

# **POLITECNICO DI MILANO**

School of Industrial and Information Engineering

Master of Science in Management Engineering



## **CORPORATE-STARTUP COLLABORATION FOR DIGITAL INNOVATION: EMPIRICAL ANALYSIS ON THE ITALIAN MARKET**

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Academic Year 2017/2018

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## Acknowledgements

*We would like to express our gratitude to our supervisor Prof. Mariano Corso, and to our co-supervisor Ing. Alessandra Luksch for the support in conducting this master thesis. A special thank goes also to Ing. Filippo Frangi who assisted us throughout every step of the work.*

*We would also like to thank our families, that believing in our capabilities fostered us in doing our best during these five years of university.*

*Finally, we thank all our friends, and, in particular, those who shared with us the walk along this important path.*

*Filippo Pascazio*

*Francesco Costa*

December 2018

## Abstract

### **English**

During recent years, several industries have been completely reversed by the establishment of new global digital players, which leveraging on the exploitation of megatrends defeated the incumbents. Nowadays, there are no industries which can claim to be safe from disruptive innovation. Therefore, it is a key for their survival to rethink the innovation process in a new way, reaping the benefits and not only suffering the hardships of digital innovation.

This master thesis starts from the evidence identified in literature that the Open Innovation paradigm, and in particular, the collaboration between firms and startups, can be an effective approach to foster the development of digital innovation. This is endorsed by the fact that 52.4% of 500 world biggest firms works with startups<sup>1</sup>. Therefore, the objective of this research is to understand how much this typology of collaborations is widespread in Italy and what major obstacles are on the way, using case studies as a reference too.

### **Italian**

Negli ultimi anni molti settori sono stati completamente rivoluzionati dall'affermarsi di nuovi attori globali che, sfruttando importanti megatrend digitali (ad esempio la servitizzazione), hanno superato le grandi aziende leader. Oggi dunque non c'è mercato che possa affermare con certezza di essere al sicuro dalla Digital Disruption. Pertanto, è di importanza chiave per la sopravvivenza di ogni azienda ripensare il proprio modello di innovazione cercando di godere dei benefici offerti dell'innovazione digitale e non di subirne le conseguenze.

Questa tesi trae spunto per il tema trattato dall'evidenza individuata in letteratura che il paradigma dell'Open Innovation, e in particolare la collaborazione tra aziende e startup, può essere un approccio efficace per favorire lo sviluppo dell'innovazione digitale. Questo è confermato dal fatto che il 52.4% delle 500 aziende più grandi del mondo collabora in un modo o nell'altro con le startup. Infatti, il fine di questa ricerca è quello di capire quanto le imprese Italiane implementino effettivamente questo tipo di processi. Inoltre, essa si propone di identificare le principali tipologie di collaborazione che prediligono e i principali ostacoli che incontrano quando vi si avvicinano, portando anche dei casi di studio reali.

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<sup>1</sup> #500 Corporations – 500 & INSEAD (2016)

## Executive summary

This thesis starts with an overview of the phenomena of Digital Disruption and Digital Innovation, which contributed to the creation of new performance dimensions for products or services, threatening seriously the companies which were not flexible enough to withstand the change. Among the possible ways to counter this menace, this thesis focuses on the Open Innovation paradigm as a new perspective to conceive innovation. In fact, this approach consists in fostering knowledge inflows from external sources and promoting outflows of inner knowledge towards the external environment to fully reap value in way that would not have been possible otherwise. This concept was theorized by Henry Chesbrough in 2003 in his essay titled: “Open Innovation: The New Imperative for Creating and Profiting from Technology”.

Among the different partners which can contribute in an open environment to develop innovation, the candidates focused their work on startups inasmuch as potential collaborators for companies. The former is nowadays a very important actor for every market in the new competitive ecosystem and Italy is no exception. In fact, as it is happening worldwide, the Italian startup ecosystem is steadily growing in importance. The entire market of innovative startups and innovative PMIs was worth in terms of revenues more than 2 billion euros in 2016. Moreover, their overall revenues grew of 81.3% between 2015 and 2016 and their total workforce accounted for more than 46'000 people.<sup>2</sup>

As far as its objectives are concerned, this work aims at answering three main research questions related to the corporate-startup collaboration. The first objective is to understand the level of implementation of those practices in the Italian ecosystem. Secondly, this thesis intends to identify the most diffused ways to engage in a relationship with startups. The last goal is to recognize the most frequent problems and critical issues which affect Italian companies during this kind of collaborations, hindering their success.

In order to answer these questions, the candidates performed as first step a literature analysis to gather knowledge on the topic and understand the state-of-art concerning the practice of corporate-startup collaboration.

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<sup>2</sup> Ministero dello Sviluppo Economico - Startup e Pmi innovative - 20 dati chiave dalla Relazione Annuale 2017 sulle startup e le PMI innovative

From this analysis, four main objectives for companies willing to collaborate with those new players emerged: rejuvenate corporate culture, innovate big brands, solve business problems and long-term strategic goals. These objectives are enabled by some qualities possessed by startups: their potential for disruption, their entrepreneurial mindset allowing them to take riskier paths, their capability to think outside the box and their state-of-art technology.

Similarly, different modes of collaboration have been identified in literature. These were addressed thoroughly, starting from the less demanding ones to the most challenging in terms of resources needed to make them up and running. Following this logic, this thesis dealt, for example, first with Call-for-ideas and Hackathons, which are relatively self-contained events employing few resources, particularly useful to trigger a cultural change. Later on, corporate accelerators & incubators, procurement and partnerships were discussed, as well as investment and acquisitions. Finally, pros and cons were identified, trying to ease the process of understanding whether a certain collaboration could be employed given a set of company goals. Relying on this review, the candidates defined a new categorization of interaction typologies. A model was also drawn to represent in a qualitative way to what extent each one of them allows companies to reach the four previously mentioned objectives behind corporate-startup collaborations.

Moreover, thanks to the literature on the topic, the candidates identified the major factors that can affect collaborations in a positive or negative way depending on how they are managed. IP and NDA management were discussed trying to identify how to handle intellectual property without jeopardizing the startup's future. Given the irremediable tensions between the partners which they can lead to, power asymmetries were investigated too. Payment terms were another typical element that companies usually face, though most of the time they are not considered an insuperable concern. In addition, the alignment of objectives and the assessment of time schedule were dealt with: the more different the two partners are, the more there is the need to clarify objectives and define the time horizon of the project. A particular attention was also given to the exigence of putting into practice dedicated procedures or roles, since a startup cannot be treated or analysed as a normal venture would be.

In order to build the results section of this thesis, the main methodological tools employed have been the following: a Survey developed with the Observatory Startup Intelligence through the Opinio platform and addressed to Chief Innovation Officer and Innovation



Managers of Italian companies, which has received 250 responses; direct telephonic interviews to startups' representatives and company managers and the participation to conferences and workshops organized by the Observatories of Politecnico di Milano for professional managers of Italian companies.

All these activities have been exploited in order to gather data and insights to perform the empirical analysis of the Italian market about digital innovation and about startups as partners for Open Innovation. Gathered results are also enriched by original case studies offering a practical example of that topic.

Within the analysis data has been grouped and structured to facilitate its fruition, performing also a dimensional breakdown in *medium*, *big* and *biggest* firms. In particular, the first outcome was that Italian firms claimed having been engaged in collaborations with startups in the 33% of the cases. Though the latter is a still modest result, an additional percentage of firms planning to do it in the next future (21%) reveals a substantial interest in this kind of practices. Moreover, the dimensional breakdown shows that more than one *biggest* firm out of two collaborates with startups. The second important finding was that the most popular relationship typology proved to be the partnership in the R&D (50%), followed by one-time supply (41%) and long-term one (27%); on the other hand, the less common one was by far acquisition (6%). This shows that startups are highly considered as partners for their innovative capabilities, while, on the contrary, their acquisition tends to hinder this quality, thus the latter lags behind the other practises. As far as the third research question is concerned the most critical collaboration issues identified by Italian firms were communication (43%), collateral formalization (37%) and Intellectual Propriety management issues (29%); on the contrary payment terms were considered critical problems by less than 1 firm out of 10. It was interesting to notice how the collateral formalization issue was reported in particular by *medium* firms.

As concerns the main limitations of the analysis, these were mainly related to the numerosness of the survey sample with respect to the Italian companies' population. This problem, which is more relevant for *medium* firms given their higher number in the Italian ecosystem, lowers the statistical significance of the conclusions drawn when they are attributed to the entire firms' population. Another limitation was that the sample was not large enough to draw other specific insights, such as identifying the main traits of those companies which relinquished their path of collaboration with startups.

The conclusion of this master thesis highlighted the main concepts emerged from the analysis of the Survey, the information collected during the interviews, the workshops and the final convention. The importance of corporate-startup collaboration in the Italian ecosystem, in particular in their declination of R&D partnerships and Supply, was remarked. As acknowledged in literature, these two types of interaction are the most suitable to solve business problems through innovation. In addition, from the interviews it was possible to notice that sometimes firms enter in a collaboration relationship with startups outside of a systematic Open Innovation program. However, the same interviews also suggested that Italian firms still tend to privilege traditional partners, such as established companies and universities. Finally, communication has been identified as the most critical factor to be managed in company-startups collaboration practices to ensure their success and their replicability. This suggests the necessity of working on culture, language and coordination both for firms and startups; as found in literature, in order to win together, efforts need indeed to be implemented on either side.

# 1. LITERATURE REVIEW

## 1.0 Review methodology

The literature review section starts from the definition of the concepts of digital disruption and digital innovation, which are fundamental to understand how the world is changing and where the markets are headed to. In the following chapter the Open Innovation paradigm is presented as a possible answer to the abovementioned changing circumstances. From chapter 1.3 on, the practice of collaborating with startups is presented. The latter are in fact one of the most important source of innovation in the present-day landscape. Chapters 1.3, 1.4, 1.5 are built with the aim of answering three questions:

- I. Which are the main typologies of relationships that can be undertaken by established companies to collaborate with startups?*
- II. Which are the pros & cons of each typology?*
- III. What are and how is it possible to overcome the most critical collaboration factors through contractual or organizational precautions?*

These questions have been tackled researching through specialized papers and toolkits. Whenever possible, each topic is accompanied by a real case example to allow a more in-depth comprehension.

## 1.1 Disruptive Innovation & Digital Innovation

Digital Innovation is creating enormous opportunities in many markets all over the world. Italy is not an exception, in 2017 the digital market's value hit the value of 68.7 billion euros and the forecasts for the following three years were optimistic, with an annual growth rate of 2,7%<sup>3</sup>.

The next paragraph tries to point out what are the main characteristics of Digital Innovation and where all this market value does stem from.

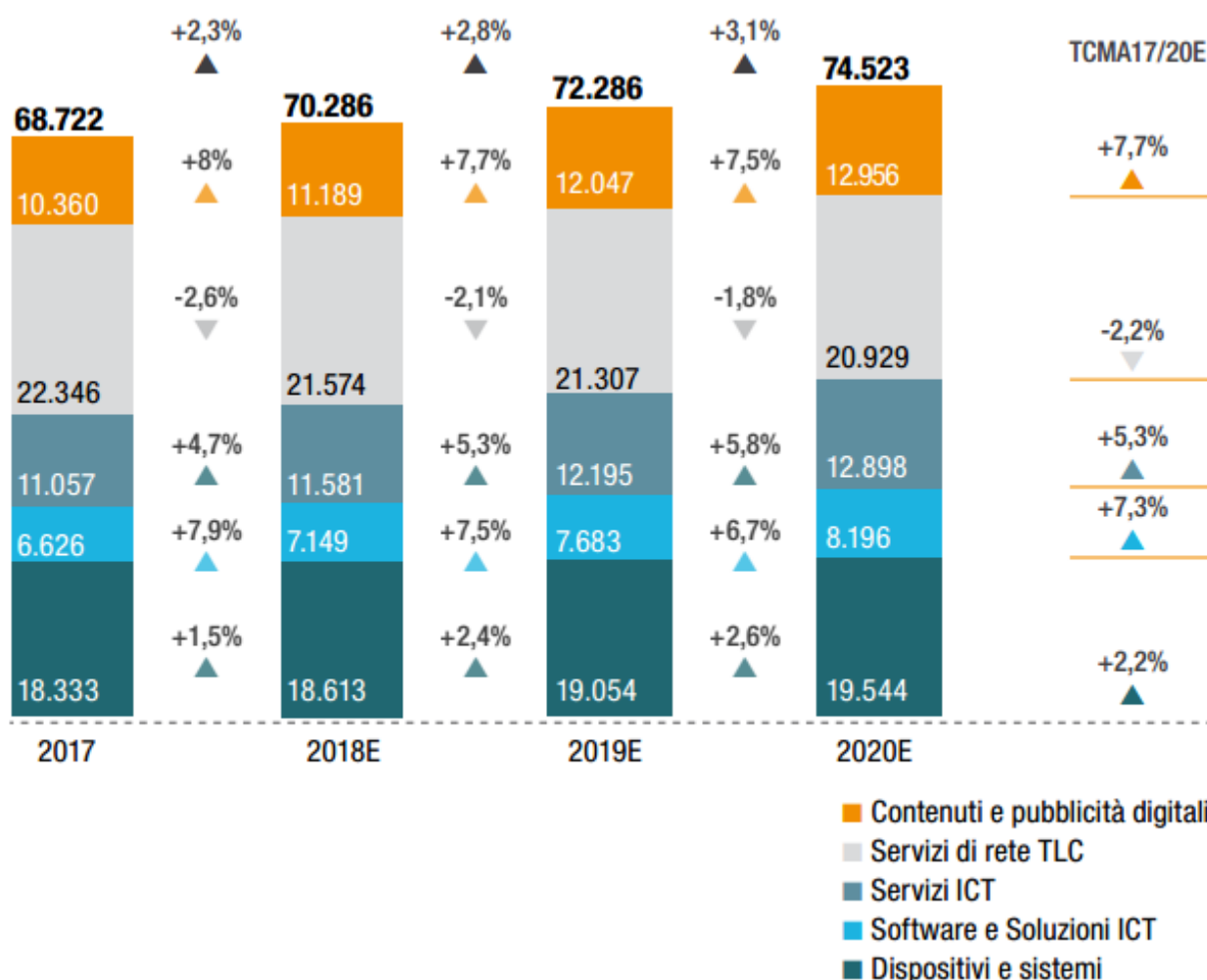


Figure 1: Expected growth of the digital market in Italy

The Digital Innovation concept is strongly related to the paradigm of **Disruptive Innovation**, which, despite its strong importance in the present-day context, it is not a recent idea: it has indeed been theorized back in 1995 by Christensen and Bower in their article: “*Disruptive technologies: catching the way*”. In businesses a Disruption usually

<sup>3</sup> Assinform 2018

occurs when an incumbent's position is threatened by a weaker and smaller company. However, it is important to point out that the concept of Disruptive Innovation is not related to the technological improvement of products. Indeed, products or services arising from Disruptive Innovations do not perform better than mainstream products on traditional dimensions, at least at the beginning. On the contrary, they switch the focus on new performance dimensions and result in cheaper products accessible to a larger audience.

