WHEN AGILITY MEETS OPEN INNOVATION: TWO APPROACHES TO MANAGE INBOUND PROJECTS

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ABSTRACT

Open Innovation is a leading paradigm in the current landscape, and scholars have been highly focused on defining the characteristics and capabilities that firms need to implement them successfully. This research aims to understand how organizations may implement inbound OI projects. Relying on a multiple case study approach and based on primary and secondary sources, this research highlights two main approaches: Team-Centered and Individual-Centered. The two approaches are discussed according to previous studies, highlighting how the first one is particularly coherent with previous research on Open Innovation, while the second one offers great insights from an agile Project Management perspective. In particular, this research suggests how Open Innovation literature can be enriched by considering the recent advancements in the agile literature, valuing the individual and its autonomy to embrace external ideas from an OI perspective.

Keywords*: open innovation; inbound; education; agile*

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1. INTRODUCTION

Innovation implies both idea generation and idea implementation (de Jong and Den Hartog, 2007). Over the last decades, scholars start considering several ways to improve the first phase, from Design Thinking (Brown, 2009) - as an approach to foster new ideas within the company - to Open Innovation (Chesbrough, 2003), enlarging the boundaries to foster innovation leveraging flows of knowledge crossing organizational boundaries. The spread of digital technologies facilitates the diffusion of these approaches, providing companies access to a huge array of possibilities - even for free - through several platforms (e.g., Innocentive, Designboom).

Notwithstanding, in a world awash of ideas, the generation phase is becoming easier, and it is spreading outside the company's boundaries (Verganti, 2017). In this vein, ideas are becoming a commodity to which every organization can have access. However, the competition is increasing and speeding up: many disruptive companies are approaching the market and challenging existing ones (Downes and Nunes, 2014). In this environment, the capability to work and to implement external ideas and stimuli takes even greater importance.

Scholars so far focused on the characteristics and capabilities that firms need to implement an inbound strategy successfully (e.g., Lichtenthaler & Lichtenthaler, 2009; Mortara et al., 2009; Chiaroni et al., 2010; Parida et al., 2012). However, it seems that there is still a lack of up to date research in the analysis on how organizations may implement those innovations (Huizingh, 2010; Chiaroni et al., 2010; West & Bogers, 2014).

Even if specific techniques and strategies have been analyzed in the literature, the overall implementation phase is still often considered as a "trial and error" process, rather than a professionally managed process (Huizingh, 2011). Indeed, literature is still lacking an in-depth analysis of how Inbound Open Innovation may change or influence organizational processes (Chiaroni et al., 2010). The knowledge of the implementation process of Open Innovation approaches is still mostly unexplored (Huizingh, 2010; Chiaroni et al., 2010; West and Bogers, 2014). These studies mainly focus on asset-intensive industries, where developing Inbound Open Innovation usually means asking the R&D function – which works to foster innovation – to search,

accept and eventually embody external ideas or technologies to foster the innovation process. In this perspective, scholars tried to suggest a structured approach to manage Inbound OI project, going through sequential and specific phases to prepare the company, to let it change and finally institutionalize the change (e.g., Chiaroni et al., 2010).

Nevertheless, other possibilities have not been considered so far in the literature, even though the current scenario is more complex. Open Innovation became a more comprehensive model, welcoming innovation in all the areas of the company, even by people who are not there to foster innovation (such as other employees). Are there other ways to manage the implementation of OI projects? For example, the business literature is taking more and more into consideration the diffusion of lean and agile methods (e.g., Cooper, 2014; Knapp et al., 2016). Can they be useful to implement innovation opportunities coming from the outside?

This research aims to exploit better how organizations can approach external opportunities and bring them into their boundaries. In particular, it focuses on a peculiar empirical setting - the education field - considering universities that understood the potentialities of digital technologies and leveraged platforms that provide MOOCs to foster innovation. The relevance of this field is two-fold, on the one hand it seems to be one of the industries with higher barriers to disruption, having non-profit participants in the field and being highly regulated, which lead to fewer incentives to adopt technological opportunities coming from the outside (Downes and Nunes, 2014), on the other hand external innovators (e.g., Coursera, eDX, Khan Academy, Duolingo, Babel) are proposing several innovations that may be beneficial also from the incumbents' perspective.

2. THEORETICAL BACKGROUND AND RESEARCH OBJECTIVES

The theoretical background of this research is based on the Open Innovation paradigm, focusing in particular on the strategies that can enhance the implementation of an OI project. Therefore, this section is divided into two main sections: first, an overview of this innovation paradigm and then an overview of the implementation strategies and best practices.

2.1 OPEN INNOVATION

The open innovation (OI) paradigm suggests a strategy to enlarge the innovation sources (e.g., ideas, knowledge, opportunities) and to improve the ability to exploit them. OI is defined as a distributed innovation process that leverages the flow of knowledge crossing company boundaries (Chesbrough & Bogers, 2014).

Scholar focused a lot on the impact and the peculiarities of this innovation strategy (e.g., Chesbrough, 2003; Chesbrough et al., 2014; Randhawa et al., 2016). OI paradigm enriches the traditional innovation funnel by removing the traditional barrier: the organizational boundaries, which become permeable rather than closed. Ideas, technologies, and solutions from external environments may be incorporated within the funnel, and he developed innovations may be exploited even outside the company. In terms of processes, three main categories can be found: outbound, inbound and coupled processes - mixing the previous two (Chesbrough & Crowther, 2006; Enkel et al., 2009, West & Bogers, 2014).

