
Short-term open innovation hackathons as a method to improve tourism innovation.

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Abstract: This article has as objective the use case study applied by Lopesan Hotel Group, the Hackathon Think in Innovation; whose goal was to promote Open Innovation in the hotel group, providing solutions to the challenges identified by the organization and promoting the creation of an innovative culture within the company. The evaluation results of the participants during two editions (years 2015 and 2016) are analyzed, amounting to a total of 94 surveys. Likewise, the benefits and the reasons why the format have not been continued by the hotel group are exposed. In general, the format has given Lopesan Hotel Group recognition as an innovative brand, generating a rich source of future projects to develop internally or externally.

Keywords: Open innovation, Hackathon, Tourism, Hospitality.

Introduction

The new movement towards the collaboration between organizations and society is patent nowadays. There are many companies from various sectors innovating through different methods and one of them is Open Innovation models. Open innovation, according to Chesbrough, connects internal and external ideas to develop an ecosystem to generate projects and new products and services (Chesbrough, Vanhaverbeke and West 2006). There are several ways to apply Open Innovation and the decision of one format against another depends on the sector of activity and the position adopted by the company regarding

innovation. To list just a few depending on their degree of openness to innovation there are innovation labs, innovation outsourcing and crowdsourcing, among others, in which we highlight the Hackathon format as it is the case analyzed in this article (Laursen and Salter 2006).

The term "Hackathon" integrates the concepts of "hacker" and "marathon", being a methodology that has been extended during the last three decades between companies and organizations of all kinds. Hackathons are also known as "hackfest", "codefest" or "hack day", and their success has been increasing year after year (Mumm 2012).

Initially, the term was used in reference to intensive meetings organized by programmers and computer scientists to collaboratively develop open source software. However, the terminology has come to be used to define events that bring together people with multidisciplinary profiles and who must provide a solution to the proposed challenges in a short period of time (generally 24-48 hours).

Participants, normally registered free of charge, attend the event and meet in multidisciplinary teams to solve company challenges. The challenges are proposed either by themselves, by the company or by non-profit organizations or entities with a marked similar purpose. The participants work in teams and live together for two days (a whole weekend) to solve the challenge raised by the company to obtain a later recognition that rewards their work. The ultimate goal is to carry out projects of possible impact to the company (Briscoe 2014, Munro 2015).

The main methodology supporting Project-Based Learning (Lara & Lockwood, 2016). This manner, participants exercise as a proactive protagonist of its own learning process. In particular, the learning of knowledge has the same value as the acquisition of skills and attitudes, and this is the basic idea, by definition of a hackathon. In particular, the promotion of teamwork is important: knowledge and integration of different professional profiles, developing an inclusive collaborative work (Thomas 2000, Artiles and Wallace 2013).

Events like these are achieving good results for all participants, who learn to collaborate with other professionals under "new and unknown environments". Due to the short frame of time applied to create something new, the participant's concentration level required is high. Therefore, this situation encourages creative thinking and develops the capacity to design new services or products in the tourist industry (Briscoe 2014) .

This article aims to analyze the specific use case applied by Lopesan Hotel Group, the Hackathon Think in Innovation; whose objective was to encourage Open Innovation in the hotel group, by providing solutions to the challenges identified by the staff and promoting the creation of innovative culture inside the company.

This paper comprises ten sections. Following this **introduction**, the **context** where the open innovation process takes place under the management of the company Lopesan Hotel Group is presented. The next section outlines the **contest procedure** "Hackathon Think in Innovation" where the procedure of the company to convene and lead the event is explained. The **methodology** is the next section of this article, where the actions taken to collect the information shown are exposed. The **results** obtained in the surveys carried out are presented below, which are divided into two subsections: Demographic distribution of the participants and Hackathon assessment "Think in Innovation". Following, the **critical points** detected and

analyzed of the open innovation process are explained. Finally, the **conclusions** obtained from the case analysis are collected and the future actions (**future work**) of the investigation are stated. The last sections of the article correspond with **endnotes** and **references**.

Context

Lopesan is a multinational company based in Gran Canaria, more than 40 years old and with a staff of over 4,000 employees. Is the leading Canarian tourism firm in the Islands and one of the top ten in all of Spain, with 16,500 beds, distributed in 22 hotels in Gran Canaria, Fuerteventura, Germany, Austria, and the Dominican Republic, which are managed by its two chains: Lopesan Hotels & Resorts and IFA Hotels¹.