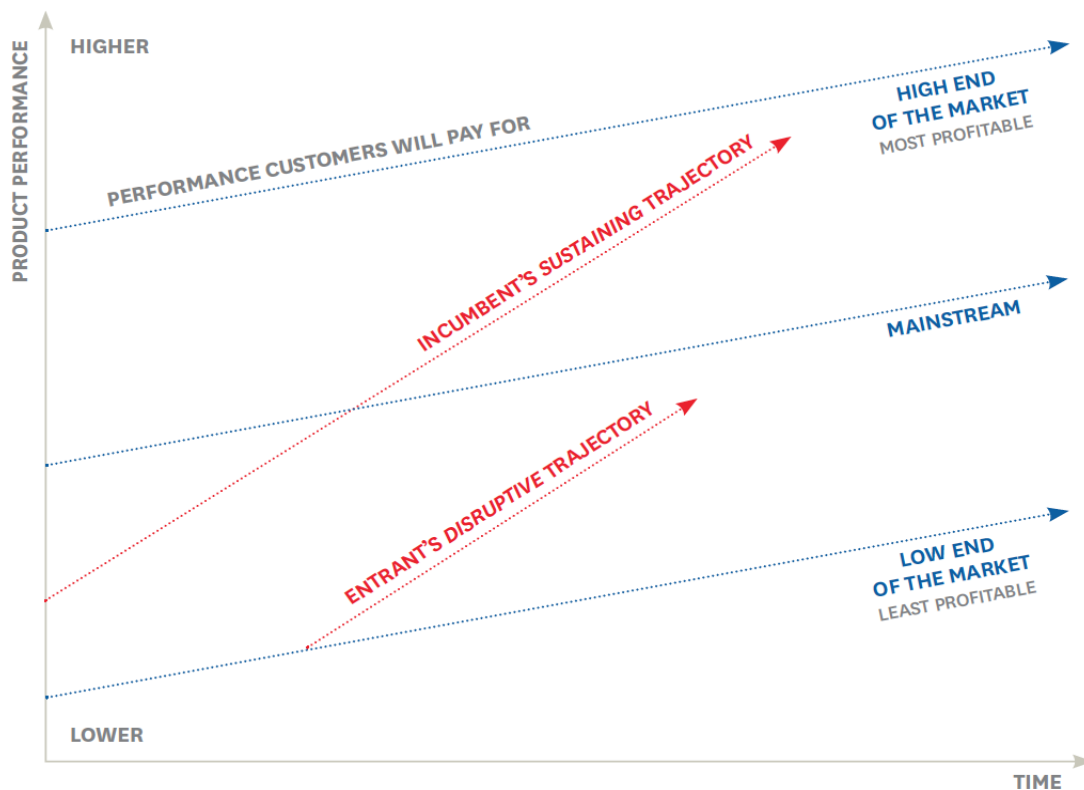


Figure 2: Christensen & Bower Digital Disruption model

A precondition that allows the disruption process to happen is that an incumbent company starts to overlook the mainstream market in favour of the high-end, by introducing incremental innovations to satisfy their higher performance needs. This paves the way for new players willing to serve the overlooked part of the market, even facing lower margins. The entrants then step by step improve their products performances and move upmarket, finally challenging and knocking out incumbents.

The concept of Disruptive Innovation is strongly related to the one of **Big Bang Disruption**, firstly theorized by Downes and Nunes in 2014. It is the capability to create alternative business models responsible for the disappearance of whole business sectors or for the occurrence of dramatic changes in competition logics. Big Bang Disruption is an

evolution of the concept previously described, as it offers from the very beginning not only a cheaper product but also a better performing one.

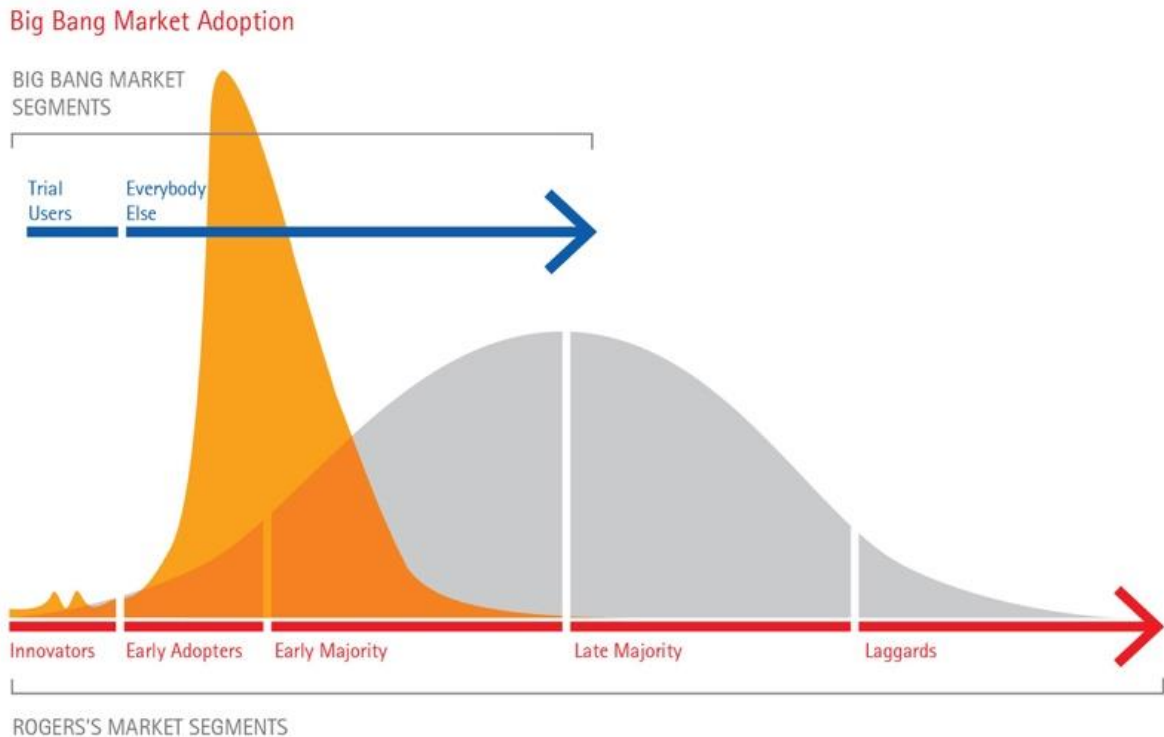


Figure 3: Downes and Nunes Big Bang Disruption model

Indeed, in recent years many disruptive innovations have been enabled by **digital** competences: Whatsapp, Uber, Airbnb are only some business examples in which everything has changed dramatically overnight. Moreover, according to Downes and Nunes, *today every business is a digital business*<sup>4</sup>.

### The Innovation framework

Marion and Fixson developed in 2016 a framework showing the four possible paths towards innovation which firms can walk on to survive and thrive in such a complex environment. As it has been just mentioned, the latter is articulated in four different innovation modes: the specialist mode, the venture mode, the network mode and the community mode. The specialist mode is mainly related to the development, thanks to digital design, of improved

<sup>4</sup> Downes & Nunes (2013)

products with extremely advanced performances. The venture mode is characterized instead by the tendency to innovate through small entrepreneurial teams within the company itself. In the network mode innovation is realised thanks to a network of expertise with a trust-based sharing behaviour. Finally, it is presented the community mode which relies on the Open Innovation paradigm. Being the focus of this master thesis, this topic will be subsequently covered in its dedicated paragraph.

## 1.2 Introduction to Open Innovation

Open Innovation phenomenon stems from that shift in the innovation paradigm that has characterized the years from the early 2000's<sup>5</sup> to present-day. Of course, Innovation has always been of utmost importance for companies, but the way in which the former is intended today has radically changed.

*“Corporate leaders are urgently concerned about innovation for one simple reason: growth through innovation is the surest, straightest route to superior performance”.*

(BCG 2014, Incubators, Accelerators, Venturing, and More)

Across the whole XX century, innovation has been characterized by a paradigm in which the internal R&D unit was the fundamental asset to be successful and most of the times even a way to build entry barriers. The underlying philosophy was: “successful innovation requires control”<sup>6</sup>, in other words companies, to create value, relied only on their own ideas that were followed step by step from the idea generation phase to the market launch. Such model was sustainable only with extraordinary heavy investment in internal R&D, that allowed the attraction and retention of the best and brightest people of the time. That was the only way to create effective ideas: enabling the corporate to reap the “first mover” benefits and consequently dominate the market simultaneously preventing forgeries thanks to a strong defence of the intellectual property rights. According to this model, the only way with which knowledge could exit the company and reach the external world was employing it for a new product: if not, the knowledge was kept inside waiting for a more suitable application. From this perspective it stemmed the following interpretation of the “Not-Invented-Here”<sup>7</sup> (NIH) concept, which in that “Closed innovation” paradigm, as it would have later been renamed, meant something untrustworthy; hence the dominant solution of resorting only to product developed internally.

Another relevant trait was that there was a veritable distinction in R&D between research unit and development one. In particular the former was designed to be a continuous source

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<sup>5</sup> In 2003 Henry Chesbrough released his essay: “Open Innovation: The New Imperative for Creating and Profiting from Technology”, theorising the new Open Innovation concept.

<sup>6</sup> Henry W. Chesbrough, The era of Open Innovation, 2003

<sup>7</sup> Katz & Allen, 1982



of ideas which usually worked with no bonds or alignment with company needs: it was pure creativity. The latter instead was the intermediary responsible for the cherry-picking of only those novelties which matched company objectives. All the above-mentioned properties ensured that companies ended up having massive internal databases full of unexploited ideas, which “collected dust” for years ultimately losing their potential to create value. Moreover, this policy of keeping everything inside even prevented the birth of new ventures around those promising, but unrelated ideas.

Nonetheless, at the end of the century this system started to show some of its weaknesses and according to Henry Chesbrough (2003) this can be brought back to four factors:

1. Rise of number and mobility of knowledge workers

Probably the most important among these factors because of its “opening” effect: from that moment on it became increasingly hard for companies to control their proprietary ideas and expertise. This phenomenon was due to the development of universities which in their turn increased the overall number of qualified workers available on the labour market. If a company wanted to excel the immediate consequence was to try to conquer the best minds among them, up to the point of “stealing” them to competitors. Similarly, workers were, and still are, incentivized to move from corporate to corporate following the opportunities that are offered them. Clearly, their knowledge moves alongside with them and therefore the former started to exit the company’s boundaries. Another possible strategy for former corporate workers was to employ their capabilities to launch their own business, thanks to the factor that will be tackled in the next paragraph.

2. Growing availability of private venture capital (VC)

As anticipated few moments ago the increase of private capital intended to support new ventures, allowed former workers to exploit those ideas that would have been left in the “silos” of R&D labs. Equally, the availability of ideas and entrepreneurs willing to risk for them, nurtured in turn that same venture capital market, which arrived in 2000 to a value of 120,26\$ billion<sup>8</sup>.

3. External opportunities for unexploited ideas

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<sup>8</sup> Source: Statista.com – The statistics portal and Anders Isaksson – Studies on the venture capital process

Instead of remaining inside R&D databases due to the perspective mismatch between research and development units, thanks to the two previous factors knowledge became then exploitable outside company walls.

#### 4. Improving performances of suppliers

In a context in which innovation was a privilege of few, it was hard for corporates to find suppliers with satisfying performances. However, the more the knowledge spread outside, the more companies felt it was the right time to outsource non-core process phases that before were kept inside by adhering to the NIH principle.

The new paradigm that resulted from that innovation turmoil was baptized “Open Innovation”, by that same Henry Chesbrough mentioned above.

*“Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to markets, as the firms look to advance their technology. Open innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model.”*

Henry Chesbrough (2003)

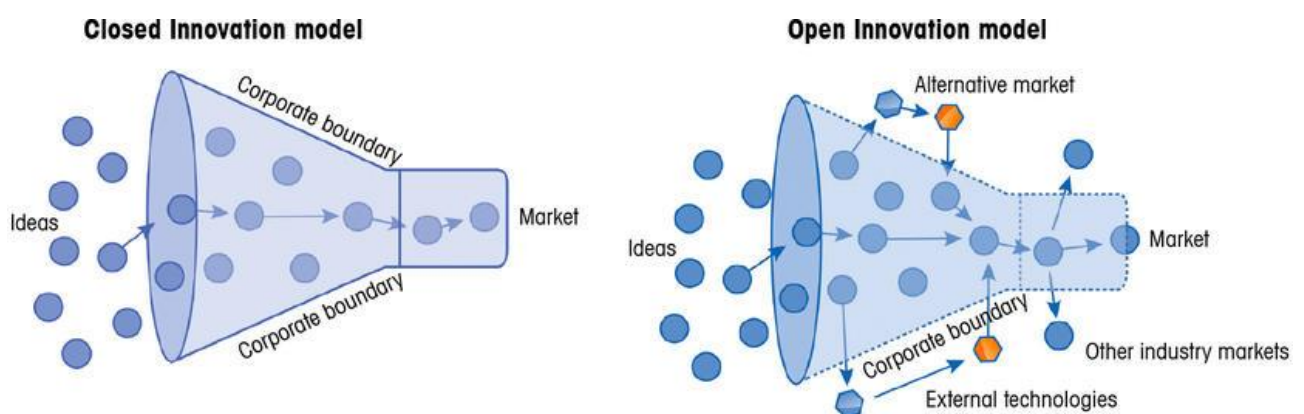


Figure 4: The Close Innovation Funnel and the Open Innovation Funnel

In other words, Open Innovation consists in purposely fostering inflows of knowledge, from other companies, customers and academic institutions, in order to improve and accelerate internal innovation. At the same time, Open Innovation promotes outflows of knowledge towards the external environment to reap value in way that would not have been possible otherwise. The main idea at the basis of this theory is that: in a world where knowledge is so widely distributed, companies cannot simply rely on their resources to develop innovation but should start thinking in terms of innovation networks.

In fact, in the new innovation world, the rising of startups exploiting unused ideas weakened the traditional cycle of innovation. The responsible for a breakthrough, whether his employer company does not pursue his findings in a timely manner, has now a new option: launching his new venture. Afterwards, if it proves to be successful, the startup can either go public or be sold to an established company. In any case, the broader outcome is that the company that funded that breakthrough does not profit from it and the venture that did earn from it, does not reinvest looking for new discoveries.

Plunging deeper into the functioning of the paradigm, it is possible to outline that companies can exploit internal ideas also through channels outside their current businesses, without having to give up on them as in the previous situation. There are different ways of accomplishing that, such as spin-offs and licensing agreements.

In the same way new solutions developed outside can be brought in for commercialization. The boundaries between a company and the external world became permeable and innovation started to move through them freely. Nonetheless, there is no forced path for any idea. It is not given neither that internal knowledge has to be employed in internal pathways, nor that the latter are forced to bring only internal knowledge to the market. Knowledge has to be exploited in order to convey to the company the maximum possible value. For instance: locking up IP rights might not always be the better solution, sometimes it could be winning to share them with others, profiting from royalties and joint ventures or other similar arrangements.

Another key distinction between the two paradigms is related to how companies screen their ideas. Both models equally manage “false positives” (ideas only apparently promising), but Open Innovation has adopted also the ability to rescue “false negatives” (projects apparently disappointing but in reality valuable). With the old approach, all ideas not aligned with the current corporate’s businesses or that needed external knowledge to be exploited had a high chance to turn into missed opportunities. Particularly relevant, if we take into account the

present day highly-dynamic nature of the market, there is no time margin left to keep them in stand-by. This does not happen with the new way to handle innovation, according to which indeed, all promising ideas can be employed, it is only a matter of finding the correct path to the market.

Nowadays, innovation means not only to embrace new solutions developed inside, but also to integrate them with external ones to find the perfect match. In fact, while R&D labs are mainly focused on the development of products/services, innovation is a wider concept which cannot simply be cut down to product improvement and has thus its own place-to-be well beyond the boundaries of the former. It is the product of the knowledge created by start-ups, universities, independent research labs and outside organization that contribute to create opportunities and this is exactly where it is concealed the real challenge for present day companies: to seize it wherever it may be.