In the first one, outbound OI, or inside-out process, the company canalizes its innovations into external markets or organizations that better suit their diffusion and exploitation (Lichtenthaler & Ernst, 2007). The aim is to rapidly deliver the innovation, through for examples selling IP, out-licensing, forming alliances, and creating spin-offs (Gassmann & Enkel, 2004). In the inbound, or outside-in, process the organization enriches its knowledge through external stimuli by monitoring the external environment, full of useful ideas, technologies, and solutions (Laursen & Salter, 2006; Lettl et al., 2006; Piller & Walcher, 2006, West & Bogers, 2014).

The Inbound OI can lead to significant value through new product development as suggested by the often-quoted P&G case (Chesbrough, 2006; Dodgson et al., 2006; Huston & Sakkab, 2006). With this perspective, each company can leverage several sources of external knowledge to find better solutions (Laursen & Salter, 2004). Organizations should increase their networking activities and the use of intellectual property from other organizations (Parida et al., 2012). Therefore, they should invest in searching and evaluating external ideas in order to be able to buy or insource external knowledge (Von Zedtwitz & Gassmann, 2002; Gassmann & Enkel, 2004).

Indeed, in order to generate better and more profitable products, companies can benefit from outside creativity by relying on synergies between both their internal processes and external stimuli, increasing the innovation capability. In this perspective, absorptive capacity can be useful (Cohen & Levinthal, 1990; Lichtenthaler & Lichtenthaler, 2009).

Moreover, the two directions of OI flows can be connected in a coupled process. Bringing together outbound and inbound processes, organizations need to develop relational capabilities to build and manage relationships with external partners in order to develop strategic alliances (Gassmann & Enkel, 2004). In other words, coupled practices are linked with the participation in cluster and innovation networks and are considered to have the highest impact on firm performance (Oltra et al., 2018) and with the radicalness of the resulting products (Greco et al., 2016).

Empirical research seems to suggest that different degrees of openness exist (Laursen & Salter, 2006), but there are main issues that companies face in order to open their boundaries effectively. On the one hand, they have to find the right partners to work with and engage them. Furthermore, they have to jointly develop the project in order to develop new products with them, and engaging the right partners is also crucial. Several sources of external knowledge are found in the empirical literature. Users, suppliers, and competitors are the main sources of inbound OI (e.g., Trabucchi et al., 2018). To activate the collaboration, through the right incentives, is critical and several authors focused on mechanisms to motivate external sources (e.g., Füller et al., 2008, Pellizzoni et al., 2015).

2.2 IMPLEMENTING OI PROJECTS

Moving our attention to the implementation of OI initiatives, researchers aimed to understand the main challenges and critical success factors (Gassmann et al., 2010; Kovács et al., 2015), such as the organizational forms (Bianchi et al., 2011) or the timing of implementation (Mortara and Minshall, 2011). Building on them, Subtil De Oliveira and colleagues (2018) highlight six main categories of critical factors, namely: Leadership, Internal innovation capability, Network and relationships, Strategy, Technology management, and Culture.

The six factors can be found in previous research in various ways.

Leadership

The first critical factor is related to the social and human capital, especially and the operational level (e.g., Wynarczyk, 2013). Inbound OI is extremely complex and uncertain, and the implementation of the project management practices can help significantly (Salter et al., 2014). Practices such as setting clear goals, formalizing plans, and milestones help to successfully manage inbound OI project (Lakemondet al., 2016). Similarly, the definition of a reference figure allows to promote and to support the innovation and guides the team toward the innovation process is often cited as a key practice (Chesbrough & Crowther, 2006; Chiaroni et al., 2011).

Internal Innovation Capability

The second factor is related to the structure and resources that can effectively identify and implement an OI project. Previous researches suggest the usage of teams with a strong technical background coupled with team members that have an in-depth knowledge of the firm to include both the perspectives (Mortara et al., 2009). Indeed, in order to assimilate and co-develop products with external actors, organizations may require competencies in their expertise areas (Mowery et al., 1996)

Network and Relationships

The third factor refers to the capability to build the right external relationships. In this perspective, the concept of absorptive capacity is particularly relevant. It can be pursued both collaborating with external partners, such as universities or research centers (Chesbrough, 2003; Bishop et al., 2011), as well as insourcing external knowledge and capabilities by, for example, hiring people with specific characteristics (Zahra & George, 2002).

Strategy

Strategy refers to the alignment between the firm's overall goals and OI practices. Indeed, atop-down approach has been suggested as a key success factor to implement inbound OI projects (Chesbrough & Crowther, 2006). The top management can strategically promote the transition towards an OI approach aligning the objectives of business growth with the desire to look outside its boundaries for innovation (Van der Meer, 2007; Chiaroniet al., 2010, 2011).

Technology Management

The technology management factor refers to the ability to scout technological competencies and leverage them (Ades et al., 2013), in particular it is related with the ability to adequately asses the costs of working with a new technology and to assess the internal technology maturity (e.g. Christensen et al., 2005; Dittrich and Duysters, 2007; Faems et al., 2010).

Culture

The last factor refers to the overall organizational culture in terms of innovation, promoting experimentation, and risk tolerance (Mortara et al., 2009). This is also related to motivation and reward mechanisms (e.g., Parida et al., 2014; Pellizzoni et al., 2015).