One of the characteristics with which the group is defined is the agreement to user satisfaction and permanent innovation in all sectors of its activity. Its commitment to innovation at all levels of operations has had an impact on the internal development of a R&D+i management system, being the first Spanish hotel chain to achieve certification under standard UNE 166.002. R&D Management².

In accordance with its Mission, Vision and Values, Lopesan opted for the development of idea contests as a method to encourage participation and the generation of innovation, from inside and outside the company and vice versa; among other actions. Think in Innovation was the resulting brand of all this process, which had evolved and changed during the years of its development. Thus, during six editions, the contest itself evolved and innovated in its concept.

During the first editions, Think in Innovation was oriented and focused on the online launch of a series of challenges for the company's employees, who proposed creative and innovative solutions. Already in the third edition (2014), the opportunity / need to include the university community and clients in the ideation process was detected, who participated by contributing with their ideas to the challenges launched from each role / perspective. It is in this year, when the different approaches received began to be detected in the organization as a great contribution. Subsequently and internally, the company decided what solutions would be carried out as an innovation project.

In 2015, Lopesan Hotel Group collaborated with Telefónica in the Hack for Good Canarias event, where its format was identified as the one indicated for the evolution of Think in Innovation: the Hackathon. Likewise, and as a result of the collaboration formalized between the Lopesan Hotel Group and the University of Las Palmas de Gran Canaria through the Lopesan-ULPGC Chair, collaboration was being carried out for the development of the IV Ed. Think in Innovation in this format. It is in this same year when the Hackathon methodology for Think in Innovation was applied, repeating in 2016 with even better results. With this adaptation the aim was:

1. To encourage the channel or channels of receiving innovative ideas in the company.
2. To evolve towards the concept of open innovation by involving other agents participating in the event, such as subject matter experts and University students and graduates.
3. To solve current challenges in the organization.
4. To generate the image of an innovative and young company.

In 2017, and due to the modification of the innovation strategy proposed by the Management of the Lopesan Hotel Group, efforts were focused on obtaining certification under the framework of UNE 166.002: Management of R + D + i.

The Innovation Management Unit developed a comprehensive framework for the management of innovative projects, postponing the Think in Innovation Hackathon to reorganize the internal application processes. However, and to continue fostering a culture of innovation in the company, the development of a specific tourism innovation project was considered, with the participation of a team of graduates and employees related to new technologies. This is how Lopesan implemented a prototype for its hotels with the first humanoid robot that can communicate and interpret human emotions: Pepper.

Finally, in 2018 and after defining the priorities within the company's strategic plan towards internationalization and expansion, the Innovation Unit was dissolved, not continuing with the open innovation model developed until then.

Contest procedure.

Lopesan Hotel Group, according to the company's strategic challenges, publishes a series of challenges for which it needs or demands innovative solutions. In a first phase, the challenges are launched to both Group customers and employees, who contribute ideas to solve these challenges.

The best customer idea is awarded, being valued by the company's corporate directors and subsequently developed internally by the R + D + i Department.

Ideas submitted by employees are equally valued by corporate directors, who decide the best (10-15) for each edition. These ideas are those that will later be taken to the Hackathon, where employees, students and higher graduates will join together to create multidisciplinary teams that develop the concept until it becomes a concrete project.

Through this structure, cooperation between different agents of society is fostered to a greater extent; having, on the one hand, the experience and know-how of employees and on the other hand the innovation and growth spirit of students and graduates without prior knowledge of operations of the company. Thanks to this procedure, the results obtained are richer and more realistic when it comes to applying it internally, the synergies generated are highly positive.

After 48 hours of hard work made up of training pills, mentoring of professionals external and internal to the company, and a lot of teamwork (between 3 and 7 people), the projects are evaluated by the jury (company directors and outside mentors). After a brief speech by each team, the projects are evaluated based on the following criteria:

- 85% of the score:
 - New product, service or process created.
 - Maturity of the idea during the Hackathon.
 - Competitive advantages offered to the company.
 - Financial viability.
- 15% of the score will be obtained from the number of impacts received in the application, through the “Like” option in the event on the official THINK IN INNOVATION page, and the social networks associated with it.

