its strategy and the devices through which the connection can be made, marks a benchmark of good practice in gamification (De Pablos and Gallego 2013, 811) all with the intention of maintaining an interaction with users or customers.

As an example in the services and with their own employees, according to what the authors De Pablos and Gallego (2013) report, Accenture¹ is a consultancy that is advanced in the use of gamification to change behavior and motivate in the achievement of actions, promoting new values not only work but habit that they want to introduce into the life of their employees of a company, whose results are reflected through its initiative that has supposed: "an improvement of the motivation of the employees ciphered in a 6%, likewise that the improvement of the labor climate has increased in a 7%; the loyalty of employees by 5% and the decrease in turnover by 2%, concluding that the impact has reached 56% of the workforce".

Another clue about the implications of gamification, is a branch known as serious games as those designs that are used to reinforce knowledge, as reported by Mezquita and Vergara (2016) in reference to use in a school, where its use is increasing in the application of the methodology that has favored the dynamics of teachers with their students and that has been achieved that they are increasingly involved in the teaching and learning process. These authors affirm that it has been demonstrated that the dynamics of active learning can clearly motivate the students and the people involved in the process (Baillie and Fitzgerald, 2000, Freeman, Eddy, McDonough, Smith, Okoroafor, Jordt and Wenderoth, 2014; Huber, 2008). In this sense, the strength of innovation in the processes of generating knowledge through the game is a circumstance that the UPMH wants to capitalize through the Educational Program of Administration and Management of SMEs, through its application first in the classroom, with the use of an exprofeso built facility, the laboratory of Lego Serious play.

This infrastructure enabled in the facilities of the University, is for the use of students in a first stage of this initiative and in a subsequent, open the possibilities of training and use by the business ecosystem, ie, entrepreneurs and institutions of the municipal government of the region, involved with the promotion, strengthening and development of the productive sector.

Problem Identification

One of the questions with greater weight for what is intended to be developed is what or what type of appropriation of innovation is relevant to strengthen microenterprises in the region? What can be done to support and impact these economic units that make a considerable effort to survive?

Innovation, despite being a word widely used today as a virtue that should be cultivated and encouraged, finds real difficulties in its application. Coupled with this, the MSMEs have the stigma that, as most have difficulty remaining in the market, they change quickly or disappear.

In this sense, it is real that in areas whose economic dynamics are conservative, such as the one that presents the area close to the UPMH, it is essential that the existing economic units be revitalized or at least maintained. That is where participation is not ignored as a factor of change in the institution in question.

¹ Accenture integrates "gamification" into everyday work, disponible online en: <http://careers.accenture.com/us-en/about/news/pages/integrates-gamification-everyday-work.aspx>

The elaboration of this document has among others, the objective of putting into consideration the strategy that has been cooked, as a metaphor about the preparation to undertake in a Mexican university, with certain territorial and regional characteristics to positively impact the MSMEs for that achieve their strengthening and permanence in the business ecosystem through innovation within, as the paradigm and the antecedent for future projects.

It should be noted that prior to this determination, an exploratory study was carried out with diagnostic characteristics carried out in 2016 that served a representative sample of micro-enterprises with a gender perspective, which allowed for first-hand information and which is valuable input for the continuation of the research proposals to be addressed in the future through the intervention of the academic body with which UPMH has the area that deals with the business sector.

Hypotesis

That said, it is established that, as a finding that confirms what a good part of the literature reports, the determination of the profile of the entrepreneur for the topic of innovation is a guide for the actions to be carried out.

In this sense we have the following hypothetical framework:

- With the detection of good practices it is possible to improve the modernization and competitiveness of MSMEs, with the support of the innovation component that is acquired with gamification and with the perspective of the 360 model⁹.

Faced with an unflattering picture of the growth of microenterprises in the region that make up the three municipalities geographically close to the University (Tolcayuca, Villa de Tezontepec and Zapotlán de Juárez), one must act on the premise of detecting good practices to improve modernization and competitiveness, with the support of the innovation component.

Objectives

General objective

Strengthen MSMEs in the region to remain in the market through actions that encourage the use of innovative strategies.

Specific objectives

- Determine the premise of innovation under which action is taken
- Apply the 360° model and the gamification of the serious game with the WUB.