These critical success factors, combined with previous studies that highlight the critical role of project management practices in the first phases of the implementation of OI activities (Lakemond et al., 2016), seems to suggest a structured approach to the implementation of OI projects.
Nevertheless, moving away from the classic Open Innovation literature, the business literature is recently pointing out how more flexible approaches may have a significant impact on the effectiveness of project implementation even outside the traditional structured approached (e.g., Cooper, 2014). The literature of agile methods applied outside of the software industry seems to suggest that less structured approaches may be useful to start faster the implementation of an innovation project, without building the overall structure around it (Sommer et al., 2015; Cooper and Sommer, 2016). In the same perspective, innovation studies tend to highlight the critical role of intrapreneurship, as the entrepreneurial attitude of single employees (e.g., De Massis et al., 2016).

Inbound Open Innovation project represents an interesting object of study from an implementation perspective. Indeed, outbound projects are conceived within the company boundaries and leave it to reach to more fitting or new markets (Chesbrough, 2003), but initially, they can rely on the innovation structure which is within the company. Considering inbound projects, we cannot claim the same. Ideas or opportunities are coming from the outside, and the firm needs to understand how to approach it to start implementing it. This research aims to dig in

the implementation phase to explore the perceived "trial and error" process which seems to be shared in approaching inbound open innovations (Huizingh, 2011), aiming to understand if the structured approach previously suggests (Chiaroni et al. 2010) is the only one, or if organizations are starting to leverage on more agile approaches for Inbound OI implementation. Therefore, this research aims to answer the following research questions: How can organizations approach external opportunities and implement Inbound Open Innovation Projects?

3. RESEARCH DESIGN

This article is based on a multiple case study, developed within the education field, which focus on that implemented inbound OI projects to adopt Massively Online Open Courses (MOOCs).

As suggested by Ospina-Delgado and Zorio-Grima (2016), the digital revolution opens new opportunities and challenges to the higher education institution, and MOOCs are one of the answers that they proposed. These new educational tools are the further step from traditional free open education (Weller et al., 2013; Ospina-Delgado and Zorio-Grima 2016) and some authors suggest that they can be the disruption of traditional academic culture altogether (Morris and Stommel, 2014).

MOOCs have received a great deal of attention from the media (Bulfin et al., 2014; Kovanović et al., 2015), entrepreneurial vendors, and education professionals. The development of MOOCs is rooted within the ideals of openness in education, that knowledge should be shared freely, and the desire to learn should be met without demographic, economic, and geographical constraints (Yuan and Powell, 2013). Being available to everyone with an internet connection, MOOCs have no physical and geographical restrictions and can be delivered to a higher number of students. Moreover, they represent an opportunity to support teaching innovation and to promote the university brand (Ospina-Delgado and Zorio-Grima 2016).

Universities are often considered as a source of Inbound Open Innovation due to their capability to build knowledge and innovations (e.g., Chesbrough, 2003; Perkmann and Walsh, 2007). In the case of the MOOC's, the perspective is the opposite. In order to build and manage these courses,

universities leverage the knowledge of external partners. In this vein, MOOCs can be considered a case of Inbound Open Innovation since universities leverage an external opportunity to offer an innovative service to their students or eventually also to new ones, coherently with the traditional view on Open Innovation offered by Chesbrough (2003).

This empirical setting represents an interesting chance to answer to our research question since projects with the same goal (i.e., creating a MOOC to be distributed through external platforms) can be easily compared between different universities. Moreover, the replication of the cases in different universities lets emerge other perspectives: first, the chance to take into consideration the differences among the organizations involved in the study (e.g. dimensions, governance) and second, to consider the success of the project and the implementation of other similar projects after the pilot (i.e., the creation of other courses after the first one).

3.1 SAMPLING

Among the different providers of MOOCs (e.g., edX, Coursera, Khan Academy, Udacity) Coursera has been selected, since it represents one of the major players in the field, with more than 140 universities on board in 28 countries offering more than 1800 online courses.

The empirical research was conducted by following an inductive approach and using the case studies as inspiration for new ideas (Siggelkow, 2007). The study is based on empirical research developed through six case studies based on primary sources (Eisenhardt, 1989; Yin, 2013). In order to select the sample, we applied a two steps process based on convenience sampling. In the first step, the two Italian universities working on Coursera (in May 2016) have been involved. The evidence emerged from this first analyses let emerge two different answers to our research questions, suggesting the existence of two main alternatives. In order to validate the preliminary findings, the study continues into the second step. The attention moved to European universities, searching for other organizations to be inserted in our convenience sample to test the initial results further. We contacted, by email and social networks, all the European universities working on Coursera (30 in May 2016), leverage on the Financial Times ranking. We finally included four more cases (in France, Sweden, Denmark) to the analysis in order to have a heterogeneous sample.

As reported in Table 1, the final sample is composed of six universities. In particular, the second step involved both private and public universities and both large and small organizations, as well as focused and generalist universities, to have the same variety of organizations also in the additional cases. Having six cases that represent a good heterogeneity in terms of types of universities, and having cases that confirm and expand the initial findings in the seconds step, the sample has been considered suitable. The chance to rely on a replication logic that let emerges the two models from different cases has been considered a useful measure in terms of external validity (Yin, 2013).