Lastly, the best projects developed and winners of the contest are launched within the organization through its R & D & i Management Procedure, which includes the staff who participated during the contest. In this way, the entire process generated during the event has a real impact on the internal processes of the company and in the surrounding environment. Thanks to this, Lopesan achieves to:

1. Create an innovation project that improves both the customer and society experience
2. Involve employees in the process of improvement
3. Generate opportunities for the University community.
4. Report strategic benefits and economics to the company.

After defining the Think in Innovation procedure, it is necessary to demonstrate with data the statements made during the previous sections.

Methodology

An analysis is made of the evolution of the open innovative process at the Lopesan Hotel Group internally. During the editions where the contest was held as Hackathon, data was taken from the participants to assess participation and the degree of compliance with the system. In the first edition (2015), a total of 45 people participated, while in the second edition (2016), the total number of participants reached 49. Quotas were set by the organization depending on the infrastructure available to congregate all participants.

Likewise, an internal evaluation was carried out with the management of the Lopesan Hotel Group, to determine, on the one hand, the challenges to pose based on their annual SWOT analysis; and on the other hand, the projects development after determining the winners in each edition.

Results

By analyzing the data obtained from the assessment of the participants in both editions (2015-2016) with 100% response rate, several conclusions could be extracted that support the Hackathon format as an ideal model for promoting innovation in tourism organizations; as well as understand the evolution that Think in Innovation took from one edition to another. Likewise, the winning projects achieved during the event were subsequently developed and applied internally in the company through prototypes.

Demographic distribution of the participants

Making a first analysis of the participants in both editions can be identified different trends and patterns that remain:

- In relation to **Figure 1. Age Range**, it is observed that the bulk of participants is between the ages of 20 and 30, which is quite logical when promoting participation in the university community. Likewise, and analyzing the evolution from one year to the other, there is a growth trend towards the participation of people with a higher age range, which is explained by several factors:
 - The ratio of repetitive participants in 2016 was quite high, which means that in many cases there is a change in the range age due to repetitive participants aging.
 - In the following variable, the number of working participants of the Lopesan

Hotel Group in the contest increases strongly, thereby producing a variation between the participants and their age ranges.