It is important at this point to have knowledge of who are the potential partners for a firm in an Open Innovation context. In this matter, this master thesis relies on the work of Chesbrough and Brunswicker (2013) in their “Executive survey on open innovation”. Hereafter, the main possible innovation partners are listed, associated with the most diffused practises to involve them.

| <b>Open Innovation partners</b>               | <b>Inbound activities</b>   |
|---|---|
| Customers, startups, individual programmers   | Hackathon, Datathon, Appathon                                     |
| Internal employees                            | Call4ideas, Call4startup, Contest                                 |
| Suppliers                                     | Crowdsourcing   |
| Startups                                      | Corporate incubator and accelerator                               |
| Competitor or not-competitor companies        | Startup intelligence, Startup scouting                            |
| R&D service providers, startups               | Merger & Acquisition  |
| External consultants                          | Partner scouting on consolidated firms                            |
| Universities or public research organizations | Collaborations with Universities or public research organizations |
| Startups                                      | Corporate VC  |

*Table 1: Partners & activities for Inbound Open Innovation*

This same framework was employed by Politecnico di Milano Observatories to draft the 2018 survey about digital innovation which has been used to carry out the analysis in the “Results”

section. For what concerns instead the core of the literature review, as it will be shown in the next paragraphs only some of them will be considered: those involving startups as second innovation partner (i.e.: hackathons, accelerators/incubators, partnerships, investment and acquisitions).

As previously stated, innovations created internally are not necessarily bound to an internal exploitation, for some of them indeed, the path that creates more value leverages on outbound activities. The latter is by far less common among companies, especially in the Italian environment and it is typically implemented only when the Inbound practises are completely mastered. Even though this master thesis does not deal extensively with them, for the sake of completeness they are listed below.

| <b>Outbound activities</b> |
|----------------------------|
| Joint Venture              |
| Spin-off                   |
| Corporate Venturing        |
| Sale of patents            |
| Licensing                  |
| Platform business model    |
| Donations                  |

*Table 2: Outbound activities for Open Innovation*

To accomplish this hard task, corporates have to adapt themselves and learn how to communicate with diverse institutions; in terms of different culture, language and history. This part of the thesis is drafted exactly to analyse and present literature-drawn suggestions and inputs for possible solutions for those companies willing to engage in relationships with one of these new actors: start-ups, in order to avoid pitfalls and improve outcomes.

### 1.2.1 Startups as partners of innovation

As it is happening worldwide, the Italian startup ecosystem is steadily growing in importance. The entire market was worth in terms of revenues more than 2 billion euros in 2016<sup>9</sup>. Moreover, the revenues growth between 2015 and 2016 has been on average +81% and startups' total workforce accounted for more than 45'000 people. These figures well represent an important phenomenon which can create value and opportunities also outside the boundaries of those new ventures, fostering innovation and cultural change within traditional players.

The main reason why firms should cooperate with startups is related to the disruptive power they may have on different industries. The latter is connected to their capability to create fresh ideas by thinking outside the box and to establish new dominant performance dimensions for products, thus bypassing the traditional competitive arena. Moreover, startups are able to act with agility in a world ruled by quick change, thanks to the entrepreneurial mindset which they leverage on and to their organizational slimness. The reasons behind such innovative performances are mainly two (Klimczuk-Kochanska 2017). First, they have stronger incentives towards efficiency and innovation, as the only way to succeed in the particularly competitive markets which they are in. Secondly, their absent or very light bureaucracy prevent them from losing creativity and agility.

Startups are thus empowered to become potentially dangerous competitors for incumbents. However, it is wrong to see them only as threats as Giuseppe Zocco co-founder of Index-Ventures<sup>10</sup> points out:

*“Big companies are lately waking up to the fact that their industries are disrupted by the innovations led by startups. Instead of thinking ‘some incumbents are gonna lose, some startups are gonna win’, startups should be seen as potential partners. Partners to create more value for your company, more value for the consumer, and for the whole industry”*

Consequently, by interacting with them, corporate firms can not only have access to fresh ideas and innovations, but also rejuvenate their internal culture, acquire a more adaptive

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<sup>9</sup> Source: EconomyUp

<sup>10</sup> Index-Venture is a San Francisco based venture capital firm founded in 1996.

and faster mindset to face market changes (Mocker, Bielli and Haley 2015) and innovate classic brands. Furthermore, due to startups' features, working with them also allows firms to develop new products or services to solve business problems in a quicker way with lower risks and costs for their core operations. This last statement is only apparently contradictory, startups are indeed typically associated with higher risk, but the concept is that relying on them to acquire innovative solutions is a way to externalize risk. The importance of startups as partners of innovation in an Open Innovation paradigm is so high that in survey of 2014 by KPMG mentioned in Mocker et al. 2015 88% of corporate respondents claimed that collaboration with startups was essential for their own innovation strategy.

Clearly this is possible only if there is a willingness to collaborate on both sides. On the startup side it often happens that if the costs to enter a market are relatively low and moreover the technological innovation is not strictly protected by patents, the high disclosure risk pushes new ventures to exclude the possibility of selling their ideas to incumbents. Therefore, in this context they typically commercialize their innovations through product market competition. On the contrary, whenever these conditions are not met, startups are more likely to avoid direct competition on the final market, since the option to resort to the previously mentioned "market for ideas" becomes more interesting. (Gans, Hsu and Stern 2001).

In conclusion, the respective advantages that the two parties can achieve are obviously related to the type of interaction they engage in. To identify the main traits of every solution, in the next chapter the most relevant relationships typologies have been deeply tackled and discussed. In section 1.4 instead, with the aim of simplifying the evaluation of each typology, advantages and disadvantages were briefly listed in a framework.

### 1.3 Corporate - startup relationships typologies

The different ways with which companies can enter into a business relationship with startups are down here presented following a progressive scheme: from one-shot relationships with low commitment, to more demanding ones in terms, among others, of financial engagement. The underlying assumption is that, as presented above, startups are these days a strong innovative force in the business landscape, thus it is mandatory for an established corporation to engage with them via one of the following approaches.

In order to give a complete picture of the different types of startup – firm interactions which the two parties can engage in, three main sources were used: “*Winning Together: a guide to successful corporate-startup collaboration*” (Mocker, Bielli and Haley 2015) and “*Engaging with startups to enhance corporate innovation*” (Weiblen and Chesbrough 2015) which provided a wide spectrum of startup-firm relationships used as a basis to establish the array chosen for this chapter. “*Startup as a partner of cooperation for big company in the agri-food industry*” (Klimczuk-Kochanska 2017) on the other hand, provided specific information on the topics of co-development and co-marketing arrangements. The different types of interaction identified thanks to these papers were later enriched gathering information from different sources.

|            |                              | Relationship Typologies |                   |                           |             |              |            |              |
|------------|------------------------------|-------------------------|-------------------|---------------------------|-------------|--------------|------------|--------------|
|            |                              | One-off Events          | Sharing Resources | Accelerators & Incubators | Procurement | Partnerships | Investment | Acquisitions |
| Objectives | Rejuvenate Corporate Culture |                         |                   |                           |             |              |            |              |
|            | Innovate Big Brands          |                         |                   |                           |             |              |            |              |
|            | Solve Business problems      |                         |                   |                           |             |              |            |              |
|            | Expand into Future Markets   |                         |                   |                           |             |              |            |              |

Table 3: Objectives of startup/corporate relationships



### 1.3.1 One-off Events and Sharing Resources

One-off events and sharing resources are solutions relatively less demanding in terms of time and costs to expose a firm to an entrepreneurial mindset, but, given their one-time nature, they do not grant advantages in the short term. At the same time startups have the possibility not only to pick-up knowledge about how to scale up in an effective way, but also to gather industry insights. They are a quite popular options for companies, given that they allow them to reach a broad startup audience for little financial cost, thus showing their commitment to entrepreneurship and innovation.

These events can take place locally (at the company headquarter), internationally but with a local focus (wherever company's offices are), or internationally (even where the company is not physically present) (Mocker, Bielli and Haley 2015). This last typology of activities is of course enabled by web, via free digital tools, while in the case of the first one it usually takes place in co-working spaces under the direct supervision of the company itself.

One-off events and sharing resources can be considered a good first step for all those corporates willing to test their commitment to engage with startups, as well as to gain awareness about innovative technologies at a relatively low cost. Moreover, these solutions are often tightly bound to firms' communications or corporate social responsibility strategies. From this last aspect it is possible to infer that sometimes these activities do not lead to an innovative cultural change, on the grounds that they are detached from companies' Open Innovation strategies and are merely a way to pretend to "follow the trends". (Mind the Bridge and Nesta 2017)

#### 1. *One-off events*

One-off events consist in relatively self-contained events that often take the form of competitions (Mocker, Bielli and Haley 2015). A couple of possible events are:

- ❖ Challenge prizes: competitions in which an institution poses a problem asking startups innovators to provide an effective solution.

Real case: Cisco's I-prize

On 31 October 2007, Cisco, the American well-known global leader in the networking and IT sector, announced a competition open to entrepreneurs and innovators from

all over the world. The winning team would have had the opportunity to join Cisco as founders of a new business unit and possibly, depending on the idea potential, to receive monetary support in the form of a maximum 10 million investment on three years.

Quoting Marthin DeBeer, former senior vice president, Cisco's Emerging Technologies Group: "The emergence of collaboration technologies and the growth of the network are driving a rapid evolution in the way we work. Cisco believes we can open up new idea pipelines by closing those geographical gaps<sup>11</sup> and at the same time infuse new ideas into Cisco's culture of innovation".

In order to be eligible for that competition, ideas, according to the same launch press release, should have had the potential to bring at least \$1 billion revenue to Cisco over a five-to-seven-year period. The challenge was open to every individual aged 18 or older.

As previously explained by Cisco's senior vice president, the company aimed not only at opening a potentially profitable new business unit, but also at fostering Cisco's innovation culture by "feeding" it with new ideas. In fact, even if the latter had not been promising, they could still have been a starting point for new technological developments.

From entrepreneurs' point of view, the competition was a way from one side to get funding and from the other to receive a feedback from business area professionals. In this regard, even if their idea had been rejected, they would have earned expertise and insights about how to improve it.

❖ Hackathons or Hack days:

*"A problem focused computer programming event as well as a contest to pitch program and present instances of prototype digital innovation."*

Briscoe & Mulligan 2014

They are traditionally events developed for coders and creatives which are given a period of time to develop around a goal aiming at solving a specific technical issue.

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<sup>11</sup> This mention refers to a previous part of the interview in which the same Marthin DeBeer claims that the accessibility to funding means by young entrepreneurs depends a lot on their geographical location.

For companies it is a clever way to scout for new ideas. More recently their focus has shifted from specific code developing to a more general solution shaping.

Real Case: British Airways “ungrounded” hackathon

*“Hackathon doesn’t have to be about code, it’s more about the attitude to get things done and making ideas real and getting them in the hands of customers.”*

(Hamish McVey, BA head of brand & marketing)

British Airways hackathons are real-world examples of the recent shift in Hackathons purposes. On one hand, code development is no more the core of the activity, on the other hand, hackathon is not only a matter of ideas generation: prototype solutions are expected anyway.

BA can be taken as an example of a particularly innovative and original way to organize hackathons. In 2013 the airline company arranged an “ungrounded” hackathon on a flight from San Francisco to London. 32 talented entrepreneurs were asked to find innovative solutions to enhance customer experience before, during and after a flight. The idea of putting them directly within the customer journey proved itself a successful way to foster effective solutions. The latter are of course the reason why a company like BA attain advantages from such events, developers instead, besides the fact that they earn money in return for making their ideas exploitable, are helped by industry expert mentors to ground their ideas in reality and test them first-hand.

## 2. *Sharing resources*

Sharing resources can be another way for corporates to innovate their brands. As already mentioned in the introduction, similarly to one-off events they do not provide an immediate return. The key aspect of this solution is to provide entrepreneurs with the means that meet their requirements, by finding out why startups would use certain typologies of free resources. There are two main assets usually shared by companies:

- ❖ Free tools: corporations offer a free or cheaper access to their services, directly or through third parties developed for startups, such as specific digital platforms. Their aim is to build and expand their digital business thanks to the fact that, when startups

use their tools to create new ventures, they simultaneously strengthen the corporates' position in the market.

- ❖ Co-working spaces: Offering physical co-working spaces to entrepreneurs is undoubtedly a more expensive way to provide resources. In this situation startups can either use for free or sometimes rent spaces, desks and other facilities, in a flexible environment whose dynamic leasing terms are tailored made for their ever-changing exigencies. (Mocker, Bielli and Haley 2015).

Real case: Microsoft reactor

Microsoft in February 2018 opened in London, first European location, a new space for startups which belongs to the line-up of Microsoft Reactor hubs, already present in: New York, Redmond, San Francisco, Seattle and Sydney. The latter will offer either free office space to foster startups' growth and host hackathons, competitions and meetups, as well as help from technical and event planning experts.

As it is possible to assume from the following quote, Microsoft strategy relies on the assumption that allowing new ventures to leverage on their facilities, they will be able to “surf” the innovation and not be overwhelmed by it.

"This space is specially designed and located in the heart of Shoreditch to help us connect better with the technology startup and scale-up community, offer access to Microsoft's technology, platform and tools, and connect [businesses] with our enterprise customers and partners," said Microsoft UK CEO Cindy Rose.

### **1.3.2 Startup programs**

These are programs designed with a lightweight governance, in which there is no transfer of ownership between the new ventures and the company managing them. In so doing, a corporation can enter into contact with many startups at once, at the expense of a lower customization per single engagement. They are typically used in parallel with other startups support ecosystems, given their limited offer in tailored made services and support granted. In accordance with the article: “Engaging with startups to enhance corporate innovation” by

Tobias Weiblen and Henry W. Chesbrough, on the basis of the direction to which they convey innovation, it is possible to identify two main types of startup programs:

- Outside-in startup programs: to exploit new ventures' technology for the corporates' products
- Inside-out startup programs: to promote corporates products and establish their predominance, leveraging on their use by startups

### *1. Outside-in startup programs*

The focus of this model is on obtaining useful startups' products or technologies by enabling them to design and realize their ideas. In such a way a company can simultaneously pursue the multiple approaches that "incubated" startups have adopted. In turn, startups have the chance to become suppliers of a given corporation, still retaining later on the possibility to pursue the market they initially had targeted, with an additional well-known customer reference. This project-based approach limits the risk for startups to become dependent on the corporation and does not jeopardize or heavily influence their future.

Operationally, given its interface position, the program has a key responsibility: not only to present a successful prototype at the end of the period, but also, and more importantly since it is the only way to grant an actual implementation, to push on the inside the external innovation. That is to say, that also the program interface with the core business is a highly critical point in this type of approach.

Another important topic is IP management, which can be handled differently according to the industrial context in which the program is employed. There are situations characterized by a natural separation between the technologies of the two sides involved, such as in AT&T case, or others in which a non-disclosure agreement is needed to solve all IP-related issues, for instance when radically new products are involved. (Weiblen & Chesbrough 2015)

Real case: AT&T Foundry

*"AT&T Foundry™ wants to connect with cutting-edge innovators and technologies that will deliver new valuable products and services to our customers. We are looking*

*for technologies that enhance or refine an existing AT&T product or customer experience”*

AT&T website

The program was launched by the U.S. TelCo giant AT&T in 2011 and now it operates in 6 locations (five in USA, one in Mexico and one in Israel). In each area, they offer a co-working space, but, differently from the sharing resources methods, there is a clear target for startups willing to cooperate: building on or refining AT&T products. The Foundry was designed to act as the interface between the extremely large corporation and the dynamic startup world. The entrance into the program is regulated by a selection through the Foundry’s network or via specific calls for proposals. The project is then analyzed and, in around 10% of the cases<sup>12</sup>, the result is a joint project with the Foundry itself, detailed in a two-page document. This entire process is of course executed very quickly thanks to contracting specialists, in order to be as much as possible aligned with startups’ attitude. The deadline of projects inside the Foundry is the same of accelerators, that is to say 12 weeks. There is no equity or IP claims involved and to meet the deadline, every project is tackled by a joint team of Foundry employees and startup members, led by a coach. After 3 months, the result has to be demonstrated to AT&T executives and, whether convincing, the startup becomes a regular technology supplier of the receiving business unit. The Foundry does not limit itself to specific areas of AT&T but works with an opportunity-driven mindset: if a certain project can be applied also outside the area for which it was designed, the chance is taken straight away.