	University A	**University B**	**University C**	**University D**	**University E**	**University F**
Private/ Public	Public	Private	Public	Public	Public	Private
Number of students	100000	13200	41000	22800	10600	5000
Number of professors	3500	1600	800	1547	160 ca	142
Faculties	11	2	8	1	0	0
Departments	63	8	61	15	24	8

Table 1 - Sampling

3.2 DATA GATHERING

A semi-structured interview protocol has been designed, aiming to follow the respondent flow (Bryman and Bell, 2015; Yin, 2013). The interviews, carried out between September 2016 and February 2017, began with a request to provide an overall description of the project, focusing in particular on the triggers that let it starts, on the strategic goals and motivations behind it, moving to an in-depth description of the implementation phase and closing with a summary of the results and possible follow-up projects. The interviews lasted from 55 to 120 minutes each, and they have been recorded and transcribed.

The first sample (case A and B) has been developed relying on a multi-respondent approach, involving the main players involved in the project (e.g. the professors and/or the people in charge for the project) and leading to a total of five interviews (two regarding University A and three regarding University B). The remaining four cases, as previously mentioned, have been developed to validate the results of the first two – that provided completely different insights – and to verify the existence of alternative approaches to the ones emerged. Therefore, they have been developed based on a single respondent for each case, involving the resource in charge of the project (Table 2).

University	**# of interviews**	**Role of the respondents**
University A	2	Researcher
		Professor and Project Manager of MOOCs Project
University B	3	Professor
		Professor
		Project Manager of MOOCs Project
University C	1	Project Manager of MOOCs Project
University D	1	Project Manager of MOOCs Project
University E	1	E-Learning Internal Consultant
University F	1	Responsible of Innovation

Table 2 - Interviews

Moreover, secondary sources have been gathered both before and after the interviews. University online/offline ranking and Coursera community courses' rating, ranking, and comments have been used to gather information on the perceived quality of each university before the interview. From the Coursera website, additional data on the several courses (e.g., number of editions, languages, name of professors, years) were collected. Comparing this data and the university website and social network pages, we drew the history of Coursera and University relationship and the university's MOOCs in general. Besides, we screened MOOC professors' webpages (professional and personal) searching for information on their propensity for innovation and their involvement on other innovative programs.

After the interviews, the gathered data were examined again to assess the impact of the project (leveraging, in particular, the platform itself, searching for users' comments on the courses and the number of enrolled students).

3.3 DATA ANALYSIS

The process of data analysis consisted of three main phases: coding, comparative analysis between cases, and finally, the identification of similarities and differences. First, the analysis of all the gathered data and transcribed interviews have been done through a structured coding process (Corbin and Strauss, 2008; Saldaña, 2015). We relied on the research question to identify categories and codes related to the main aspects of the analysis based on the literature. In particular, nine first-level codes emerged (Project goals, Project trigger, Project Structure, Roles in the project team, Faculty selection, Professors' role, Professors' incentives, Technical facilities, Outcomes) being informed by the literature review (Subtil De Oliveira et al., 2018). The first level codes have been re-labeled accosting to the specificities of the empirical setting (for example the "Project goals" are linked with the critical success factor "Strategy", while "Faculty selection" is informed by the factor "Leadership") complexity and have been partially adapted to the education setting).

Due to the lack of multiple sources of evidence (having secondary sources that mainly reinforce internal and external validity), the data analysis aimed to establish chains of evidence based on the gathered data in order to reinforce the construct validity (Yin, 2013). Furthermore, the authors independently went through the coding process, relying on the investigator triangulation (Patton, 2002), to increase the robustness of the analysis.

Second, we organized the information in a matrix (Miles and Huberman, 1984), allowing to compare interview results and to develop a cross-case analysis, highlighting common patterns and differences.

The third step of the analysis has been related to the definition of the common characteristics and the differences in term of approaches to the implementation of the OI project. This final step brings to the emergence of two main reference models that can be further discussed and compared under the theoretical lenses previously presented.

4. CASE PRESENTATION

The following sections are going to present the six projects that have been analyzed. In particular, the aim is to highlight how they manage an Inbound Open Innovation project. In this section, the cases are briefly presented.

4.1 UNIVERSITY A

Coursera asked university A to get on board on the platform, proposing their course embedding their innovation: the chance to teach to a global audience. The initiative has been carried out with a three years project involving six professors and developing three courses. The project has not been particularly structure since professors were selected and then they autonomously organized the courses and the contents.

The project aimed to increase the diffusion of university's courses at international level and to offer extra activities to the students already enrolled in the university.

The project is considered a success by both professors and the management of the university; indeed, they declared how this initiative has been able to stimulate innovations also in traditional teaching activities, such as live lectures, and increasing visibility both of university and professors themselves.

The courses have been attended, on average, by 8.000 students. Due to a change of management, the commitment to the project is now temporarily reduced, and the implementation program slowed.

4.2 UNIVERSITY B

The university B, after an in-depth analysis of the MOOCs' market, decided to collaborate with Coursera. In this case, the university implemented a structured project to implement the innovation initiative. Nevertheless, first, they appointed a project team and defined roles and responsibilities within it. The pilot project has been assigned to a project manager, aiming to coordinate the development of three courses through the involvement of six professors and many

assistants. Furthermore, external professionals have been involved in providing technical support in the development process.

The digitalization of the university was already one of the main strategic goals for the management of University B. Indeed, the project aimed to align the university to the international market trends in order to maintain the innovativeness and the higher visibility of the school. Both management and professors were satisfied with the results. Nowadays, six courses are presented on the platform, varying from10.000 to 80.000 students enrolled in each of them. The management increased both the commitment to the project and the promotion of the partnership with Coursera.