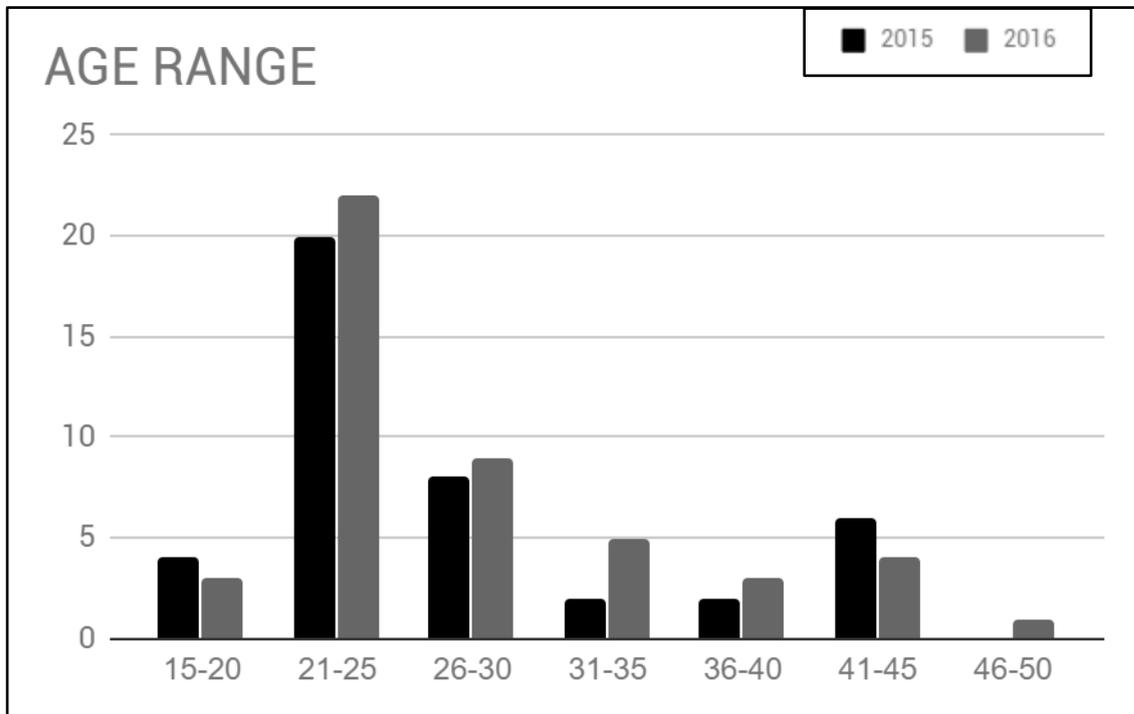


Figure 1. Age Range

Age range by the number of participants in the two editions, 2015 and 2016.

- Regarding the occupation of the participants, **Figure 2. Occupation**, the increase in workers participation in Lopesan Hotel Group is clearly identified with respect to the previous year, slightly decreasing the participation of University students. This is due to the types of challenges launched in both annuities:
 - In 2015, the challenges were more generic and focused on general innovation in tourism companies.
 - In 2016, the Lopesan Hotel Group decided to further specify the challenges in relation to the Group's casuistry and problems, dealing with challenges that were strategic and purely process-oriented.

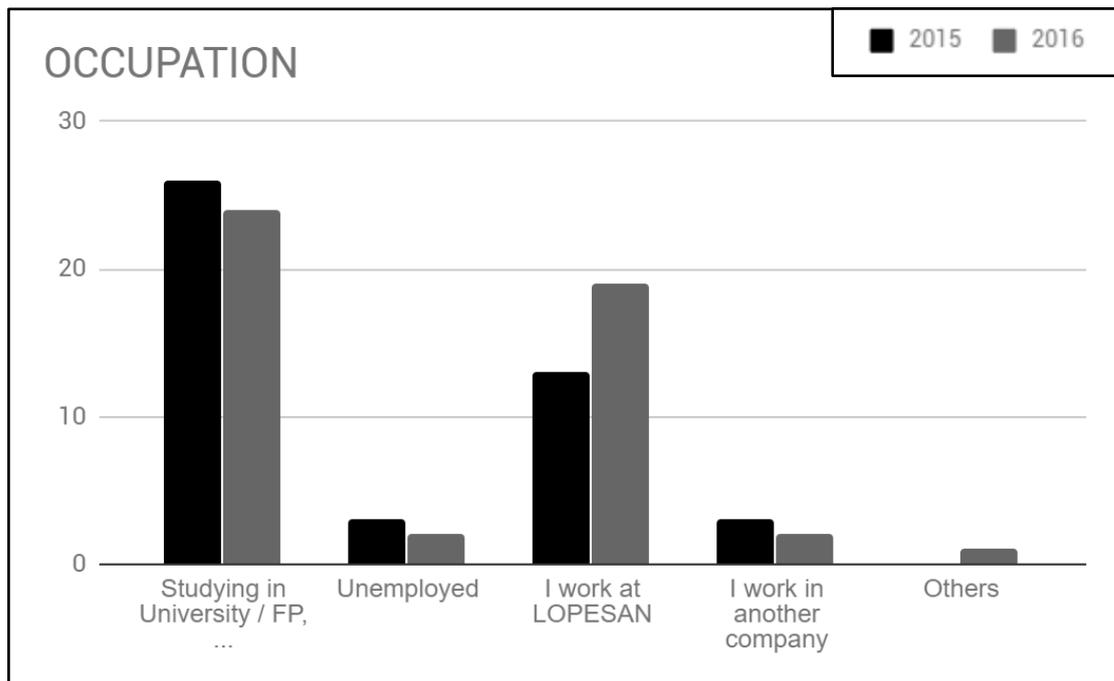


Figure 2. Occupation

Occupancy segment of the participants in the two editions, 2015 and 2016.

- Finally, and in relation to the data obtained for the training area of the participants **Figure 3. Specialization** is clearly stated: the Social and Legal Sciences. The reasons are obvious:
 - As previously mentioned, when the challenge typology was modified the profile of the participants also varied, with the technical profiles (Engineering and Architecture) decreasing and the Administration and Management profiles increasing.
 - In addition, by increasing the participation of employees in the contest and in the case of a company with an obviously tourist character, the profiles of the employees were added generally being included in the prominent range.