To ensure as much as possible the implementation of a project, avoiding the mistrust of the receiving business unit, the Foundry team tries to involve their representatives in various ways: allowing them to choose the topic of a startup pitch session, inserting some of their employees directly in the team and of course leveraging on the endorsement of top-management.

## *2. Inside-out startup programs*

These models focus is on having startups building their products by relying on corporation-supplied technology, in order to ultimately expand the company market. Hence, here the

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<sup>12</sup> Data from “Engaging with startups to enhance corporate innovation” Chesbrough & Weiblen (2015)

corporation is no more the customer but the supplier, the exact opposite of the previous type of program. The idea is to exploit the supplied platform/technology to take profit from every innovation that is shared through it or by it and the birth of an ecosystem of companies contributing to the creation of complementary products goes into that direction. A veritable example of this phenomenon is the app economy in which Apple iOS and Google Android earn 30% revenue share of every sold app. The idea of providing startups with free access, at least at the beginning, to technologies is the central pillar of inside-out programs. That same “Sharing resources” way of engagement that was tackled at the beginning of this section, leverages on this concept. Given that first startups’ customers incur into a risk when adopting a new ventures’ solution, another effective way to gain predominance is to grant them a free license for a limited period of time. Also for platform startup programs, it is of utmost importance to connect effectively the external program with the corporation’s units. Doing that with a standardized approach can be effective, but to ensure the seamlessness of this interaction, it is still better to have, inside the startup program office, people from every corporate function to link their in-house peers with startups’ members. (Weiblen & Chesbrough 2015).

#### Real case: Startup Blueprint

It is a startup program launched by PayPal in late 2013, aiming at expanding its position as a payment solution. The admission to this program is regulated by 80 partner institutions from U.S. and Europe that basically act as filter, inviting to the open nomination process only their own pre-screened startups. As soon as the new ventures are accepted by Blueprint, PayPal starts assuming a central role in their exigencies collecting money from their customers in a safe and reliable way, even providing them with a personal contact in its technical support team for every doubt or issue. The program also offers mentorship to design the right payment options for every business model. In general, PayPal grants them a free transaction volume of revenue before asking for fees. Of course, PayPal especially profits from the most successful startups in the medium and long term. In theory, there is no contractual or technical lock-in, but, in practice, this effect has a hold anyway, due to the unlikeliness for a growing startup to risk changing its payment provider without a specific reason.

### 1.3.3 Procurement & Partnerships

- *Procurement*

*“Corporates often think they can only engage with startups through corporate venturing, because many misunderstand what startups are. It’s not just the two engineers in the garage! You should think about them but you should think about them as including companies now able to impact a whole industry. They are ready to provide products, help corporates cut costs, be very good suppliers. We want to help corporates understand that working with startups can be a way to embrace innovation today”*

Giuseppe Zocco, Index Ventures

*“Procurement is the process of finding, agreeing terms and acquiring goods, services or works from an external source, via a tendering or competitive bidding process”*

Wikipedia, the free encyclopaedia

The assumption is that procurement is a short-term market transaction even when the product has to be adapted to customer needs. Relationships characterized by a co-development process which binds two players for a longer time will be tackled later on. Besides, in this section only procurement in which one of the two parties is a startup will be addressed. Startups involved in such commercial engagements are typically more mature and if they have undergone a phase of fast growth, they usually take the name of scale-ups. This particular kind of market transaction can provide corporates with the access to state-of-the-art technologies and new business models. Moreover, companies resorting to procurement by startups are typically able to find in an easier way new approaches to tackle business issues or opportunities and if appropriate to incorporate them into their supply chain for the benefit of the final customer. The access to a unique technology is made possible without needing to develop a specific competence inside the company and not even risking the money for an idea that is not sure whether it will succeed.

From the new venture point of view, the acquisition as a customer of a large corporate can often be the turning point in their business life. The importance of this first reference is so high that, in the article named “The factors of making the first successful customer reference



to leverage the business of startup software company”, the two authors Jari Ruokolainen and Barbara Igel repeatedly observe how in a lot of cases, among those belonging to the sample of Thai software industry, the first customer had a crucial importance in influencing the success of a given startup. This happens because the first customer partner shares with the startup its product development and business process knowledge. In addition, working with a large corporation can be an important step since it can test their product-market fit and begin the scaling-up process of their operations. Finally, being able to show investors and the market in general a commercial track record with a recognised brand is an effective way to gain credibility and trust.

However, this does not come for free, large firms in fact have to realize that procurement from startups is often “non-standard”, since the latter have special needs, such as: inability to bear long qualification processes, limited financial resources and differences in typical time-frames.

Therefore, in order to collaborate in a fruitful way, corporates have to adopt a more collaborative mindset and have to rethink procurement processes. According to “Open Innovation in Europe” a research on Startups in Europe, realized by Nesta and Mind the Bridge for Startup Europe partnership (SEP)<sup>13</sup> 24 out of 27 corporates that engage in this type of procurement have set at least one startup-friendly procedure. In particular, 67% of them have a “fast-track option”, 48% special legal templates, 33% dedicated procedures and 26 % other practises, such as: preferential payments conditions or having a full-time contact person within the procurement process. Of course, even with the better conditions, the procurement phase remain a complex and time-consuming process, but easing the roughness perceived by startups is still a good start for a fruitful collaboration.

In general procurement can be either *one-time* or long term and it is typically reiterated whether the two parties involved have been particularly satisfied. Considering the specialty of a procurement carried out by a start-up, which has a higher supplying risk, the initial relationship is almost always short-termed. One-time supplies are indeed less binding relationships and since start-ups, especially in very early stages, can disappear overnight, relying too much on their activity could be dangerous. However, after a first testing phase, firms may upgrade their start-up providers’ status to long term in order to achieve synergies,

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<sup>13</sup> Established by the European Commission in January 2014 at the World Economic Forum in Davos, SEP is the first pan-European Open Innovation platform dedicated to transforming European startups into scaleups by linking them with global corporations and stock Exchanges. (Nesta & Mind the Bridge – 2017)

thus improving the efficiency and the effectiveness of the supply. It is worth noticing that the main difference with the activities which will be tackled later in this chapter is that, in this case, no joint effort concerning marketing or product development is ever involved.

Real case: Telefónica “Fast -track”

As already mentioned above many startups struggle with identifying contacts inside the corporation and lose time because of long and burdensome procedures to become a supplier. Telefónica’s Wayra accelerator in Spain and UK started to solve these issues by providing startups with a company employee on their advisory board, facilitating partnerships and access to “fast-track” procurement. In only 48 hours startups coming from Wayra can register as a Telefónica supplier.

- *Co-marketing arrangements: Co-branding*

*“Co-marketing also called marketing partnership, commercial partnering or more specifically co-branding defines a collaboration among actors of various nature in the form of a joint investment deal about one or more marketing variables”*

Wikipedia, the free encyclopaedia

*“Brand equity is defined as a set of brand assets and liabilities that connected to a brand name and logo deliver the added value to consumer”*

Aaker, 1991, p.15 cited in Dai-Pietrobon 2012

*“[...]co-branding, which occurs between companies with two distinct brands marketed together to form a unique composite offering that adds value for the consumer”*

Prince and Davies 2002

A Co-marketing alliance is a lateral relationship between companies usually at the same level of the value-added chain and can be considered a form of “symbiotic marketing” (Adler 1966; Vardarajan and Rajaratnam 1986 cited in Bucklin & Sengupta 1993). This strategy requires resources to be shared with a partner firm, which typically serves the same audience, to increase the market share or refresh the brand perception. The levers on which

companies can leverage in a co-marketing campaign are the four Ps: product, price, place and promotion. Co-branding can be considered a particular type of co-marketing inasmuch as it involves only the product lever. In a co-branding deal in fact, a new product or service is released under the brands of both companies. In spite of this fact, given the nature of startups in which product, brand and the “firm equity” itself are tightly bound in a whole, this master thesis looks at co-branding with a wider perspective, in such a way that co-marketing and co-branding concepts merge together. On paper, co-branding is an association of two brands for commercial purposes. There are roughly two main possible types of brand that can be used for this purpose: corporate brand and product brands. The key distinction between the two is that the latter focuses on the product and influences consumers, while the former is managed at strategic level and has a different scope. In fact, unlike product brands, the focus of corporate brands is on all the internal and external stakeholders and networks, it is based on a broader mix than the traditional marketing mix and it is typically experienced and communicated through total corporate communication rather than simply via marketing communication mix (Balmer 2001 p.6). Given these radical differences, strengthening a corporate brand requires a completely different approach than the one needed for product brands.

Nonetheless, startups typically have only one product thus the two concepts overlap and moreover it is not possible to build on the product brand if there is not yet brand equity. Therefore, when new ventures make an effort to strike a co-branding deal, they are looking for a way to develop their brand equity and increase their customers base. This has an effect on their selection of potential partners for the marketing deal: only companies with medium/great brand equity and with which they have a fit in terms of expectations and objectives are taken into consideration. An example can be a Telco company, which has typically a great brand equity due to their massive effort in advertisement to increase visibility in the mass market.

The advantages for the startup, besides the already mentioned customer base increase and brand equity development are: the possibility to benefit from the larger amount of marketing campaigns that an establish company can afford and the chance to enter a new market and the opportunity to acquire credibility. Furthermore, in general, they get access to the other company database of customers and gain insights of a real business landscape. (Dai-Pietrobon 2012 - Thesis).

The advantages for the leader brand, which has to be the stronger one, are less pronounced. First, they can offer their customers a new product/service for free for a given period of time or at least at a cheaper price, with no extra expenses in internal development.

Even if the advantages seem to be limited for the stronger brand, it also true that, in any case, the level of brand equity of each co-brand is higher than the sum of both brands before the association (Keller 2008 cited in Dai-Pietrobon 2012 and Rao and Ruekert 1994, p. 1). That is to say that a positive marketing effect can be still attained. Nonetheless, if it is true on one hand, quoting Washburn et al. (2000), that co-branding is a win/win strategy for both co-branding partners, regardless of whether the original brands are perceived by consumers as having high or low brand equity. It is also obvious on the other, that the stronger brand cannot improve his brand awareness as it is done by the weaker one, whenever already possessing a well-established, long-standing positive image.

Another possible effect of this marketing arrangement is on the perception of the established brand, which can be highly recognisable, but at the same time perceived as not innovative by customers. By engaging in a co-branding deal, it is possible instead to retain that image in the eyes of consumers, attracting again new customers, business partners and young employees. As it has been stated by Washburn et al. (2000) indeed “the act of pairing two brands, regardless of their initial perception, implies a more positive image to consumers”.

As it is shown in this section, co-branding offers a lot of advantages for both parties, but to have a successful partnership it is particularly important the choice of the partner itself. In this regard, Prince & Davies (2002) and Bucklin & Sengupta 1993 claim that its success is influenced by both the product and brand fit. Up to the point that a poor fit will cause a negative spill-over effect on how the co-branded offer is perceived. This match depends not only on the alignment between each partner’s objectives and needs, but also on the positioning of each one of the brands involved.

Concerning the risks, they are mainly not tangible, such as the low chance that one of the two partners incurs into a scandal, an event that would damage the other by extension. Alternatively, worth to be mentioned, it is the risk of investing in a partnership more than what will be earned from it (Dai-Pietrobon 2012). One more possible danger comes from the fact that consumers, using the additional product/service and experiencing issues, might shift their dissatisfaction towards the other brand. So, we can say that the risk is related to

the fact that a co-branding deal with an untrustworthy partner can lead to a loss of brand equity (Washburn, Till and Priluck 2000).

Regular co-marketing arrangements bring with them also the threat related to the potential competition between the two partners in other product lines or in those directly covered by the alliance. In this scenario the alliance may be seen only opportunistically as a mean to gain market position and technological skills at the expense of the other (Bucklin & Sengupta 1993). However, in a context of a startup/firm relationship this risk is defused by their many differences in terms of product lines, customer base and target market. The new venture and the established firm typically have way diverse offers with complementary product which are thus not competing with each other.

Another topic that needs discussion is about the countermeasures that have to be deployed whenever there is market volatility. According to Davies and Prince (2002) if consumers in a market are particularly subject to changing values, the risk of making a deal increases and the potential return decreases, since the reasons behind the deal in the first place could not be valid anymore. In the moment in which the ratio risk on potential rewards increases or it is no longer stable, a risk-averse partner might be inclined to start lowering the investment needed, jeopardizing the future success of the partnership. A possible solution to this last issue is to draft a co-branding contract flexible enough to modify each partner's effort according to the changing situation.

Co-branding arrangements typically last from six months to a year, sometimes with rolling term contracts which allow after a testing period to decide how and whether to keep on with the agreement (Prince & Davies 2002).

#### Real case: Spotify and Coca-Cola

Spotify and Coca-Cola announced their partnership on 19<sup>th</sup> April 2012. From one side Spotify could leverage on the fact that the beverages giant sells in more than 200 countries to open up its international market and even to earn some marketing insights. In fact, Coca-Cola as part of the agreement had committed to promote Spotify in paid media and through its massive distribution network, for instance offering access codes on packaging. From the other, Coca-Cola earned from Spotify the technology and tunes for its online marketing, being for instance allowed to share music on the Facebook page without having to negotiate individual licenses. In addition, Spotify has been the core of the Coca-Cola's "Year of Music"

marketing campaign in 2013 aiming at growing the company's pi among teens, a demographic group that was expected to rise sharply.

- *Co-development*

Co-development or Joint development, which is usually included in the wider range of strategic business partnerships, refers to a joint development of products and services via sharing resources such as labour, capital and intellectual property. As concerns the topic of Corporate-Startup collaboration, it usually takes the form of a joint effort between corporate and startups to tackle a business problem of the corporate firm or of one of its clients.

The main idea which lies under co-development approaches is that the joint definition of objectives and technical specifications of products or services can lead to an efficiency improvement, by significantly reducing R&D expenses, and to an effectiveness one, by expanding innovation output of product/service development (Mocker, Bielli and Haley 2015).

We can identify three main critical success factors for co-development partnerships in case of corporate-startup collaborations:

- Clear objectives defined by the corporate firm
- Pre-designated budget
- Clear time-frame, specifying the time-span of the collaboration

The co-development solution is often implemented when a startup has unique competences but does not have yet a ready-to-sell product. In fact, a startup in this situation needs to launch large-scale production of their newly developed product and corporate firms can provide that very easily (Klimczuk-Kochanska 2017). Moreover, thanks to this kind of partnership, startups can access the large network of professionals which corporate firms have and fine-tune their innovation. On the other hand, the large corporation gets a newly developed product, service or technology, without having to develop it inside.

The table below shows the possible objectives related to the implementation of co-development partnerships, the business requirement they need and the conditions they imply.

| <b>Objective</b>               | <b>Business Requirement</b>                            | <b>Implication for Co-development Design</b>                                |
|--------------------------------|--|---|
| Increase profitability         | Lower cost   | Increase volume to spread fixed costs: partner for less-critical components |
| Shorten time to market         | Incorporate already-developed components or subsystems | Seek partners with proven capabilities                                      |
| Enhance innovation capability  | Increase the number/variety of front-end technologies  | Create strategic research partnerships with universities, research labs     |
| Create greater R&D flexibility | Share risks with partners                              | Develop research partnerships in bottleneck areas                           |
| Expand market access           | Broaden the pathways to market for products/services   | Leverage partner's complementary R&D to tailor offerings for new markets    |

*Table 4: Chesbrough et al. 2007*

Joint development can also be the first step of the implementation of a stronger type of collaboration: Joint Venture. In this last case, co-development has taken a step further, merging resources into a new legal entity, with its own business processes and governance structures.