As a theoretical framework

The specialized literature is coincident with what Benito et al. (2012) in the sense that the factors that contribute most to explain innovation in companies with fewer than 10 employees (which for the Mexican case, the number of employees is what determines the size of the company and the sector to which is dedicated) are the internal type, that is, those linked to the profile of the entrepreneur such as training, age and experience and internal strategies led by the entrepreneur, while the variables of the environment, which are so significant for the large company, they do not significantly impact the MSMEs, that is, these "environmental" factors contribute to a lesser extent, unlike those considered as "internal".

In the search of antecedents that confirm that the decisions that are taken have an epistemic body that supports them, it was found the existence of a generic analysis model that has proven to be useful to incorporate the innovation on the part of the companies and that to apply it must recognize that innovation is influenced by a set of variables, same as Hadjimanolis (2000), cited by Benito et al (2012), has integrated into three major categories (Figure 1):

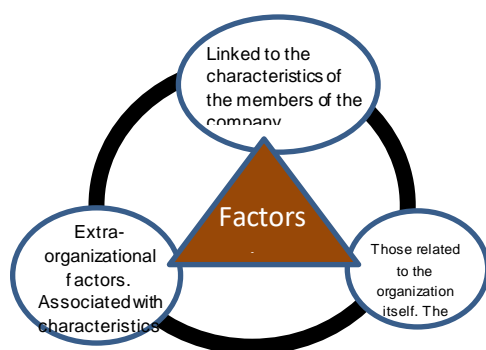


Figure 1 Factors that Influence Companies at the Time of Innovation

Source: Prepared by the author with the ideas of Hadjimanolis (2000)

It is important to take into account these stated factors as they intervene in the model in a decisive manner, in the case of implementing actions that allow innovation and enable replication of the practices in a Mipyme from an educational platform.

Now, of the authors who in the last century were occupied by unraveling the relationships that exist in the participation of universities in the concert of relations with society -as an educational institution- in the face of generating knowledge and participating in research basic scientific and development, it is that in the subject of innovation through these channels, is Rosenberg (1982).

Who determined that before the adjustments in the roles of the economy and politics, not necessarily the R & D is a determining factor sine qua non to encourage technological development and industrial innovation. This idea brought with it a rethinking of the role of universities and even drew attention to the way in which the processes in which knowledge is generated and disseminated by a society that demands it must be addressed.

Years later there is a new approach to the role of universities that, in some way hold a more democratic possibility of establishing links with the productive sectors and being the channel of what is proposed, is produced and applied in the context of the generation of scientific knowledge, through research and development that establish the conditions of greater productivity with an adequate application of technology.

The above briefly describes the dynamics that attend the production of knowledge and the linkage that allows the application and resolution of problems of a particular context, in this case Gibbons et al., In 1994 they contribute their perspective and this phenomenon they denominate as the performance of an "external agent" that may be the participation of the industry, the government or the companies with which the contact has been made, and the support and cooperation that, implicitly entails changes in the institutional operations and performance toward a flexibility that for our case, strengthens the creation of academic bodies with an important load towards research privileging interdiscipline and with a wide recognition towards the university, as an active agent in the diffusion of knowledge and with real links with its environment, such as This is the case of the Polytechnic University of Hidalgo (UPMH), particularly nte in the

Educational Program of Administration and Management of Small and Medium Enterprises.

The perspective of the Model 360°

This model is proposed by Allamand and Monge (2016), is based on a process of co-construction of an innovative solution to one or more social or environmental problems and that is relevant to its adoption because it is part of a diagnosis and is intended to be carried out until its concrete application. The authors offer it as a methodology to companies or interested entities such as the UPMH with the purpose of intervening in the nearby communities, requesting their involvement and active participation in each step. It is called 360 ° because those who participate learn the techniques to develop projects with social impact and can then repeat the sequence with other members of the community; that is, they start a new cycle.