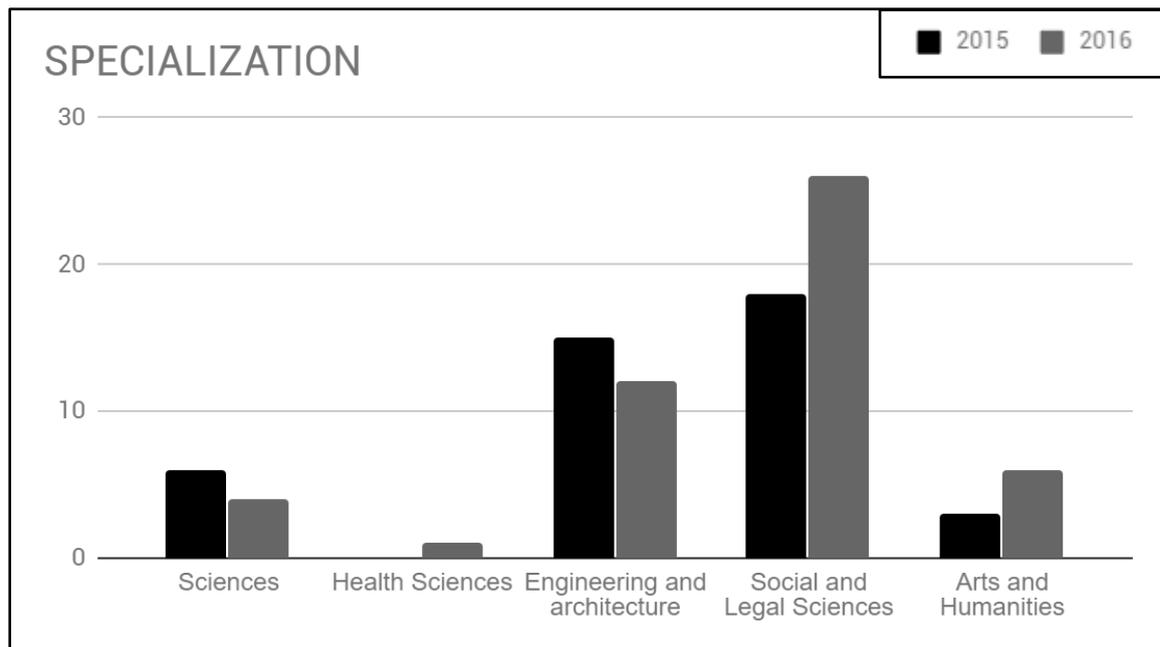


Figure 3. Specialization

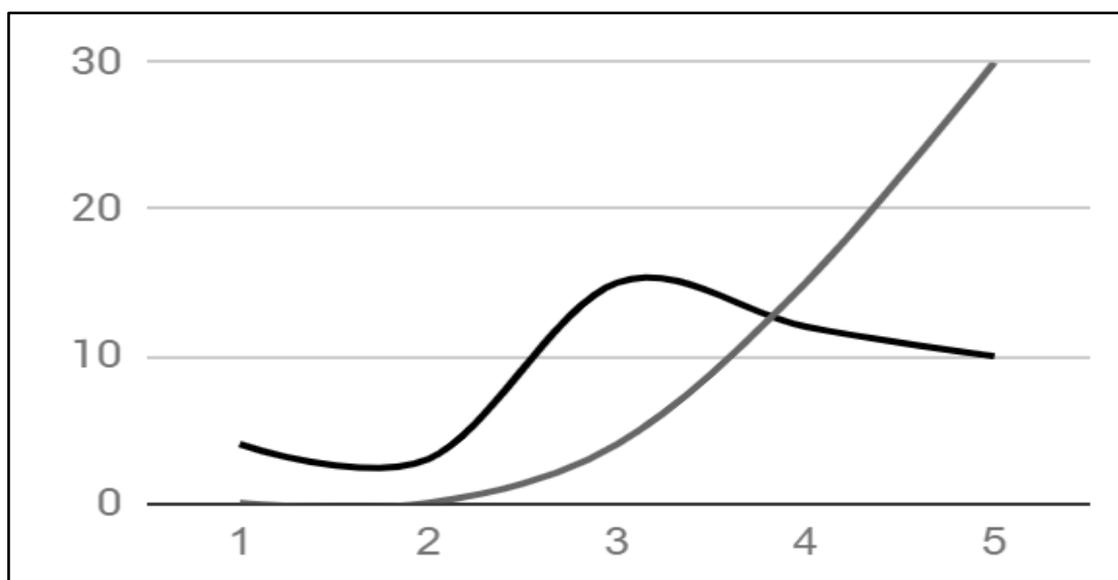
Areas of training specialization of the participants for the two editions, 2015 and 2016.