#### Real Case: Mercedes Benz

Mercedes Benz is an example of corporate firm which has recently implemented a co-development partnership program addressed to new ventures. Through its Startup Advance Challenge, it has recently collaborated with startups on the development of hardware and software prototypes, under the wide objective of improving the last mile transportation of goods and services.

Startups and Mercedes Benz jointly work to develop those prototypes, such as in the case of N-Fleet. The latter is a Finnish startup, working on multimodal transportation, that developed a software which takes the list of vehicles a firm or individual possess and the

tasks they should perform and then combines them immediately into an efficient loading and transportation plan.

### **1.3.4 Business support: accelerators & incubators**

*“These tools allow them [corporates] to engage with early-stage startups either over a relatively lengthy period of intensive business development or through a shorter-term structured curriculum”.*

(BCG 2014, Incubators, Accelerators, Venturing, and More)

Corporates usually offer startups various forms of business support programmes, in this section the focus will be on accelerators and incubators. These programmes from one side help the growth of early-stage startups, making them ready for investment, market entry and scale, but from the other are even effective ways to foster corporate cultural change and internal employees’ learning by engaging them as mentors. It is still unclear whether they should be run directly by corporates or not. According to the same research of Nesta<sup>14</sup> and Mind the Bridge<sup>15</sup> mentioned above: 52% of companies ran at least one accelerator in 2016, a significant proportion of which even more than one all over the world. However, only 38% of them ran in house, while the same percentage relied on third party specialists to have it done. Finally, 23% of them ran both an in-house accelerator and had one or more outsourced programs. This strategical choice is linked to corporates’ desire to cover more geographical or business areas. An interesting insight that can be extracted from that survey is that there is a growing trend in outsourcing acceleration programs. In any case, it is fundamental for their success that these business support programs are designed according to startups needs and not only looking at the corporate host advantages.

In the introduction about Open Innovation it was underlined how it is not plausible that all innovations stem from the inside. In the same way, however, “not all smart ideas and promising technologies are found out in the wild” (Weiblen & Chesbrough 2015) and this emphasizes the importance of being able to extract value from every promising idea.

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<sup>14</sup>Nesta (formerly NESTA, National Endowment for Science, Technology and the Arts) is an innovation foundation based in the UK. The organisation acts through a combination of practical programmes, investment, policy and research, and the formation of partnerships to promote innovation across a broad range of sectors.

<sup>15</sup> Mind the Bridge is a global organization, based in Silicon Valley, that provides Innovation advisory services for corporates and startups.



Nonetheless some of the latter might not fit with the core business of the company. In this matter the choice of having an external corporate incubator or accelerator can be the solution: an effective way to profit from these non-aligned cases of internal innovation allowing them as well to express their potential. In this particular case, the new venture, whether successful, can be ultimately let free to gain market shares autonomously or re-integrated as a separate division.

The following graph has been realized in order to clarify the major differences and similarities between the two business support types dealt with in this thesis. Each one of them will be covered in depth in the next two paragraphs.

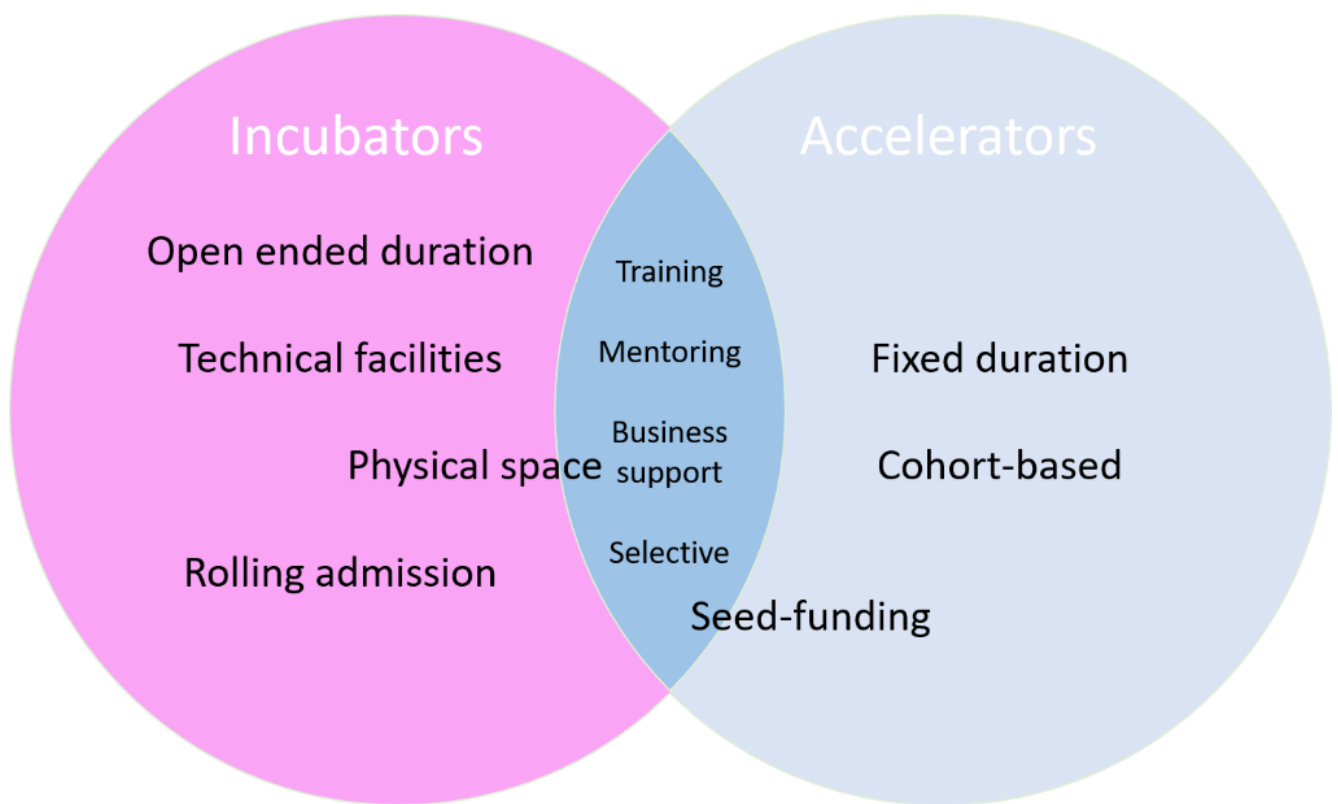


Figure 5: Comparison between Incubators and accelerators

### 1. Business incubators

*“Incubation is a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small businesses by supporting them through the early stages of development and change”*

(Former UK Business Incubation association, 2013)

They can be defined as company-supported flexible working spaces with additional value or added services such as centralized legal or marketing support (Mocker, Bielli and Haley 2015). Other benefits for startups include business skills training, exploitation of a professional network and management support. Some of these business support hubs generate a modest profit, but according to many incubators' managers, for a better effectiveness, the latter should be cost-neutral or even subsidized by a host organization. This tool allows companies to support a group of startups to help them grow for a maximum of three years. Usually they are still in an early-stage in which the business is still not defined and need help to develop. In exchange, sponsoring companies can decide to make equity investment up to 25% (BCG 2014), from one side providing new ventures with the cash they need, from the other gaining a privileged position for a future acquisition. The alternative "payment method" for the incubator that is responsible for orchestrating resources and services among the different partners is to charge them for rent or membership fees on a monthly basis<sup>16</sup>. The choice of asking for money instead of taking equity enables incubators to support not only businesses with a rapid growth, for which the increase in the equity value covers the costs, but also those ventures which need more time to scale-up and whose value is steadier in the early phases. However, in corporate incubators which are the focus of this thesis the choice falls usually on the first option (Brigl, Roos, Schmiegl and Watten 2014), thus from now on that will be the reference attribute. The entrepreneurs selected have important interaction with their sponsors both at corporate and business-unit levels. The company that is directly or indirectly managing the business incubator has the possibility to partially outsource the R&D function by leveraging on the technological novelties brought by startups, to screen future investment possibilities and to improve the employees' recruitment.

According to the paper realized by Nesta "Business incubators and accelerators: The national picture" incubators can be defined by the following characteristics:

- Open-ended duration (exit usually based on the stage of the company, rather than a specific time frame)
- Focus on physical space over services
- Admissions on ad-hoc basis (not cohort-based)
- Provision of services including mentorship, entrepreneurial training

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<sup>16</sup> Dee et al., 2015; Aerts et al., 2007 cited in Bone, Allen and Haley 2017

- Often provide technical facilities such as laboratory equipment
- Selective admission (but typically less so than accelerators)

Finally, worth to mention is a new model of incubator the so called: “virtual incubator”, which focuses only on the provision of services without physical spaces or infrastructures.

Real Case: Rabobank

*“Let’s just do a test. They can be a failure, but at least you have data where you can make better decision to move forward. This is a winning approach as it saves money and time both on the startup and on the bank side.”*

Harrie Vollaard, Head of Innovation at Rabobank.

Rabobank runs international wholesale and banking activities within and outside Europe. This firm has been recently engaging in startup programmes to foster internal culture change and learning, capture new trends in technology innovation, collaborate with startups and find possible new business models. As a hybrid solution, Rabobank does not manage these programmes directly, but chooses to engage with startups through a strong partnership with independent incubators and accelerators. Programmes are managed by independent players, but Rabobank provides coaching, business feedback and financial advice to startups, through its human resources. Therefore, they have adopted an “outsourcing” approach towards business support, which is perfectly aligned with the trend identified in “Open Innovation in Europe” (Mind the Bridge and Nesta 2017). Moreover, Rabobank Innovation Department is always in search of new possibilities to build relationship with startups, especially in cities where fintech ecosystems are stronger. Besides helping Rabobank develop a culture about future trends and technologies, some collaboration between Rabobank and startups where particularly successful. An example is Sparkholder, a Dutch startup whose business model focuses on providing reliable information about non-listed companies to banks and investors, whose product proved particularly useful for Rabobank.

## *2. Business accelerators*

They are typically used to foster innovation within corporates and require more resources commitment than the previous solutions. As a matter of fact, they lead large firms to be exposed to new technological trends and are even a way to convey an entrepreneurial mindset to the corporate culture. Inside accelerators, startups can access mentorship, education and other resources such as office space, technical support, startups networks and funding sources. Thanks to accelerators instead, corporates become able to screen through highly selective processes, a large group of startups focused on a particular technology or region. Differently from incubators, here support is provided through a fixed business development curriculum with a shorter-term horizon, typically three months (Brigl, Roos, Schmieg and Watten 2014). Moreover, the new ventures that are chosen by accelerators are usually already close to the market entrance and the sponsor assisting them in that direction. In return the latter gain early access to promising ideas and companies with a “first pick” potential. The latter for a limited period is supported intensely to help them test and iterate their business models. At the end of the acceleration path, startups are typically able to present themselves to investors. The interaction at the corporate and business-unit level for this typology of support is quite limited.

In terms of acceleration models, there is not a homogenous approach, they can be directly run, outsourced, “equity free” and so on. This situation is due to the great differences among players that nowadays establish acceleration programs, from venture capitalists to public institutions. Clearly, different organisations have diverse missions, selection criteria, funding models and success metrics, hence the heterogeneity in question. The focus of the thesis is on corporate accelerators, in which according to “Business incubators and accelerators: the national picture” of Nesta it is quite common that companies do not invest in sponsored ventures, or on rare occasions acquire small equity stakes, around 5%, to lock-in future access to a particularly promising startup. This is due to that fact that, as already anticipated at the beginning of the paragraph, corporates usually have broader strategic reasons to sponsor strategic accelerators such as fostering internal innovation, changing internal culture, marketing or corporate social responsibility (CSR). Nevertheless, for the sake of completeness, it should be stated that the popular way to ensure the economic survival of an accelerator is to acquire equity from the startups. This means that typically the screening of new ventures differently from incubators is more growth driven, aiming at producing companies that scale or fail rapidly to minimise wasted resources.

In accordance with the above mentioned Nesta paper that exploited the work of Miller & Bound (2011) and Cohen & Hochberg (2014) for this classification, an accelerator is characterized by:

- Fixed duration programme (usually between three and twelve months)
- Often provide seed funding
- Focus on services over physical space
- Admission in cohorts
- Provision of startup services (e.g. mentorship, entrepreneurial training)
- Highly selective

Similarly to incubators, also for accelerators it is possible to remark the existence of virtual variants offering only services that can be provided remotely, given the absence of a physical common space.

Real Case: Microsoft

*“We want startups to thrive – if we help these future business leaders be successful, they become some of Microsoft’s strongest advocates.”*

Rebecca Duffy, Global Program Manager at Microsoft

Since 2008 Microsoft has started promoting different programmes to support startups growth. This kind of support goes from offering digital platforms access to new ventures, as in Microsoft Bizspark programmes, to providing physical working spaces, boot-camps and seminars, as in 100 Microsoft Innovation programmes. As concerns accelerators, Microsoft runs seven of them, which usually last between 3 to 6 months and are based in Paris, London and other big cities around the world. In Microsoft, programmes are completely managed by the Developer Experience group, and provide startups with mentoring and support by Microsoft business leaders. Moreover, all programmes are led by entrepreneurs, hired as ‘CEO in Residence’: according to Microsoft this guidance choice helps overcoming the issues which a corporate may bump-in while approaching startups. This is mainly due to the fact that they have the right attitude and mind-set: they run an accelerator through feedbacks and iteration to tailor programmes to new ventures’ needs.

As a good example of Corporate Accelerators, Microsoft ventures do not take any equity in return for the services provided; Andy McCartney, the CEO in Residence leading Microsoft ventures explains why:

*“The worst thing a corporate can do is to take equity, before the startup has even raised some money. For Microsoft, direct financial return is much less important than partnering and being associated with successful new companies. When startups like Gateway Interactive, a young gaming startup that participated in Microsoft Ventures, launched its game on Xbox One, Microsoft gained significant brand exposure and visibility. Seeing a great startup you helped build being on stage at TechCrunch Disrupt after three years is better than any cheque”.*

### **1.3.5 Investment (CVC)**

Firms can alternatively engage with startups through investment. The latter on one hand can be a way for companies to access new markets, but on the other allows them to acquire capabilities and innovations in a cost-effective way (if compared to internal development). Moreover, through investment corporations usually get preferential insights, potentially useful in the future to fully acquire a particularly interesting startup.

Investment in new ventures is often referred to as Corporate Venturing, a practice that can be managed in two different ways. The firm can either manage corporate venturing arms as subsidiaries or contribute to corporate investment funds which are jointly supported by public and private actors. (Mocker, Bielli and Haley 2015)

Investment can provide direct financial return and increase in profits. However, the biggest part of the advantage provided by them is strategic, in fact the interaction with innovations and new technologies allows firms to learn by and exploit them. Corporate Venturing Funds should not in fact pursue only or primarily financial goals, but they should monitor constantly indicators related to the strategic gain coming from investment in new ventures, possibly finding ways to enhance it. A possible example for this is to foster the development of complementary products by supported startups or the choice to invest in startups already doing so.

Significant advantages can stem from this kind relationship for startups too. Startups gain

capital, but also technical and market insights. Moreover, being corporate-backed grants easy access to: market, experts and professionals, testing facilities and other specialized equipment of a firm.

It is worth mentioning, however, that this kind of relationship may also bind too much startups, preventing them from pivoting or collaborating with competitors of the large company they are supported by. So, Corporate Venture must leave as much as possible freedom to new ventures, while pursuing the maximization of corporate strategic objectives.