4.3 UNIVERSITY C

The university C was analyzing different MOOCs provider when Coursera asked them to join the platform. A three-year project has been implemented through a very structured approach. Indeed, they defined a dedicated team with clear responsibilities. The project manager was in charge of a multidisciplinary team, composed by professors, the course's coordinators and assistants.

The objective of the project was two-fold. On the one hand, the project was developed in order to keep up with innovative trends and innovative educational methodologies, maintaining the perceived innovativeness of the university. On the other, the purpose was to develop blended learning, linking online and traditional courses, aiming to increase the quality of the education. University C carries out four MOOCs with 18 professors involved. On average, they have 25.000 enrobed students each. The initiative is positively considered both by professors and by the school management.

4.4 UNIVERSITY D

A student of the University D, working as an assistant, suggests to investigate the Coursera initiative and, after the management approval, the partnership has been signed.

The pilot project has been composed of three courses. The development process has been highly structured. A project manager and a coordinator were in charge of the organization and the

management of the project, helped by a new team composed of video-shooting experts and designers.

The declared purpose of the project was to experiment with new teaching methods and enhance professors' competencies and skills working with the leader on online courses. Therefore, online courses were considered as a lab in which they can practice how to teach in online courses with a higher rate of interaction with a blended learning perspective. University D is currently offering eight courses taught by seven professors, attended by 10.000 on average. The project is considered a success by all the parties involved.

4.5 UNIVERSITY E

The experience with Coursera began thanks to the personal initiative of a faculty professor. He was attracted by the innovative role of MOOCs in the education system and asked the university's management the chance to get in contact with the platform. Courser, initially declined the request due to the small size of the university, but the professor – being fascinated by the initiative – proposed an analysis of the potentialities of the collaborations for both parties and convinced the platform provider to accept.

University E didn't manage the project through a structured approach, they neither defined a specific investment to implement it, similarly to University A. Despite this, they defined a committee with responsibilities regarding the strategic goal of the project and the power to approve the main decisions, while the development of the project has been entirely delegated to the professor.

The university declared that they develop the course mainly to explore their curiosity and the willingness to investigate the impact on the traditional teaching activities of this innovative education form. Moreover, they considered the platform enrolment as an excellent opportunity to enhance the visibility of their institute. The project has been successfully delivered and brought to the development of the other three courses. The four courses they developed involve approximately 20 professors and have, on average, 20.000 students enrolled.

4.6 UNIVERSITY F

The last university, University F, decided to join Coursera because it has been considered the platform with the broadest audience and with the most significant contention with other academic institutions.

The university designed a specific investment plan. A structured team managed the project with clear roles and responsibilities. They defined a specific project manager also for each developed within the main project. They also involved external players: such as a pedagogical engineer and video editing professionals. The first was in charge to collaborate with professors in order to define the structure of the courses. The ladders were accountable for the shooting activities and the editing of the videos. In the end, professors, along with a certain number of teaching assistants, were responsible for the topics.

The main purpose of the collaboration was to increase the worldwide visibility of both high-level courses and the university itself. Moreover, the interviewer suggested that it even became a source of revenue: "*it costed more, but we also gain money from it*". They created a partnership that can be withdrawn at any moment, but for now, they decided to keep it in place. They offer 12 courses on the platform, which are attended by 10.000 users on average, involving 21 professors.

4.7 CASES COMPARISON

In this section, we aim to compare the case involved in the research. First of all, it is important to highlight how in all the cases the projects are reported as a success, both considering the respondents and matching their words with the data publicly available through the platform (rating and comments). All the respondents described the initiatives as a success both for the results and success of the courses and for the great visibility obtain with the participation on the online platform.

Moreover, the professors enjoyed the experience and had positive results also in terms of their visibility. Furthermore, the OI projects have been further developed in the different universities: the number of courses taught and the number of professors involved increased over time, and the courses received a high number of subscribers, and they do not seem to want to decrease their

commitment in the future. As an interviewer (University E) state, "*we will certainly continue to invest in MOOCs, we are already developing some new courses. I think that we are going to increase our efforts in this direction and probably we will work with other platforms in the future*". In order to compare the different cases, we focus on nine main dimensions: the main goals of the project, the project trigger (the reason why the project has started), the degree to which the project has been structured, the kind of players involved in the project team, the way the faculty has been selected, the role of the professors in the project, the presence of payment towards the professors, the kind of technical facilities used in the project and in the end some dimensions to assess the final outcomes. Table 3 summarizes these dimensions for each case, enabling a cross-case analysis.

		A	**B**	**C**	**D**	**E**	**F**
Project goals	University Visibility	X	X			X	X
	Potential Revenue						X
	Keep up with international trends			X			
	Increase the quality of traditional teaching	X		X	X		
	Develop new skills			X	X	X	
	Curiosity on innovation itself		X			X	
Project trigger	Coursera approached the university	X	X	X			X
	The University approached Coursera			X	X	X	
Degree of structure of the project	Structured		X	X	X		X
	Not structured	X				X	
Roles in the project team	Project Manager	X (Light)	X (Strong)	X	X	No	X
	Coordinators			X	X		
	Professors	6	6	18	7	20	12
	Specialists (video, editing, design, …) [External or Internal]	1 [I]	Several [E]	Start-up [E]	Several [I]	No	Several [I]
	Assistants	Some	Several	Some	Some	No	Some
Faculty selection	Top Down	X	X	X	X		X
	Bottom up			X		X	
Professors' role	Key actors (high autonomy)	X				X	
	Just team members		X	X	X		X
Professors' Incentives	No Payment	X				X	
	Payment		X	X	X		X
Technical facilities	Already existing	X				X	
	Dedicated		X	X	X		X
Outcomes	Pilot courses	3	3	3	3	1	1
	Actual courses	3	5	4	8	4	12
	Average participants	8.000	10.000 /80.000	20.000 /30.000	10.000	20.000	10.000