Hackathon assessment "Think in Innovation"

After all the work carried out during the event, it is worth asking the strengths and weaknesses of the Hackathon typology and how it is valued by the participants. The results collected for the questions asked on this topic are as follows:

1. *What do you think of the Hackathon model as a way to find specialized and talented people? (1 Slightly agree, 5 Strongly agree)*

Figure 4. Net working Participants' response to the ques



tion: What do you think of the Hackathon model as a means of finding specialized and talented people? (1 Slightly agree, 5 Strongly agree)

A clear improvement is seen in terms of the perception of the participants of the Hackathon format as a means to find specialized and talented people from 2016 with respect to 2015. This variable is explained by the logical evolution that an event may undergo when consolidating at the level regional and attracting more participants than in their first year and with greater motivation and training. Likewise, in 2016 improvements were introduced during the competition creating a specific category for companies where renowned professionals who participated during the conference were attracted. This may have influenced the perception of the participants, who had a greater chance to interact and meet experts in different subjects.

2. *Do you think Hackathons are the best way to find solutions to challenges? (1 Slightly agree, 5 Strongly agree)*

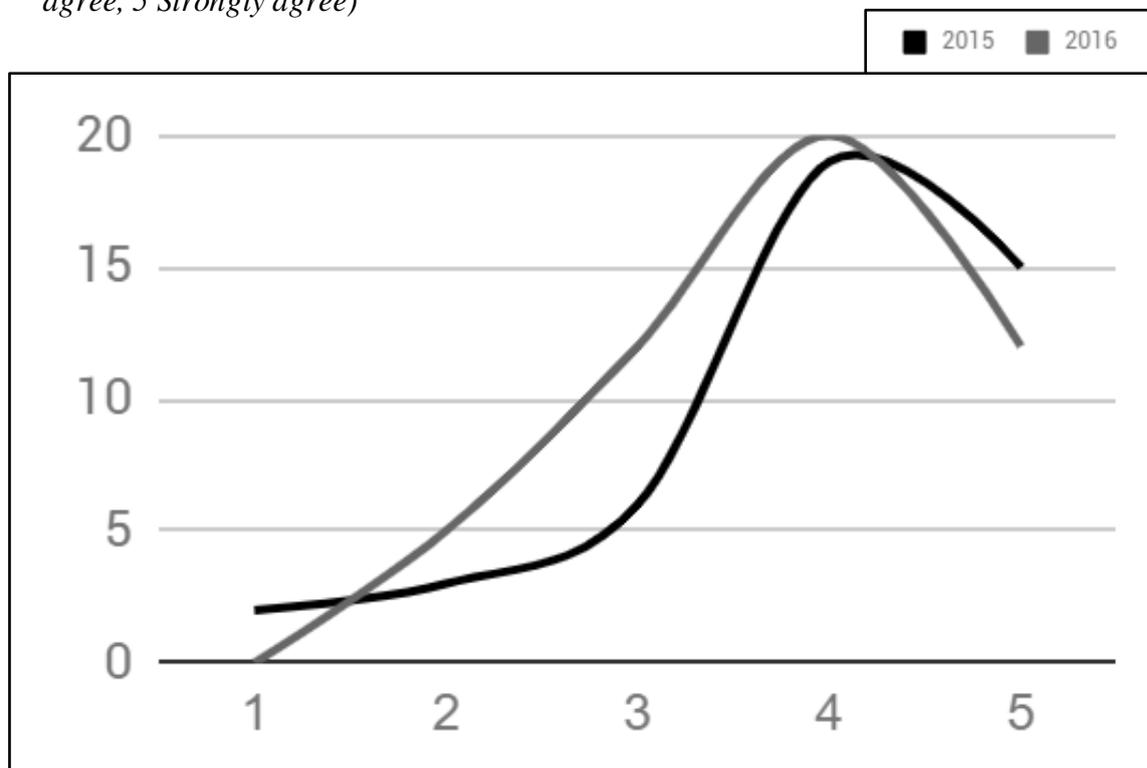


Figure 5. Hackathon format.