As concerns the Corporate Venture Capital process, it is important to say that it is a time-consuming and costly process with different phases:

- Scanning of potential investment candidates
- Due diligence prior to making an investment
- Monitoring
- Identifying possible Exits

Involvement of shareholders is also fundamental: they might not accept a venture arm which invests in startups for financial return only, and typically want to manage their portfolio through their own policies. What is fundamental in this case, it is showing to shareholders all the potential benefits, both financial and strategic, which could stem from the investment. (Weiblen & Chesbrough 2015)

According to “Open Innovation in Europe” a research on Startups in the European Community, realized by Nesta and Mind the Bridge for Startup Europe partnership (SEP), in 2016 of the 70% of corporates that made investment in Startups, half were direct investment, the other 50% was carried out through Corporate Venture Capital. Corporates in EU invested on average in 3.5 startups each, and the most important sectors for investment in startups are finance, utilities and telecommunications.

Real case: BMW - iVentures

*“[...] we might kill them with our larger processes, which focus on producing and selling cars and not necessarily services. To not overload our startups with heavy due–diligence, we try to be more relaxed about things like reporting and key performance indicators.”*

Tony Douglas, Innovation Manager at BMW

BMW's approach to the engagement with startups can be an example of corporate venturing. Its subsidiary iVentures is responsible for investment in startups, especially those related to digital sector, enabling the parent company to improve its value proposition in mobility services. In the case under consideration iVentures depends directly on the Mobility Services Unit.

Investment in new startups is fundamental for BMW to get access to new markets and to improve its brand strength. An example is Just Park startup: BMW started investing in this new venture which provided a platform service for parking rent, linking people who had a free car park, to people in need of it. BMW had in this case the opportunity to enter a mobility service market segment, which is on one hand new and innovative and on the other coherent with its strategy in mobility service.

The creation of BMW iVentures as a separate unit managing investment has an important *raison d'être*: protecting the portfolio of startups in which BMW has invested from its cumbersome structure and longer processes, a typical trait of large firms.

Startups are also monitored through flexible performance indicators and no heavy due-diligence is applied.

Real case: KPN – ACTILITIVITY

KPN, a landline and mobile telecommunication company, in 2015 started investing in Actility through its Venturing arm KPN Ventures. Actility was an Internet of Things startup developing IoT connectivity platform, tools, and fast-growing ecosystem solutions to transform business, industries and processes.

Advantages stemming from this kind of relationship were significant for both parties. KPN, thanks to Actility, technology, was able to launch the first nationwide LORA-based Internet of Things network. On the other hand, Actility, thanks to KPN's funding and network, was able to become one of the fastest growing startups in France.

### **1.3.6 Acquisitions**

Acquiring a startup is a possible subsequent step to an initial investment by which a company starts earning some rights for what concerns decision making. If this process is



carried to the conclusion, the investment of a company in a startup becomes so significant that the latter falls under its control.

Acquiring a new venture is a quick way to gain possession of specific complementary technologies and capabilities and usually also a preferential access to new markets. Moreover, it can be a strategy for developing new product or service lines where the company has not been operating. For big firms, acquisition may also be a risk management lever: a company may decide to buy a startup which could become a potential competitor in the future to strengthen its long-term market position. (Klimczuk-Kochanska 2017)

### Real Case: Frutarom – Algalo

This case can be an example of the last proposition: Frutarom is a world leader company working in the flavors and natural fine ingredients market. While Algalo is a new venture, whose business model relies on a unique and innovative method for cultivation, harvesting and processing of food and cosmetic ingredients. In 2016, Algalo has been acquired by Frutarom: its acquisition granted the latter the access and control of that innovative method for ingredients processing. This decision resulted in the possibility for Frutarom to implement a rapid and profitable strategy based on the exploitation of quality ingredients, managed from the cultivation to the consumption. By acquiring Algalo, on one hand, Frutarom gained access to an innovative technology which resulted in an improvement of its value proposition in the specialty ingredients market. On the other hand, the world leader company prevented Algalo from becoming a potential competitor in the future. The gain on Algalo side was, beside funding of course, the access to the network of Frutarom's professionals and experts.

#### *1. Acqui-hiring*

*“Facebook has not once bought a company for the company itself. We buy companies to get excellent people”*

Mark Zuckerberg, Facebook CEO

Acqui-hiring is a specific type of acquisition practice, which focuses on the acquisition of people and talents from a startup, rather than technologies or products and services.

The practice of Acqui-hiring is extremely diffused in the digital sector, where competences, such as programming skills, are highly transferrable between companies. It usually means acquiring a team of human resources which proved particularly successful as a new venture. Especially when these acquisitions are made at early stages, a phase in startups' life in which they still lack a defined product or a business model, Acqui-hiring is the obvious solution: the assets bought indeed are human resources and their talent. (Klimczuk-Kochanska 2017)

#### Real Case: Facebook – Vidpresso

Vidpresso is one of the many companies Facebook has acqui-hired. In August 2018, the team behind Vidpresso, an interactive video startup, has been hired by Facebook. The company itself was not bought; people and technology were. Advantages however came on both sides, as Vidpresso team explained: “By joining Facebook, we’ll be able to offer our tools to a much broader audience than just our A-list publishing partners. Eventually, it’ll allow us to put these tools in the hands of creators, so they can focus on their content, and have it look great, without spending lots of time or money to do so”.

## 1.4 Critical evaluation of the different relationships

In this second section of the thesis the aim is to critically analyse the abovementioned typologies of engagement by extrapolating their pros and cons from articles and case studies. The intention is to offer a simplified framework to support the choice of those companies willing to establish a relationship with one or more start-ups. The information used to build this section comes from the same articles that were employed to identify the different relationship typologies.

### 1.4.1 One-off Events and Sharing Resources

#### 1. *One-off Events*

##### ADVANTAGES

- **Cheap solution:** The expenses to put in place this solution are moderate/low. They are mainly related to advertisement and to the set-up of the whole event
- **Possible cultural modifications:** due to the interaction with new ventures driven by an entrepreneurial mindset
- **No long-term commitment required:** the involvement of the company ends as soon as the event reaches its conclusion
- **No complicated organisational structure required:** The event does not need governance or other long-term organisational superstructures
- **Reaching a broad startups audience:** these events are usually open to every person with the necessary skills
- **Corporate image improvement:** these events show the commitment of the corporation for what concerns Open Innovation and new ventures, improving its image in the eyes of the general public
- **Gaining awareness about new technological trends:** coming into contact with new ventures or single developers, companies can keep under control the direction towards which the present-day innovation is going

- **No customization of the relationship:** since it is designed as a call for everybody possessing the ability to answer to the requests, there is no need for additional expenses to manage separately the different relationships

#### DISADVANTAGES & DUTIES

- There is **no short-term impact on business relationships** with startups
- **Risk of not having any cultural change:** if these events are organized just for image purposes and are thus detached from an Open Innovation strategy, they do not lead to any cultural shift
- It requires a **careful consideration of the general needs of the startups:** even though the event is unstructured, there is still the need to take into account main startups' traits to ensure a successful outcome
- The non-startup-specific way of engaging can sometimes lead to a negative outcome, due more to a lack of trust and communication than to a veritable inability to solve the proposed issue

#### 2. *Sharing resources*

#### ADVANTAGES

- **Strengthening of the corporation position in the market:** By sharing technologies and programs for free with startups, companies can leverage the latter to expand their digital businesses and keep their pivotal position
- **Possible cultural modifications:** more likely to happen in “Co-working” than in “Free Tools”
- **Gaining awareness about new technological trends**

#### DISADVANTAGES & DUTIES

- There is **no short-term impact on business relationships with startups**
- **More expensive than one-off events:** especially for what concerns “Co-working Spaces”, even if part of these costs can be covered by small fees
- **No assurance of a tangible gain** from a “Sharing Resources” approach, especially in the case of “Free Tools”

## 1.4.2 Startup programs

### 1. *Outside-in startup programs*

#### ADVANTAGES

- **Lightweight governance:** in these programs the organisational structure is usually quite simple
- **Pursuit of multiple approaches:** “incubated” startups have many diverse viewpoints and approaches
- Possibility of **implementation in parallel with other support ecosystems:** given their leaner structure they can be used in parallel with more complex engagement approaches
- Possibility of obtaining a **supplier able to offer the needed product/service** instead of having to invest money for internal development
- **Lower risk compared to internal development:** engaging with many startups is less expensive than investigating in several innovation directions

#### DISADVANTAGES & DUTIES

- **Low customization of the interaction with startups:** There is not a specific course for each startup, but the situation is still better than the previous examples. In fact every startup can typically develop its own idea about various topics
- In certain industrial domains a **contract managing team is required** to handle pre-emptively possible IP issues
- It is required to activate **countermeasures to avoid NHI syndrome**

### 2. *Inside-out startup programs*

#### ADVANTAGES

- **Lightweight governance**
- **Pursuit of multiple approaches**
- Possibility of **implementation in parallel with other support ecosystems**
- Possibility of becoming the **central hub of an innovative ecosystem:** in the moment in which startups start building on the corporation technology or digital

platform, the latter becomes inextricably linked with the new innovative environment

#### DISADVANTAGES & DUTIES

- **Low customization of the interaction with startups**
- **It is required to connect the external program with the internal business units** to ensure the effectiveness of the program
- A partial disadvantage is that the company has to **offer every new venture a product/service for free** and if the latter do not succeed the investment does not pay back

#### 1.4.3 Procurement & Partnerships

- *Procurement*

#### ADVANTAGES

- **Short-term market transaction:** there is no need for a long-term commitment
- The **risk is considerably lower** than engaging with startups with other approaches, since new ventures in this phase are typically more mature and reliable
- **Access to state-of-art technology:** startups usually rely on innovative business models and pioneering products/services for their survival. Moreover, their risk acceptance level goes well beyond the threshold that a corporation can accept in its internal innovation process, so the likelihood to make important breakthroughs increases
- **Possibility to “borrow” new approaches** for problem solving
- **Less money required** than the one needed for internal development
- **Less risk taken** than the one faced for internal development
- **No need for new competences development** and interiorization

## DISADVANTAGES & DUTIES

- Despite of the short-term nature of the deal, the characteristics of the startups make sure that a **proper dedicated architecture has to be laid down** in order to effectively engage with them as suppliers
- **More collaborative mindset required:** even if it is not a co-development process, a supplying relationship with a startup still demands a more collaborative behaviour than the one kept in traditional procurement
- Possible **need for a full-time contact person** for each new venture supplier
- *Co-marketing arrangements: Co-branding*

## ADVANTAGES

- **Possibility to provide customers with an additional product/service** marginally for free or at a cheaper price
- **No extra expenses in internal development**
- **A positive marketing effect can still be attained:** the level of brand equity of a co-brand is higher than the sum of single brands equities before the association (Keller 2008)
- **Win/win strategy:** regardless of the initial customers' perception of brands
- **Repossession of an innovative brand image:** Being well-known and established does not mean being perceived as innovative. Associating with a successful young startup can be a way to improve the company image in the eyes of customers and relaunch its potential to attract young employees and business partners
- **Short-term arrangements with a rolling horizon:** drafting flexible contracts is possible to reduce risks and adapt marketing efforts according to the changing environment

## DISADVANTAGES & DUTIES

- **Not all the companies can engage in this type of relationships:** it is possible only if the brand of a company is very well-known in the mass market, with a medium/great brand equity

- **Limited array of possible partners:** it is required a very good match between expectations and objectives of the two parties and compatibility between the two products/services under consideration
- **Unbalanced improvement of brand awareness:** the stronger brand is already well-established, so it is unlikely to get the same awareness advantages of the weaker one (startup's)
- **Possible spill-over effect:** If the match is perceived as poor by customers, the outcome is a negative spill-over effect on how the co-branded offer is perceived
- (Low) **Chance that one party ends up into a scandal** damaging the other by extension
- **Risk of overinvestment** compared to the co-branding deal earnings
- **Risk of unreliability of the partner offer:** if the performances of partner's product/service turn out to be poor, the customer might shift his dissatisfaction towards the other brand
- **Establish measures to counter the market volatility:** if the values relevant for consumers in the market are not stable, the risk of making a deal increases. Therefore, a risk adverse partner might be inclined to lower the investment necessary for the proper functioning of the deal
- *Co-development agreements*

## ADVANTAGES

- **Efficiency improvement:** by reducing R&D expenses
- **Effectiveness improvement:** by expanding innovation output
- It can be a **test bench for the implementation of a stronger type of collaboration:** such as Joint Venture
- The starting point of the joint development is typically a **ready-made technology/product** based on a solution which was not available so far



## DISADVANTAGES & DUTIES

- Its success depends on the **definition of clear rules of the game** by the company, in terms of budget and time-frame. However, sometimes, this could scare away startups if it is done in an improper way
- **Unbalanced spending power:** The startup has by definition a continuous hunger for money. That is why in a co-development process, especially for really important projects or specific sectors characterised by massive investment (e.g.: drugs sector), the contract has to consider such unbalance and try to smooth it by introducing corrective factors, such as opt-out options (22)

### 1.4.4 Accelerators & Incubators

#### 1. *Incubators*

## ADVANTAGES

- **Possible cultural change**
- **Learning for employees** by engaging them as mentors for the incubated startups
- **Possibility of outsourcing of the incubators system:** lowering risks and costs and exploiting professionals' expertise
- **Possibility to follow the growth of different ventures** and ultimately re-integrate some of them as new business units
- **Possibility to earn a modest profit**, even if it is not recommended for corporate incubators
- **Privileged position for acquisition:** equity investment to support startups growth become a way to move forward the future complete acquisition
- **Way to partially outsource R&D function:** using startups novelties to foster new product development
- **Virtual incubators lower corporate incubators costs** for management and organization

## DISADVANTAGES & DUTIES

- **Incubators have to be designed tailor-made on startups' needs**
- **Long-term structure and commitment:** Corporate incubators require important investment and long-term commitment, as the only way to ensure effectiveness and success of the engagement approach
- **High expenditures:** Implementing a corporate incubator implies important expenses to develop an organisational superstructure and even some time to acquire the necessary competences

## 2. Accelerators

### ADVANTAGES

- **Possible cultural change**
- **Gain access to promising ideas and technologies**
- **Shorter time horizon** if compared to business incubators, so quicker results
- **Access to more “mature” startup** already close to a market launch phase
- **Focus on the specific technology** which the corporate firm is interested in

### DISADVANTAGES & DUTIES

- **More resource commitment** if compared to incubators. Corporate firms provide mentorship, education and working tools
- **Startups selection and monitoring costs**, which are faced directly in a corporate accelerator or indirectly in terms of a fee via an external accelerator

## 1.4.5 Investment (CVC)

### ADVANTAGES

- **Possible cultural change**
- **Cheaper solution and less risky**, if compared to **internal development** to gain access to innovative technologies
- **Possibility to access new markets**
- **Possibility to increase financial returns and increase profit**

- Possibility to foster within the supported startups, the development of **products and services complementary** to the ones of the Corporate Firm
- **Privileged position for acquisition:** preferential insights gained can be potentially useful in future times to acquire completely a successful startup

#### DISADVANTAGES & DUTIES

- **Time-consuming and costly process** of startups selection
- **Due diligence** to be applied
- **The monitoring process has a relevant cost** and it has to be carried out both from a financial and strategic point of view
- **It is necessary the involvement of shareholders** that typically want to manage their business portfolio autonomously, therefore they need to be convinced about the soundness & potentiality of the startup
- **High expenditures** for long-term relationships in terms of process and/or roles

#### 1.4.6 Acquisitions

##### ADVANTAGES

- **Possible cultural change**
- **Strengthen market position**, by acquiring potential future competitors
- **Possibly a cheaper solution**, if compared to **internal development** to gain access to innovative technologies
- **Possibility to access new markets**
- **Possibility to increase financial returns and increase profit**
- Possibility to foster within the supported startups, the development of **products and services complementary** to the ones of the Corporate Firm
- **Possibility to mitigate risk**, by entering new businesses and diversifying corporate's portfolio

##### DISADVANTAGES & DUTIES

- **Higher commitment (financial and strategic)**, if compared to other solutions (e.g. Investment)

- **Time-consuming and costly process** of startups selection
- **Due diligence** to be applied
- **The monitoring process has a relevant cost** and it has to be carried out both from a financial and strategic point of view
- **It is necessary the involvement of shareholders** that typically want to manage their business portfolio autonomously, therefore they need to be convinced about the soundness & potentiality of the startup

### *1. Acqui-hiring*

#### ADVANTAGES

- **Possibility to acquire talented people** from startups
- **Higher effectiveness** if compared to traditional hiring techniques
- **Possible cultural change**
- **Learning for employees** by engaging them as mentors for the newly hired entrepreneurs

#### DISADVANTAGES & DUTIES

- **Necessity to avoid the contrast newly hired entrepreneurs vs. old employees**, inside the company

## 1.5 Critical collaboration factors & typical pitfalls

This last section aims at listing, discussing and providing theoretical inputs from a contractual point of view to solve the main problems and key points that companies must face when dealing with startups. Moreover, there will be mentioned also some of the typical pitfalls which corporations have to dodge when engaging with new ventures. In this concern, this thesis outlines some organizational precautions that can be implemented to smooth the roughness that startups usually incur into communicating with traditional businesses. According to the literature on this topic, a general recommendation that can be made is that both parties need to be as open as possible with each other about potential legal and commercial issues to avoid the failure of the joint project or of the market relationship (Minshall et al. 2010).