The model consists of three phases that are summarized below, with the following image:

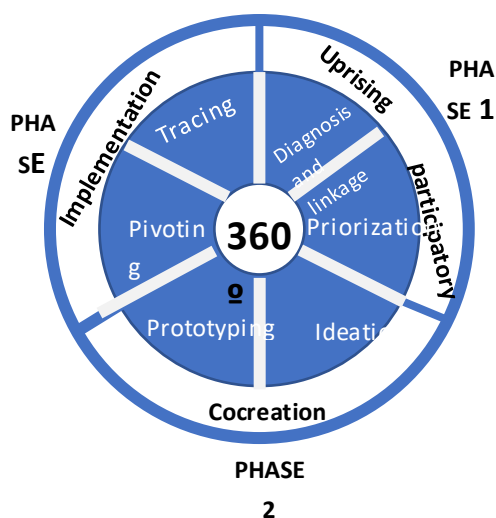


Figure 2 Outline of the 360° Model

Source: Allamand and Monge (2016)

Methodology

The 360° model is used to convert it into the scheme on which the activities to be based are based, adapting to the possibilities and particularities that are found in the institution.

The scheme explains the factors and the actors that will participate. The first phase called Participatory Lifting alludes to an activity where the members of the community and the university, georeferenced the main problems and opportunities of the territory in a real map.

The most important problems are determined and the tools provided by the WakeUpBrain are used, as explained below, as an alternative proposal to the methodology of the original problem tree, however, it is used for the same purpose to determine the causes and effects of the selected problem.

The use of gamification supports the complexity that exists in the determination of the priority of the problems because, according to the authors, "it is difficult to define it and the exercise allows them to identify what is the background of the problem originally proposed and thus establish the necessary modifications for its correct definition" (2016, 83). The results or findings are informed to the interested parties, as well as the suggestions for the work.

The second phase of Co-creation refers to the series of possible solutions to the detected problems and in the same way the tool of the aforementioned gamification is used.

The authors suggest that in this phase the participating teams build a solution through a series of workshops that include tools such as brainstorming, storytelling and the business model canvas that can be built with the versatility of the WakeUpBrain game.

The first solution ideas are identified, which will then be worked on until achieving a concrete project that should incorporate objectives, methodology, stages and a business plan if it were chosen to obtain resources from competitive funds and that the solutions would be expected to be elaborated from horizontal way, that is, by the people involved and not imposed as usual. With this last, we would be invoking one of the guiding principles of the UPMH, self-sustainability. In a sub-section, the "prototype workshop will be held, where each team builds a model of their solution in order to glimpse its execution in reality and receive feedback from the rest of the community" (Allamand and Monge, 2016, 84).

It turns out that the Implementation is the third and final phase, that is, what has been proposed must be put into operation, which will result in co-constructed projects being executed according to the availability of resources.

The authors of the model explain on this point that "this instance is the most complex, a mentor is assigned per team that is guiding the implementation in both technical aspects and soft skills (leadership, team work, motivation, etc.), a period of between two to four months depending on the progress of each initiative".

WakeUpBrain, the serious game used

It is a serious game that tries among many other possibilities, the solution of real problems, that for a Mipyme turns out to be the innovative ludic device that triggers a series of actions that, in sum, strengthen and improve the operations of the companies. The game WakeUpBrain (WUB) is a tool designed to support creative skills development processes and innovation processes in organizations as specified in its portal. The following is specifically found on its website, in relation to its fundamental uses:

- As an ideation tool and methodology for generating high potential ideas for innovation in products, services or processes. In this case, it is used in brainstorming sessions, or applying the CROMAS methodology, among others. It is also a guide for the use of the innovation MACROS methodology that leads from the definition of the framework to the design of prototypes and pilot of innovative concepts.
- As an entertainment tool or training in innovation concepts. In this sense WakeUpBrain a highly entertaining strategy game. It can be played between teams or individuals, who compete to produce the best innovations using different strategies to get the necessary resources and patent the most convenient ideas. If you want to delve into the key elements of the innovation, you can do a subsequent re-feeding session.

During the last 10 years, WakeUpBrain has been the most interesting platform for innovation games and it has worked as a tool for companies that have joined the series of games specifically for innovation, no matter the size of it. There are others such as Design Thinking, Magic Model etc.

The coverage of its application has been mainly in Latin America. Its creator Guillermo Solano of Colombian nationality has designed WakeUpBrain with a team led by him. The first public version of the game was launched in 2005, with the final version that was launched at the ISLAE fair in Glasgow, Scotland in 2009. This instrument is a synthetic game that is operated with a set of 70 large cards designed to be used as: A collection of more than 50 ideation techniques (CROMAS), a guide for innovation processes (MACROS) as well as a thematic table game.