Participants' response to the question: Do you think Hackathons are the best way to find solutions to challenges? (1 Slightly agree, 5 Strongly agree)

Regarding the Hackathon format as a means to solve challenges, the participants coincide in both annuities significantly, having a more positive valuation in 2016 in general terms.

3. *Through a Hackathon you can develop useful attitudes, knowledge and skills for my professional future (1 Little Agree, 5 Strongly agree)*

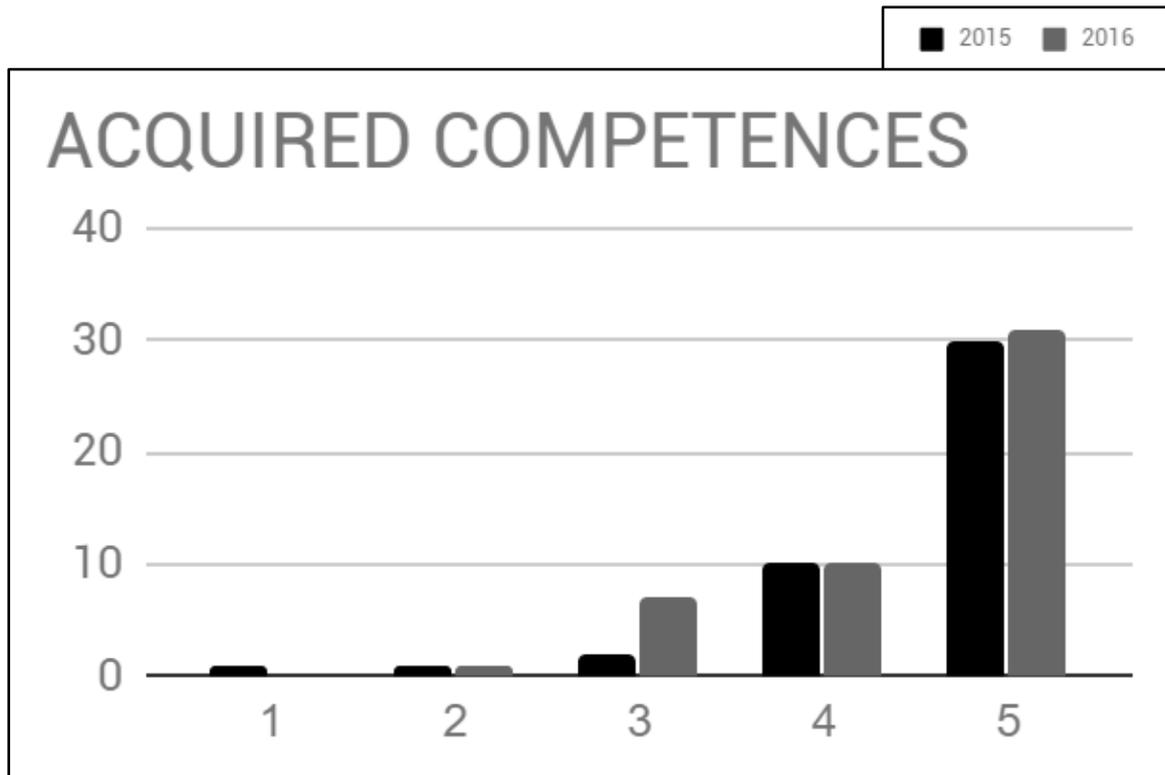


Figure 6. Acquired competences

Participants' answer to the question: Through a Hackathon, useful attitudes, knowledge and skills can be developed for my professional future (1 Little Agree, 5 Strongly agree)

Finally, the results obtained from the evaluation of the participants are analyzed, finding that a large majority views the event positively as a means of acquiring attitudes and knowledge that they can apply in their professional / academic future.