The factors that will be tackled hereafter are:

- IP & NDA: how to handle the intellectual property of the collaboration outcome and which information can be shared with the outside world
- Power asymmetries: a relationship between an establish partner and a new venture is subject to power asymmetries that can jeopardize everything from the beginning
- Payment terms: the needs of a startup in terms of payment are way different from those of a regular company; an exception has to be made
- Objectives: the more different the two partners are, the more there is the need to clarify objectives and avoid misunderstanding
- Time schedule: long or short term is a concept that is tightly related to the type of company under consideration
- Dedicated procedures: as already said for payment terms, a startup cannot be treated or analysed as a normal venture would be.

### *The Lambert toolkit*

As a contractual support, this thesis will exploit the Lambert toolkit:

*“The Lambert toolkit is a set of decision tools and standard agreements designed to improve the process of negotiating collaboration agreements between research establishments and business, which has been in place since 2005”*

Eggington, Osborn and Kaplan (2013)

This toolkit was developed by Lambert working group on behalf of the UK's government's intellectual property office to facilitate the collaboration between universities and industries. According to the same article quoted above, the aim was to establish a balanced approach capable of:

- facilitating negotiations between potential collaborators
- reducing the time and effort required to secure agreements
- providing examples of best practices

As it was pointed out in the previous two sections, this thesis focus is on the startup-company relationship. Thus, since the toolkit was originally created to suit a different environment, there is the need to adapt it to the new application context. Nonetheless it was still developed to support Open Innovation which is one of the other topics of this paper, therefore the alterations that had to be done are minor.

### **1.5.1 Power asymmetries**

*“The large firm may abuse its position by drawing out negotiations and attempting to prevent discussions with competitors”*

*Minshall, Mortara, Valli and Probert (2010)*

A relationship between a large company and a startup is characterized by a natural power unbalance in favour of the former. This inequality can be obviously dangerous for new ventures, hence their tendency to seek partnerships with independent or state-run institutions over large corporations (Weiblen & Chesbrough 2015). Established corporations must be aware of this mistrust to be able to address and overcome it, putting a lot of effort into convincing startups that they are a reliable partner and that under no circumstances they would misuse their power with an opportunistic behaviour. Achieving this objective might lead to a competitive advantage inasmuch as it allows a company to partner with the most promising startups, preventing competitors from doing the same as long as the deal

remains in place. Even if it might be tempting for a multinational to design their own corporate version of a startup idea, doing that impacts heavily on their credibility and in the long run destroys their capability to find new startups partners (Weiblen & Chesbrough 2015).

### **But what mechanisms are available for corporate firms to build fruitful and trustful relationships with startups?**

A solution to this issue may come from contractual negotiation, which enable both parties to define the desired patterns of partner behaviour. More specifically, four levers can be exploited to make one's commitment explicit and build a stable partnership: formality, exit barriers, exclusivity and financial incentives (Bucklin & Sengupta 1993).

- *Formality* defines the degree of definition and complexity of an agreement between parties. This could be at one extreme simply a letter of intent. At the other extreme, it may mean to build long and complex contracts, dealing with several eventualities and defining specifically power and rights of both parties, with the obvious aim of redefining relations to create greater balance.
- *Exit barriers* are, on the other hand, usually related to the incorporation of penalties, such as the forfeit of IP rights involved in a collaboration project in case a violation of the contractual terms occurs.
- *Exclusivity* constraints may also be included in contracts to balance power disparities. As an example, the strongest party (i.e. the corporate firm) in a co-development alliance may be prevented from establishing alliances with other startups.
- Finally, *Financial Incentives* may too represent a form of commitment for a corporate firm. Equity funding, resources provision, or early payments from the firm side result in an increase of trust on startups'.

An interesting trait of power asymmetries is that they might play a role in the supplier evaluation (Kern, Willcocks and Lacity 2002). In fact, it does not come as a revelation that in every sector, no matter how old or established a company is, there is always the risk that a supplier gets too much importance in a medium-long term market relationship. One obvious and traditional way to solve this issue is to resort to multiple suppliers, but sometimes sole sourcing is required. Whenever this condition is verified a different risk mitigation strategy could be put into practice: turning to a startup supplier. The underlying idea is that a small venture with few customers is more likely to pay more attention to the company needs; a really plausible statement given the abovementioned unbalance.

There is also another possible criterion that casts a positive light on the startup alternative: the threat of the supplier stealing intellectual capital and entering the market as a competitor (Kern, Willcocks and Lacity 2002). Also in this case, the choice of a new venture can be winning since the latter does not own enough resources to accomplish that, yet. Of course it is not the only way to cope with that issue, usually in supply relationships risk is mitigated with non-compete clauses that nonetheless do not come for free and require time and experienced people to be drafted.

In conclusion power asymmetries are an important element that need to be tackled inside contracts between a startup and a corporation. It is a factor that should not be exploited in a utilitarian way, but, at the same time, the mere fact that the unbalance exists has to be taken into consideration. In fact, while not exploiting it unduly, it can still be a factor that in specific cases can favour a startup over an establish company for a supply partnership. Nonetheless the selection of a startup partner only to mitigate the power asymmetry in favour of the supplier is not generally seen as the best practice (Kern, Willcocks and Lacity 2002), also because simultaneously the “supplier going out of the business” risk increases greatly.

The last remark on this topic is that power asymmetry related legitimate fears are made less critical more thanks to “word-of-mouth” by startups that had engaged successfully in the past, than just due to contractual subparagraphs.

### **1.5.2 IP & NDA**

*“Intellectual property (IP) is a category of property that includes intangible creations of the human intellect, and primarily encompasses copyrights, patents, and trademarks. It*



*also includes other types of rights, such as trade secrets, publicity rights, moral rights, and rights against unfair competition. Artistic works like music and literature, as well as some discoveries, inventions, words, phrases, symbols, and designs, can all be protected as intellectual property”*

Wikipedia – The Free Encyclopedia

Intellectual property can be bought, sold or licensed and its importance stems from the fact that owning it can confer a competitive advantage. Where the results of a project enable the creation of an innovative product indeed, the ownership of the IP or the exclusive right to exploit it are a “collateral” for the investment faced for its development.

It is probably the most significant factor that has to be considered in a contract, even more for a startup whose key asset most of the time is precisely IP. At the same time, also large firms often identify managing IP and the use of Non-disclosure agreements (NDAs) as one of the areas of major concern while discussing a contract. (Minshall, et al. 2010).

Given the abovementioned power imbalance in fact, startups are often reluctant to expose in a detailed way their technology without first getting the potential partner to sign an NDA. Firms are often unwilling to do so without having evaluated the potential of the startup idea, some of them even do not accept to consider a startup unless there are already some registered IP rights (Minshall, et al. 2010). Other times, many large firms do not want to sign since they already own much IP in the area and doing so might lead to conflict of interest or higher risk to be sued (Bannerjee, Bielli and Haley 2016).

There is another potential source of conflict which is related to the fact that startups typically want to grow as much rapidly as possible. To do so, they are interested in offering elsewhere the product, leveraging on their IP rights. On the other hand, companies, since they had invested in the startup idea, might want to retain the exclusivity on it for a certain period of time in order to be first on the market. (Homfeldt et al. 2017).

The result of these contrasts is a deadlock, which can be overcome only when the startup and/or the company accept a reasonable flexibility on the topic.

On the other hand, also some firms are reported to have asked for an NDA before even the first meeting. In this case, the problem is on startup side considering that it is a time and money consuming process, which has to be finalised even before it has been possible to

assess whether there is fit or not among the two parties. The latter is far from being a secondary aspect, in fact generalizing what has been claimed in section 1.3.3 “Co-marketing arrangements: Co-branding”, according to literature it is probably one of the most important elements to ensure a positive outcome for any business relationship.

A second aspect about NDA, is that large firms are often worried about potential brand abuse that can result from a startup misunderstanding of the confidentiality clause or from its intentional circumvention to gain credibility on the market. In this regard, in the article “Making Asymmetric partnerships work” (Minshall et al. 2010) the authors report a statement from a large firm manager: *“After we had signed a deal with a startup, we gave them sight of our confidential technology roadmap. They then went off and talked about this in a press release!”*

It is difficult to identify in theory a one-size-fits-all advice, except that in this phase startups should probably look for legal support. If it is true that the majority of new ventures has a perception of IP which is really close to paranoia, some others are probably too nonchalant. It is understandable that startups with no or few assets other than the intangible ones are protective, but according to the authors of “Scaling together overcoming barriers in corporate-startup collaboration” (Bannerjee et al. 2016): instances of corporate partners stealing IP are much rarer than instances of collaborations falling apart due to lack of disclosure. From this data it descends how it is better to try to build trust with the other party before involving lawyers. The corporation should prove to be open to dialogue agreeing on the main issues and in this regard sometimes creating a protective space where IP can be “airlocked”<sup>17</sup> by a third party might be advisable.

In conclusion managing NDA & IP in a good way is of utmost importance to allow the progress of a business deal. In fact, it is usually the most critical point in the contracting phase, but it is also worth to mention as it is reported in the article mentioned in the previous paragraph that: *“IP is sometimes used as shorthand to describe a whole host of issues relating to contract development, such as indemnities, warranties, exclusivity or publishing”*.

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<sup>17</sup> For more information, see <http://www.toolkit.100open.com/devpropositions/we-need-to-run-a-pitch-for-presenting-new-ideas-airlock/>

Below it is reported a series of questions that have to be tackled whenever an NDA agreement has to be drafted:

|                        |  |
|------------------------|--|
| <b>Confidentiality</b> | <ul style="list-style-type: none"> <li>• What information of firm is to be kept confidential?</li> <li>• What information of startup is to be kept confidential?</li> <li>• Is confidential information to be kept confidential indefinitely or for a definite period?</li> <li>• If the latter, what period?</li> <li>• Is either party subject to the Freedom of Information Act?</li> </ul> |
|------------------------|--|

Table 5: Example of relevant questions for NDA

|  |  |
|--|--|
| <p><b>An Example of a Mutual Non-Disclosure Agreement</b></p> <p>Date: 201[ ]</p> <p>Parties:</p> <p>[NAME OF INDIVIDUAL] of [address of individual]<br/>OR<br/>[NAME OF COMPANY], a company registered in [England] under company number [number on Register of Companies] whose registered office is at [address of office on the Register of Companies]<br/>and<br/>[NAME OF INDIVIDUAL] of [address of individual]<br/>OR<br/>[NAME OF COMPANY], a company registered in [England] under company number [number on Register of Companies] whose registered office is at [address of office on the Register of Companies]</p> <ol style="list-style-type: none"> <li>1. Each of the parties to this Agreement intends to disclose information (the Confidential Information) to the other party for the purpose of [insert details e.g. discussing the possibility of the parties entering into a joint venture] (the Purpose).</li> <li>2. Each party to this Agreement is referred to as 'the Recipient' when it receives or uses the Confidential Information disclosed by the other party.</li> <li>3. The Recipient undertakes not to use the Confidential Information disclosed by the other party for any purpose except the Purpose, without first obtaining the written agreement of the other party.</li> <li>4. The Recipient undertakes to keep the Confidential Information disclosed by the other party secure and not to disclose it to any third party [except to its employees [and professional advisers] who need to know the same for the Purpose, who know they owe a duty of confidence to the other party and who are bound by obligations equivalent to those in clause 3 above and this clause 4.</li> <li>5. The undertakings in clauses 3 and 4 above apply to all of the information disclosed by each of the parties to the other, regardless of the way or form in which it is disclosed or recorded but they do not apply to:             <ol style="list-style-type: none"> <li>a) any information which is or in future comes into the public domain (unless as a result of the breach of this Agreement); or</li> <li>b) any information which is already known to the Recipient and which was not subject to any obligation of confidence before it was disclosed to the Recipient by the other party.</li> </ol> </li> <li>6. Nothing in this Agreement will prevent the Recipient from making any disclosure of the Confidential Information required by law or by any competent authority.</li> </ol> | <ol style="list-style-type: none"> <li>7. The Recipient will, on request from the other party, return all copies and records of the Confidential Information disclosed by the other party to the Recipient and will not retain any copies or records of the Confidential Information disclosed by the other party.</li> <li>8. Neither this Agreement nor the supply of any information grants the Recipient any licence, interest or right in respect of any intellectual property rights of the other party except the right to copy the Confidential Information disclosed by the other party solely for the Purpose.</li> <li>9. The undertakings in clauses 3 and 4 will continue in force [indefinitely][for [insert number] years from the date of this Agreement].</li> <li>10. This Agreement is governed by, and is to be construed in accordance with, English law. The English Courts will have non-exclusive jurisdiction to deal with any dispute which has arisen or may arise out of, or in connection with, this Agreement.</li> </ol> <p>Signed [by [insert name]] OR [on behalf of][insert name] by its duly authorised representative:</p> <p>_____<br/>Signature</p> <p>_____<br/>Name</p> <p>_____<br/>Position</p> <p>Signed [by [insert name]] OR [on behalf of] [insert name] by its duly authorised representative:</p> <p>_____<br/>Signature</p> <p>_____<br/>Name</p> <p>_____<br/>Position</p> |
|--|--|

Figure 6: Example of NDA

## How to decide which party will have the IPR on a newly developed product/service?<sup>18</sup>

<sup>18</sup> The following contractual details have been taken from the Lambert Toolkit guide & website

A possible assumption to handle Intellectual property rights (IPR) is that each one of the two parties will have rights to exploit the results of a collaboration according to its contribution from a financial or other point of view. Of course, if the “customer” company wants to own the IPR resulting from the collaboration, the two parties may agree on that by ensuring that the return of the “supplier” company is still higher than when the latter holds the IPR.

For instance, if the outcome of the co-development process is particularly important for the future of the startup, IPR should be owned therefrom, granting to the other party a royalty-free or a cheaper non-exclusive license to use the new service/product.

According to Lambert Working Group the more the customer company contributes, the more rights it ought to receive. It is not a one-size-fits-all advice or a written-in-stone principle, but it is a reasonable assumption that should be taken into account when determining the return of each one of the parties involved.