Table 3 – Cross-case analysis

Considering the table, some interesting differences in the way in which the innovation projects have been managed and organized. Beyond the project trigger - which in some cases has been Coursera itself (A, B, C, and F) and the university in others (D and E) - four institutions (B, C, D, and F) developed the project with a highly structured organization and a transparent process. They started with an in-depth analysis of possible platforms and the definition of the project teams. As the university B project manager states, "*we have all analyzed the courses catalog offered on the platform in order to understand which ones were missing. Among these, we selected the topics on which we have the expertise and which could be of interest to the online community*". The professors were selected evaluating the relevance and the interest of their topic for the platform and also the professor itself selecting the ones that are more willing to get involved.

In those cases, the implementation of the pilot project seems particularly structured also from an organizational perspective: they defined clear roles and responsibilities. The project manager was in charge of the project, the relationship with Coursera, and the coordination of the different actors. The teams included different kinds of competencies, varying from the content of the courses (i.e., professors), to the technical knowledge related to the innovation itself (e.g., shooting professionals) and eventually pedagogical consultant to develop a content coherent with the new media. Considering, for example, the case F, as they declared, they "*have a pedagogical engineering team, working with the faculty, on the structure of the MOOC, activities, modules, and so on*". Case F interviewee then continued by claiming: "*And then we have a video editing team that works on all the contents in order to deliver it in the best way. A dedicated project manager manages all these people. We defined a project manager for each MOOC*".

On the other hand, University A and E seem to adopt a less structured way to manage the pilot project. In the E case, for example, a "pioneer" professor was interested and consequently invested time and effort in the project and persuaded both the university and Coursera to participate. In both cases, professors were delegated to develop the courses autonomously. The respondent of case E states, "*they [professors] have autonomously innovated the courses program and the materials, adapting them to the platform potentialities*". Moreover, they have not been paid for

the extra-work, leveraging their interest and passion towards the object of the project. The different role embedded by the professors in these two cases leads also to a different structure for the project team. They were responsible for the contents and the management of the course, sided by limited support given by the university both for the administrative and the technical parts.

Even if the cases present significant differences and seem to cluster around two main models, all of them can be considered successful according to the dimensions analyzed on their outcomes (e.g., the difference between the number of courses in the pilot project and actual courses as well as the average number of enrolled students).

5. TWO APPROACHES TO MANAGE INBOUND OPEN INNOVATION PROJECTS

The comparison of the cases let emerge two different models adopted by the universities in order to implement the inbound project: a team-centered and an individual-centered approach. Both approaches seem to be successful if we consider both the objective results, such as the number of participants, and the perceptions of the respondents involved in the research. The first one is highly coherent with previous literature; therefore it is going to be briefly commented to see how previous works fit in the empirical evidence of this study. The second, named as Individual-Centered approach, reveals a novel contribution that links open innovation and agile practices to implement innovation. This second approach represents the main contribution of the paper, which is therefore analyzed with greater details in the following of the paper.

5.1 TEAM-CENTERED APPROACH

The majority of the analyzed universities (namely: B, C, D, and F) approached the project to implement an inbound open innovation project in a very structured way. We defined it as a Team-Centered Approach. Open Innovation literature provides fragmented insights to manage inbound projects, that seem coherent with this approach (e.g., Van der Meer, 2007; Chiaroni, Chiesa, & Frattini, 2010; Chiaroni, Chiesa, & Frattini, 2011).

In this approach, management commitment and, consequently, top-down decision process seems to be considered a key success factor to implement an inbound OI project (Chesbrough &

Crowther, 2006). In particular, the cases show how top management played a key role especially in the very first phases – coherently with previous literature (e.g. Van der Meer, 2007; Chiaroni, Chiesa, & Frattini, 2010; Chiaroni, Chiesa, & Frattini, 2011) – creating a positive attitude around the project and providing the resources necessary for the project development. In the same perspective, other scholars (e.g., Lakemondet al., 2016) pointed out the role of a clear strategic direction in managing this kind of project as well as the fundamental role of project management practices. The presence of a strong project manager and clear accountability in these universities seems to confirm the existing literature. Moreover, the chances to leverage multidisciplinary teams, defining clear roles and responsibilities enable the cross-fertilization and knowledge integration, coherently with previous researches (e.g., Lakemondet al., 2016).

Despite the position of previous studies that highlight the chance to manage this kind of projects through a "trial and error" approach (e.g., Huizingh, 2011), these cases show how basic project management techniques may bring success in this context. In this approach, the role of the professors is marginal, that is a mere content provider. The project management team, and in particular the project manager, has a central role, defining how to manage the relationship with the external innovator (i.e., Coursera) and how to structure the team, that may involve both internal (i.e., Professors and assistants) and external (i.e., professionals for video editing of educational consultants) resources. The chance to provide clear goals and responsibilities enhances the ability to control the project during its executing and to assess the outcomes at the end. This structured approach often engages the internal stakeholders (professors) relies on the economic drivers, due to the top-down approach through which the project is defined at the beginning. Finally, it is important to point out how this approach can quickly scale up in case of necessity. The structured team and clear processes lay the foundations for a potential increase in resources involved and courses provided, as suggested by one of the respondents: "*The university board has not yet decided how many courses will be implemented on the platform but wants to be ready: we have created a structure that can easily manage even a much greater number of courses*" (University B).