After analyzing the results obtained in the questionnaires, it is necessary to know the internal events that led to the closure of the Open Innovation project at Lopesan Hotel Group.

Critical points of the process

The reason for not continuing the event in this format is due to several factors and which are decisive when it comes to replicating the model. It is necessary taking this into account in the risk analysis to future editions.

Initially, Think in Innovation was created with the aim of generating innovative ideas that could be applied in the company. The challenges were aligned with the company's strategy. However, in the first editions, the lack of definition of the post-contest meant that the winning projects were not fully applied in the company, except for some prototypes.

When Think in Innovation is defined in Hackathon format, a post-contest follow-up was established through the Lopesan Hotel Group's R&D Management Unit. The objective was to continue with the projects, establishing a project leader (Lopesan Hotel Group employee) who had to develop their idea towards something tangible and economically viable.

However, and despite the existence of a project support unit, there was no remuneration framework for its development, and time should be dedicated outside the workday from leaders responsible for projects. This meant a clear setback to the progress of the projects, which, despite the motivation of the staff, over time came to be considered as a work overload.

Likewise, a clear commitment to the system promoted by the company management is essential. It must be established as a recurring process and defined in the strategic planning and within the internal procedures of the company to try to stop the resistance to change. This situation has also been reflected in the Lopesan Hotel Group, which finally did not continue the format due to, among other reasons:

1. The redirection of economic funds towards expansion and internationalization projects of the company as priority and strategic.
2. The non-obtaining of tangible (economic) results of the projects after the development of the event.
3. Rejection of part of the work team due to the higher workload and lack of recognition of it.
4. The lack of unity in the management team to assume the process as a generator of benefits (resistance to change).
5. The low academic training of the participants belonging to the company made the ideas difficult to lead internally.
6. The dissolution of the Innovation Unit in the company.

Conclusions

Hackathon model speeds up the move towards Open Innovation in companies, as many participants in and out of the same meet together to figure out and do research about new solutions for the business (de Cubierta and Dios 2015, Lara and Lockwood 2016). With the results obtained and analyzed in the article the conclusions are:

1. The model favors integration and multidisciplinary cooperation, generating synergies that have an impact on the quality of the work presented.
2. The intensity of Hackathon, condensing in 48 hours the developments of a project, promotes concentration and the ability to manage projects in early stages.
3. It is an efficient way to identify people with talent and specialized in various areas, even inside the company.
4. The objectives must be aligned with the strategic planning of the company.
5. There must be a clear commitment to the General Management in the innovative process to ensure its success and avoid resistance to change.
6. To ensure repetition of the format, companies should establish a clear project procedure to follow after the development of the Hackathon. It is possible to achieve greater benefits from the results initially obtained through a recognition system (whether or not monetary).

Finally, the Hackathon format is an ideal means for fostering an innovative culture and collaborative environment among different agents involved in the process. For Lopesan Hotel Group and others companies it had been a positive experience who has positioned it as an

innovative company, channelling business innovation strategies towards an open innovation model with clear positive results (Faché 2000, Munro 2015, Calco and Veeck 2015, Marques and Borba 2017).

Future work

Thanks to the detailed analysis of the Hackathon Think in Innovation, its format can be extrapolated to other tourist companies, knowing the limitations found, a revision and structuring of the model could be proposed, adapted to each company.

Precisely, the reasons why the Lopesan Hotel Group ceases the project can be considered factors to be analyzed in depth and taken into account for future experiences. The need to study in greater detail the economic effect of the implementation of innovation is patent. It would be interesting and important to extrapolate in economic terms the benefits obtained with the application of this format when consolidating the projects born in it.

Analysis of other application cases could clarify whether the Hackathon as an open innovation format has guaranteed benefits for the companies that propose it, as well as for the participants. It cannot be 100% concluded that it is an ideal format since the sample of analysis of cases carried out in tourism is neither representative nor high (few cases of application).

Endnotes

1. For more information about the hotel chain: <https://www.lopesan.com/en/>
2. Lopesan, the first hotel chain recognized with the R & D + i management https://www.eldiario.es/canariasahora/economia/Lopesan-primera-hotelera-reconocida-Idi_0_721278823.html

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