To say of this brand of game, it is reported that more than 5,000 people from 25 different countries have been trained in WakeUpBrain in the last 9 years. The WUB's framework of thought uses three basic components under which its interactivity is based on the people with whom it works: 1) Exciting questions, 2) Ideas first and 3) Expanding. This game is particularly used in a workshop session of 30 to 45 minutes to show how to take advantage of the game methodologies to understand the challenges in other ways, generate really innovative ideas and take them to the next level, is played in groups. It takes a series of psychological aspects where it is encouraged that the participants in the game compete and win various badges (objects, status, etc) and recognition, making the experience exciting.

He has exercised with students in class to resolve conflicts with good results, which encourages him to continue exploring the possibilities that the game has.

The UPMH has been certified in this game obtaining the elements for the experience of the WakeUpBrain, for which a program that serves the entrepreneurs and is the laboratory where with the premise that the game can allow the adoption of practices that strengthen the administrative processes, which can generate internal synergy in companies, as theory and experience suggests.

Results

Having said that, UPMH is in a position to apply the 360° model, which ensures that it is committed to Social Innovation given that said model invokes the mechanisms that can be applied in the concrete.

Innovation, as is known, comes from an idea, preceded by an identification of a problem to be solved where such innovation finds its place and pretends to be the feasible proposal in its application, because it is possible that you can have the best idea, the more finished innovation, but if the mechanisms for its operation and implementation (or socialization) are not found, such innovation is not such.

This participation of the university can be compared to what according to Molas-Gallart et al. (2002), cited by Castro and Vega (2009), can be termed with the "third mission" that encompasses all those activities related to the generation, use, application and exploitation, outside the academic scope, knowledge and other capabilities of those that the universities have.

In particular, the strategy that has been piloted to be a continuous practice in the short term, is training in the use of the WakeUpBrain (WUB) tool, mentioned above.

At the moment the partial results are reported in the application of this strategy as a pilot in a Hidalgo company, which is not in the radius of influence, since it was first tried to see if it worked well for the fulfillment of the objectives that have.

WUB in Mi Cabañita Restaurant ²

This company is one that is considered by the number of employees as a small company. Its main characteristic is the regional and Mexican food with gourmet food tints and it is located in the countryside completely, between the cities of Tulancingo and Pachuca of the State of Hidalgo and led by a young businesswoman, who has bet her investment to offer her culinary skills in addition to being considered a family business, opening its doors 5 years ago.

² <https://www.facebook.com/Mi-Caba%C3%B1ita-178484202305831/>

FOSADO-MARTÍNEZ, Dulce Olivia. Proposal to encourage Innovation in MSMEs, with the appropriation of serious game. Journal- Economic development, technological chance and growth 2017.

This company presents a series of problems for its full development. The response of the diners is acceptance, is very much in demand especially on weekends. This has led to the expansion of its facilities. When identifying that it was necessary to do something to solve the problem, a training for waiters was obtained online. In that quest to improve they contacted each other and asked for the corresponding support.

Hence, it was favorable to use the strategy and model of the WUB, which was carried out on May 18, 2017, on site, that is, at the company's facilities.

It was operated under the following Objective: Integrate the company's collaborators from the different areas to achieve the collective identification of the main ideas through the use of the WUB strategy to solve the problems that prevent a sustained growth of the company.



Figura 3 Eligiendo la tarjeta que represente a la empresa en "Carrera de obstáculos"

Fuente: Dulce Olivia Fosado Mtz.

Development

The effective assistance was of 7 members of the company. It began with the explanation of what it means to work innovation and especially with regard to serious games.

There was talk of "exciting ideas and the WUB method".

The level of studies and experience of the participants was varied, so care was taken that the messages were understood by using a language that used complex concepts.

It began with the presentation using "This card represents me", later the "Mentalist" was used, as part of the games proposed by the WUB. Once the tension was broken, the "Obstacle Course" was played and ideas were identified and the most pressing problems identified were identified..



Figure 4 Discussing in the "Obstacle course"

Source: Dulce Olivia Fosado Mtz.