5.2 INDIVIDUAL-CENTERED APPROACH

The second approach presents an entirely different perspective of how it is possible to implement an open innovation project inside an organization - which we define as an Individual-Centered Approach.

Two cases, namely universities A and E, showed a common behavior which presents significant differences with the approach suggested by previous literature and consequently with the other four cases.

The focal role is entirely different, not a project manager defined from the top management, but a single employee of the university that is autonomously in charge of the implementation of the project. Professors act as the Project Manager, and they keep the relationship with all the players involved (i.e., the management and the platform provider).

In this perspective, we can find strong parallelism with the principles of agile project management: the autonomy of the people working on the project to autonomously taking part of the decisions (e.g., Chan & Thong, 2009; Cooper and Sommer, 2016). One of the main antecedents of effective implementation of a flexible approach is the ability to provide employees with the right level of autonomy (Birkinshaw, 2018).

In this vein, the selection of the professors seems relevant and may determine the success of the initiative. As described by one of the respondents of University A, "*the university has chosen me because I am a person who is very committed to innovation and who likes to take up this kind of challenges*". Therefore, they selected professors in order to leverage their passion and interest in innovation and digital tools or the desire of professional development. In this way, they were powerfully motivating, and so they dedicated considerable effort in the implementation of the solution.

This is an effect on the overall structure, which is less formal: the organization of resources has been defined autonomously by professors, moving from the previous top-down approach to a bottom-up perspective in which individuals proactively ask for help and support from their informal network.

The individual-centered approach presents some strengths. Indeed, the initial investment seems to be lower than in the previous approach, since neither a structured work team nor resources (i.e., technical facilities) or dedicated roles (i.e., project manager, specialist) are planned. Moreover, the professors themselves are not remunerated for managing the project, which becomes part of their regular work.

Agile principles value lean and fast processes to reach a viable product as soon as possible, in order to understand how to improve in the following iterations (e.g., Knapp et al., 2016). In this perspective, the individual-centered approach allows a higher level of experimentation in project development (Cooper and Sommer, 2016). The project itself becomes a continuous learning experience to understand the focus of the project better and correct it during the implementation. Indeed, professors were free to try different approaches to the new tool and different formats, interacting directly with the platform provider, asking about best practices implemented by other schools, and so on. The chance to implement changes during the course delivery, also allowed to integrate users' feedbacks, retrieved on the forum, enhancing the users' satisfaction, coherently with agile principles which put the customer at the center (Cooper, 2017).

Two main challenges emerge through the analysis of the data. First, there are difficulties in term of control. The absence of a formal structure does not allow to understand the effort at the basis of the project clearly. Second, scalability may become an issue. Since the success of this approach is directly related to the individual propensity, the time and effort that the employer can dedicate is limited and so the possibility to increase the number of courses. Often, this employee is driven by intrinsic motivations (e.g., Pellizzoni et al., 2015), such as the passion of the professor previously mentioned, that cannot be copied by the decision to propose a second project.

In order to successfully implement an individual-centered approach, organizations need the right people to let the implementation start with the first cycle, but also the right culture to let it spread and involve other people in the scale-up of the pilot project. Once again, this is coherent with agile literature which considers the organizational culture a necessary antecedent for the proper implementation; otherwise, the success of a first pilot project cannot be replicate scaling it up (Sommer et al., 2015).

This second approach seems incoherent with previous literature on open innovation, neglecting almost all the practices mentioned in the theoretical background. There is not a proper management commitment (Chesbrough & Crowther, 2006), but more compliant top management. Neither there is a clearly defined strategic goal and an overall program (Lakemond et al., 2016). On the one hand, the traditional approach based on stages and gates is being abandoned for an agile or at least hybrid approach (e.g., Cooper and Sommer, 2016), with researchers showing a positive impact on agile methodologies on projects' success (Serrador and Pinto, 2016). This individual-centered approach seems to rely on the same Agile principles including a higher level of flexibility (Misra et al., 2009), iterative process in order to develop quick output and customer involvement (Verganti and Buganza, 2005; Buganza and Verganti, 2006).

5.3 MERGING OI AND AGILE PRINCIPLES

This research contributes to the OI literature in two main ways. On the one hand, it reinforces previous literature in the field discussing the critical success factor of OI implementation (Subtil De Oliveira et al., 2018) according to the structured approach sustained by previous research (e.g., Chiaroni et al., 2010; 2011). On the other, it proposes an emerging model for OI implementation – namely the Individual-centered approach – which is coherent with employee-driven innovation (Høyrup, 2010; Kesting and Ulhøi, 2010) and entrepreneurship dynamics (De Massis et al., 2016). In particular, building on the recent literature on agile methodologies (e.g., Cooper, 2015; Cooper and Sommer, 2016), this research provides a link among the OI literature and the rising research that suggests alternative principles (e.g., individuals' autonomy, the value of experimentation, the power of a shared leadership) as key factors in project implementation. In the end, this literature has been reconsidered according to the macro-critical factors suggested by Subtil De Oliveira and colleagues (2018), as summarized in Table 4.