The second part of the "obstacle course" was used and the problems were prioritized, resulting in COMMUNICATION, the problem identified as the most frequent, that is, there is a lot of interference in the messages arriving correctly and with opportunity to the areas of the ones that make up the process "from the taking of the command to the kitchen and from there to the table.

Once the above, we proceeded to play "Bad Ideas". There some of them were obtained to genius them, mostly "desires" were found, as can be seen in the images.

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Figure 5 Locating the problem
Source: Dulce Olivia Fosado Mtz.

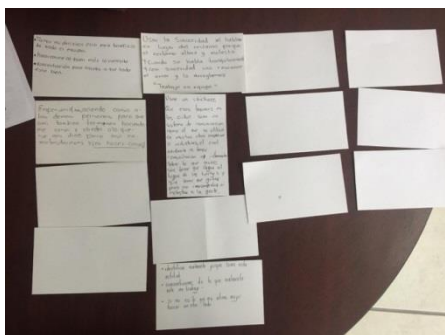


Figure 6 Various solutions to the problem of Communication as the identified problem
Source: Dulce Olivia Fosado Mtz.

Time was the limiting factor, however, there was the motivation to continue exploring with the problems that were identified collectively in successive sessions, given the work dynamics of this company.



Figure 7 Reverse of the location cards of the Communication problem.
Source: Dulce Olivia Fosado Mtz.

The "bad idea" for communication, for this example was to put on taps in the ears, that is, they are asked to imagine the worst of the solutions, which can even be considered as improbable or crazy. When performing the "genius" exercise, the idea was obtained of using a device that makes communication more effective, especially between the areas of greatest conflict such as cooking and service.

It is understood in this case that the "genius" is to find the best solution, that "bad idea". This way of dealing with a problem in a collective way triggers ideas that of first intention would not have been posed for the resolution of a problem, something like what is known as "thinking in reverse".

The important thing is to have the cognitive tools that allow the management of a group that is in permanent contact with the problem to be solved, in the understanding that the characters that participate manage to find unthinkable solutions and of an intrinsic value and without realizing it being a game.

The experience in the company Mi Cabañita, proved to be stimulating. For the people who participated it was evident that they felt comfortable and when asked their opinion, the majority agreed that it was interesting and when reporting the results to the owner, she seriously considered taking into account the proposals that were systematized.

Observations

Perhaps as a self-criticism, it should be noted that the difference between IDEAS and DESIRES among the participants was not clear. This made that, with the enormous potential of the "Bad Ideas", only an idea that could be "genius" was found as part of the process suggested by the WUB. It is considered that a second visit is necessary.

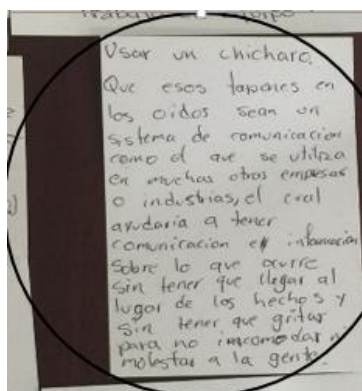


Figure 8 Detail of the proposal to improve the problem identified on Communication

Source: Dulce Olivia Fosado Mtz.

Conclusions

It is a great challenge that the University (UPMH) has to be able to make the conversion of an educational institution only, to one where there is effectively the link with the productive and social sector and that is recognized as a generating institution of change, of better realities and that innovation is not a snack that can be eaten by the one who has more, but that it is seen as something achievable, such as the possibility of remaining in the market with an acceptable profitability and tracing an economic model that does not deal effectively to the concretion of a harmonious and sustainable society.

The use of innovative strategies to capture reality is motivating and as a teaching scheme for new generations to teach innovation, first it must be possible with simple practices.

With the application of the exercise and piloting of the WUB both in the classroom and its use in the business environment has unsuspected possibilities, and that is expected to enable innovation in the processes of capturing the good practices that exist in the business ecosystem.

The use of gamification via the operation of some of the WakeUpBrain games together with the perspective and application guide of the 360° model, turn out to be the innovation that is proposed to be used as a way to create links and bridges with companies that are nearby to the University, and capture the best practices that are operated, however, the pretention, although ambitious, we believe that it is possible to complete it, perfect it and operate it so that later it can be replicated and favor the permanence of the MSMEs throughout the country.

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