Critical Factors	Team centered approach	Individual centered approach
Leadership	The human capital in the organization is selected and	The willingness to participate and to innovate is the leadership driver

	managed to reach a goal defined in a top down perspective (e.g., Salter et al., 2014; Lakemond et al., 2016).	that guide the OI implementation (e.g. Cooper et al., 2015; Birkinshaw, 2018),
Internal Innovation Capability and	The necessary competencies are picked and put in the project team, both internally and externally to the firm (e.g., Mortara et al., 2009; Mowery et al., 1996).	The project team develop and spontaneously search for the competences needed during the development of the project, coherently with the seminal concept of know-where for the definition of OI (Chesbrough, 2003)
Network and relationship	In this research the role of network and relationships is mainly related to how the external ideas entered in the organization, without showing great differences in the two approaches.	
Strategy	Coherently with previous research (e.g., Chesbrough and Crowther, 2006; Chiaroni et al., 2010), OI projects needs to be tightly related with the strategic organization of the firm, that decides to invest in the project.	The firm needs to believe in OI has a process that may have bottom-up directions as well, giving the right autonomy to the individual to experiment and try to implement the innovation coming from the outside (Chan & Thong, 2009; Cooper et al., 2015; Birkinshaw, 2018).
Technology Management	In this research the role of technology management is mainly related to the relationship with the platform that provide the external opportunity, without showing great differences in the two approaches.	
Culture	OI is perceived as a formal duty, relying on a clear structure where people have a specific role (e.g., Chiaroni et al., 2010; 2011).	Experimentation is at the basis of the OI culture in this approach, the company let employees to try out new opportunities and go through new path (e.g., Cooper and Sommer, 2016)

Table 4 – Comparing the two approaches

In other words, this approach is suggesting a meeting point between the vast literature on Open Innovation (e.g., Chesbrough, 2003; West and Bogers, 2014) and the growing literature on agile approaches (e.g., Sommet et al., 2015) especially in digital and start-up like environments (Ghezzi, 2018; Ghezzi and Cavallo, 2018). In particular, this is suggesting how the two worlds may be considered together, opening new ways and opportunities to successfully implement Open Innovation in a context which would not be suitable to traditional approaches like the team-centered one.

6. CONCLUSION

This research aims to exploit better how organizations can implement an Inbound OI project, relying on previous researches knowing that an integrated analysis of the implementation process, is still missing (Huizingh, 2010; Chiaroni et al., 2010; West and Bogers, 2014).

Through a multiple case study developed in the education field, analyzing six different universities that decided to implement an inbound OI project getting on board the platform of an external innovator (i.e., Coursera) this research offers two main approaches to the implementation projects.

On the one hand, a Team-centered approach emerges as the dominant paradigm, being coherent with previous fragmented literature on the topic (e.g., Chesbrough & Crowther, 2006; Van der Meer, 2007; Chiaroni, Chiesa, & Frattini, 2010; Chiaroni, Chiesa, & Frattini, 2011). On the other, an Individual-centered approach emerges – even if in a smaller number of cases – being coherent with a growing literature body at the intersection of project and innovation management: agile approaches (e.g., Cooper and Sommer, 2016, Serrador and Pinto, 2016) also based on different triggers, such as employees (e.g., Høyrup, 2010; Kesting & Ulhøi, 2010).

In particular, the chance to highlight an emerging individual-centered approach offer space for theoretical contribution. We learned that agile principles – such as high level for autonomy, recognizing the role of experimentation and the chance to promote a culture for the individual initiatives (e.g., Cooper, 2015; Cooper and Sommer, 2016) – may be useful in OI projects, in order to implement opportunities coming from the outside. Indeed, OI and agile principles may share several dynamics and fundamental principles, even though they have not been adequately studied in the literature.

From a managerial perspective, this research sheds light for managers searching for different alternatives to implement an inbound activity, offering two different approaches with opposite advantages and disadvantages. On one hand, it is possible to approach inbound OI projects leveraging a structured approach, requiring a relevant involvement of the top management in the first phases, creating an ad-hoc structure and managing it according to the project management

best practices (e.g. clear goal, defined roles and responsibilities) relying mainly on extrinsic motivations (e.g. salary, visibility). On the other hand, managers may decide to manage the same projects through a less structured approach, leveraging intrinsic motivations of the individual that will lead the project. This second alternative is less costly and has a smaller impact on the organization, but at the same time is less replicable and requires the involvement of individuals that cannot be decided top-down but need to apply and search for this kind of project, in a self-entrepreneurship perspective.

Obliviously this paper is not free of limitation; indeed, it does not mean to be exhaustive but has an exploratory intent. It is based on a small and convenient sample and leverages data gathered with interviews and through secondary sources. Nevertheless, the two-step process increases the reliability of the findings due to the similarities that emerged during the second step. Moreover, this research is entirely based on qualitative data, without any quantitative measurement of the returns on the two projects or with a longitudinal perspective on future development. Therefore, future researches may try to overcome these limitations, focusing on other empirical settings, and trying to measure the impact of the two approaches. In particular, the second approach – the Individual-centered – may open different avenues for future researches. In particular, it may be interesting to further explore the study of agile principles in the implementation of OI projects, in order to highlight other possible similarities and differences, to understand at which extent the two literature streams may build one on the other. In other words, it may be relevant for OI scholar, and practitioners to understand how the agile literature may help them and vice-versa.

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