The assessment of their contribution which will result in the IPR possession, depends on various factors such as: the respective intellectual efforts contributions, background, money, materials, facilities, human resources, their ability to exploit the results of the project and the supplier company’s need to detain assets to consolidate themselves in the market.

If the IPR remains in the hand of the “supplier” company in order to allow the “customer” to use the outcome of the co-development project a *license* has to be issued. Another less frequent solution is the *joint ownership* or co-ownership of IPR. Both solutions are explained hereafter:

- *Licensing intellectual property*

*A license is an agreement between you as the IP right owner and another party. It grants them permission to do something that would be an infringement of the rights without the licence.*

Lambert toolkit – Licensing intellectual property

Intellectual property can be<sup>19</sup>:

- Licensed-out: to a company in return for a fee

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<sup>19</sup> The content of this paragraph is taken from Lambert Toolkit guidelines

- Licensed-in: bought to develop products/service

The person granting the licence is called the licensor and the person receiving the licence is the licensee. It is not uncommon that there are more than one of both in a licence agreement. Hereunder the advantages and limitations of granting a licence are presented according to the Lambert toolkit framework.

*Benefits of licensing:*

- Sharing costs and risk: if the licensee assumes the right to manufacture and commercialize products, the licensor receives revenues from that licensing, without the risk of producing, promoting and selling in the first place. At the same time the licensee has the right to use the IP without the research & development costs and risks.
- Revenue generation: licensing can broaden the reach of IP into different markets.
- Increasing market penetration: to sell also in territories in which the owner is not present
- Reducing costs: buying-in licences it is a way to reduce R&D expenses
- Saving time: acquiring a licence to build on existing IP (engineering workaround) instead of trying to create something radically new can shorten the time to market
- Accessing expertise: exploiting a licence, a business can draw on expertise that it does not have in-house
- Obtaining competitive advantage
- Collaboration: in an Open Innovation paradigm licensing can be the best way to extract value from a patent which cannot be managed internally because of its nature distant from the core business

*Limitations:*

Licensing (-in or -out) is not always the winner choice. When conditions are not suitable some other alternatives should be considered.

- In an Open Innovation paradigm, if a company has the ability to commercialize an IP it makes no sense giving it away

- Issuing a licence to a company who might lessen the IP value it should be avoided (e.g. Luxury brand for cheap items)
- If the licensor asks for too high royalties compared to the potential market
- If the licensed IP is so weak that a competitor working round it may easily take market share away

**Main parts of a licensing contract:**

Table 6 shows some questions that must be answered in order to draft a comprehensive licensing contract, in particular for what concerns the definition of what is really being licensed. The aim is to avoid misunderstanding and decrease as much as possible the risk of future suits by settling potential conflict areas.

|                               |  |
|-------------------------------|--|
| <b>What is being licensed</b> | <ul style="list-style-type: none"> <li>• What is the main IP being licensed?</li> <li>• Is the IP capable of registration and should that be put in place before proceeding?</li> <li>• Is there any other IP that the licensee will need to be able to use to benefit from the licence?</li> <li>• What know-how or other confidential material is the licensee being permitted to use?</li> <li>• Does any of the IP belong to someone other than the licensor? If it does, does the licensor have the right to license it?</li> <li>• Are there any terms and conditions that apply to any of the IP which has been licensed in that must be carried through to the licence?</li> <li>• If the IP is jointly owned by the licensor and another person, does the licensor have the right to license the IP?</li> </ul> |
|-------------------------------|--|

*Table 6: Guidelines for licensing*

○ *Joint ownership or co-ownership*

Co-ownership can be considered the easiest solution in the case of co-development of products and services. However, it is at the same time not so frequently applied. This is mainly due to the fact that in this case the decisional freedom of the two parties involved is massively limited. For instance: if from one side each co-owner is allowed to use directly an invention, from the other

any dealing with its patent requires the permission of the other co-owner. This is a very important limitation in the commercialisation of the connected product/service and depending on its importance can impact heavily on the company business.

Typically, Intellectual Property Rights are equally distributed between the two co-developers. By the way, the joint ownership shares can be modified during the project evolution, and rights and expenses are then allocated accordingly. As soon as the co-development project is concluded, both parties can decide to give away their half of Intellectual Property Rights: to do so it is necessary to set the value of the property while drafting the co-ownership contract. (Lambert Toolkit).

### **1.5.3 Payment terms**

They are usually a critical contract factor in corporate-startup relationships because of startup own nature: with limited cash flow and a continuous need for money. Therefore, long or late payment terms can affect one of those new ventures in a really negative way. As it can be inferred from the article “Scaling together – overcoming barriers in corporate-startup collaboration” (Bannerjee et al. 2016) where it is showed how the 20% of the new ventures involved in a procurement relationship have been damaged by slow payment terms. Startups might even be “killed” by an ineffective payment system, considering that, differently from a regular venture, they absolutely cannot withstand the standard payments time-frame. Therefore, a company willing to collaborate with them must put in practice a dedicated payment process. Actually, according to the same article mentioned above, pre-payment or dedicated payment terms had a positive impact in the same percentage of the cases. This solution is already quite widespread in Europe as it can be seen in the paper Open Innovation in Europe by Nesta, which shows how one third of the surveyed companies take less than three months to pay startups and the 64% even less than a month.

Another way to meet the startups’ requirement may be devised by policymakers, by means of a controlling mechanism over companies in order to help startups’ growth and avoid payment accidents, for instance the list of poor payer companies or a regulatory enforcement. (Bannerjee et al. 2016).

A relevant case by Yoon, Rosales and Talluri (2017) is proposed below: the collaboration between an innovative startup with no production capacity and a large company in the pharmaceutical industry, who wants to exploit the former's innovation.

In this case three main options of contractual agreements between the two parties can be identified:

1. A **licensing agreement** with *milestone payments* and the option to include an *upfront payment*
2. A **licensing agreement** with *royalties* and the option to include an *upfront payment*
3. An **acquisition contract**

each of them having a specific application domain, in which they prove to be the optimal solution.

An acquisition contract simply consists in the acquisition of the startup's innovation by the large firm. On the other hand, what differs between the first and the second solution is the velocity and frequency with which payments to the startup are executed. As demonstrated by Yoon, Rosales and Talluri (2017), the first solution results to be optimal for the corporate firm if manufacturing costs are low. On the contrary, in case manufacturing costs are high, the licensing agreement with royalties results as the best solution.

Considering this analysis, it is clear that the corporate firm may prefer one solution over the others according to its situation. Consequently, the firm might be tempted to force the startup to accept a specific type of agreement, thanks to its stronger position. The new venture, instead, would probably prefer in any case the solution with quicker inflows.

The example above shows a specific case in which preferences differ a lot between startups and corporate firms. Thus, in order to implement an effective and efficient collaboration, it is important to take in consideration also the necessities on the startup side.

#### **1.5.4 Objectives**

Even before entering the contractual phase, companies must have clear in mind the objectives behind their desire to work with startups (Mocker, Bielli and Haley 2015). It is from this awareness which stems the right decision for what concerns the way to engage with them and the possibility to establish clear goals in the collaboration deal.



There are several difference factors between a startup and an established company. Each of them has to be considered while drafting a contract in order to be crystal clear about how project goals are meant.

The first remarkable element is the fact that since startups are founded to exploit business opportunities in relation to a particular customer need, they are more risk-taking and not afraid to scout technical areas in which the company is already present. This fact can be dangerous for a firm that in the first place had no intention to fund the development of a product/service with a cannibalization potential (Das & He 2006). Thus, when a company is planning to collaborate with a new venture, an important element to be discussed is the nature of the wished-for project outcome. However, as it has just been pointed out, the company has to accept the risk of obtaining from the joint project a solution which has the potential to overcome an existing product/service.

| HEADS OF TERMS   |   |
|--|---|
| <b>PROPOSED COLLABORATION AGREEMENT FOR THE [INSERT NAME] PROJECT</b>  |   |
| <b>DATE:</b>   | 201[]   |
| This document sets out the principal terms and conditions on and subject to which the following parties ( <b>the Parties</b> ) are willing to enter into a Collaboration Agreement, provided the Parties agree and sign a detailed and legally binding Collaboration Agreement ( <b>the Collaboration Agreement</b> ). |   |
| The contents of this document are not exhaustive and they are not, and are not intended to be, legally binding except where they are specifically stated below to be binding.  |   |
| <b>1. THE PARTIES</b>  |   |
| (1)  | [INSERT NAME], whose administrative offices are at [insert address] ( <b>the Institution</b> ) and  |
| (2)  | [INSERT NAME] [LIMITED][PLC], [a company registered in [England] under number [insert number], whose registered office is at [insert address of registered office]OR[insert status of the Collaborator, e.g. NHS Trust] of [insert address of principal office] ( <b>the Collaborator</b> ) |
| <b>2. THE PROJECT</b>  |   |
| 2.1  | The proposed start date of the Project is [insert date].  |
| 2.2  | The proposed end date of the Project is [insert date].  |
| 2.3  | If work starts before the Collaboration Agreement is signed by both of the Parties, the Collaboration Agreement [is]OR[is not] to have retrospective effect.  |
| 2.4  | The Institution will provide the following resources (human and other): [insert details of resources].<br><br>(Key people are marked with an asterisk.)   |
| 2.5  | The Collaborator will provide the following resources (human and other): [insert details of resources].<br><br>(Key people are marked with an asterisk.)  |
| 2.6  | If a Party is to provide any materials, the Parties will enter into a separate Materials Transfer Agreement in relation to those materials. The proposed terms of that Materials Transfer Agreement are attached to these Heads of Terms.   |
| 2.7  | The Project is expected to make use of the following third party resources:<br><br>[insert details of third party resources].   |
| 2.8  | The [Institution]OR[Collaborator] will be responsible for putting in place arrangements to allow those third party resources to be used for the purposes of the Project.  |
| 2.9  | The Institution's contribution [is]OR[is not] to be limited to what the funding provided by the Collaborator and any third party funding allows it to do.   |
| <b>3. FINANCIAL CONTRIBUTION [AND EXTERNAL FUNDING]</b>  |   |
| 3.1  | The Collaborator's financial contribution will be: [insert details].  |
| 3.2  | The Collaborator's financial contribution will [be a fixed amount]OR[depend on amount spent by Institution, staff costs etc.]   |
| 3.3  | The Collaborator will re-imburse the following expenditure to the Institution: [insert details].  |
| 3.4  | The Collaborator will pay the Institution [on a full economic costs basis]OR[on a full economic costs plus profit element basis].   |
| 3.5  | The Collaborator will cover increases in salaries, NI etc.  |
| 3.6  | The Institution will render invoices to the Collaborator every [insert details].  |
| 3.7  | The Project is expected to be supported by the following external funding: [insert details].  |
| 3.8  | The conditions which it is anticipated will attach to the external funding are attached to these Heads of Terms.]   |
| 3.9  | Both Parties] will comply with those conditions.]   |
| <b>4. BACKGROUND</b>   |   |
| 4.1  | The Institution will provide the following Background: [insert details].  |
| 4.2  | The Collaborator will provide the following Background: [insert details].   |
| 4.3  | Other companies in the Collaborator's group will need to use the Institution's Background for the purposes of the Project.  |
| 4.4  | The following items of the Institution's Background are confidential: [insert details].   |
| 4.5  | The following items of the Collaborator's Background are confidential: [insert details].  |
| <b>5. THE RESULTS</b>  |   |
| 5.1  | The [Institution]OR[Collaborator] will own the results of the Project ( <b>the Results</b> ).   |
| <b>OR</b>  |   |
| Ownership of the results of the Project ( <b>the Results</b> ) will be split between the Institution and the Collaborator as follows:  |   |
| the Institution:   | [insert details]; and   |
| the Collaborator:  | [insert details].   |

Figure 7: Example of Heads of terms agreement

Secondly, the reason why a startup enters an alliance with an established partner is typically survival, in fact by leveraging on the name of the corporation as a reference the former can obtain credibility on the market. This is true even if its long term “hidden” goal is to be acquired by its alliance partner, because it is always a plus to gain a certain level of maturity

alone, inasmuch as it conveys bargaining power. Therefore, the established corporation has to be aware of the fact that the entrepreneurial company is looking for a firm that really believes in fostering the development of the junior partner (Das & He 2006). From a contractual point of view this could mean the creation of heads of terms explicitly aiming at reassuring new ventures about that topic which is crucial for them. An example of the first two pages of a heads of terms agreement is reported in Figure 7, drafted for the particular case of the collaboration between corporate firms and universities, which presents similarities with corporate firms and startup one anyway.

According to the article: “Entrepreneurial firms in search of established partners” (Das & He 2006) the commitment of member firms in an alliance is considered a critical factor in the joint development of a product/service. This conclusion of course does not come as a surprise, but if this from a startup point of view it is not a problem, a leaner structure has indeed unequivocal objectives. The same does not count for large enterprises in which the complex organisation is formed by diverse units and functions characterized by different goals which sometimes can be in contrast. This means that initiating an alliance with a promising startup can be for instance welcomed by top management but opposed by the R&D units that is concerned about a future partial “outsourcing” of innovation development. Therefore, knowing that a new venture is worried about this possible non-uniform commitment, an established corporation has to try to set out specific contractual warranties in favour of the startup. However, even if it is less likely to be necessary due to the importance the startup gives to the relationship with the company, these warranties should also protect the company. In fact, in certain cases there is the risk that new ventures adopt an opportunistic behaviour. For instance, if they are financed by an external source, they could be driven to lower their commitment in order to enjoy for a longer time of the economic support.

These are all important features which have to be addressed into an effective contract, but it is important to mention that they are not exhaustive. In fact, it is likely that, from case to case, the deal has to be adapted including other factors directly related to the specific relationship at issue.

### 1.5.5 Time-schedule

Another critical factor which emerges while drawing up a contract between a startup and a firm is time. In fact, established and entrepreneurial firms usually have strongly different planning horizons (Das & He 2006). The former, thanks to their economic stability, are usually able to plan activities with a longer view. On the other hand, startups cannot afford to do it given that they are often in need of quick financial resources. In addition, large established firms are capable of bearing risk in a more resilient way, since they can tolerate relatively long periods of poor performances or heavy investment. Startups instead, are very likely to be killed by such hard times of stagnant performances. This is mainly due to the scarce financial resources they usually possess and their still not established position in the market which exposes them to higher risks (Das & He 2006). Moreover, their investors usually ask for immediate success in technological advancements and product/service development; the time to gain results is a matter of survival for them.

As a consequence, these discrepancies in the optimal planning horizon for the two parties often lead to differences in their behaviour while engaged in the partnership. A clarifying example is provided hereafter: if a co-development contract is signed, an entrepreneurial firm will want to have the product ready for market sale as soon as possible. On the other hand, an established firm, which already has profitable products, might only want to keep them updated with a particular technology, with no hurry to substitute them completely with newly developed ones.

The time issue has also a central role for another important factor of relationships. Many startups complain in fact about lengthy, complicated or unreasonable procedures, such as the requirement of being compliant with ISO certifications (Bannerjee, Bielli and Haley 2016), to which, by collaborating with a large firm, they become subject and this fact hampers them from speeding up.

However, it is untrue that the correlations startup = short term horizon and large firm = long term view are always respected. The opposite may indeed happen too, for instance whenever a corporation invests in a startup with a prevailing financial goal. In this case, the established firm might want to have quick returns to lower risks, while the latter longs for time and support on a longer term, having perhaps a slower growth rate, but also the chance to benefit more from the collaboration. (Minshall et al. 2010).

It is clear that the unbalance in the relationship criticality for the two partners may lead to conflicts related to the speediness with which a particular project should be developed. It is then fundamental that clear and shared time horizons are defined beforehand during the phase of contract drafting, to ensure the effectiveness and success of the collaboration itself. This is typically achieved by laying down explicit action plans with a time schedule to be respected throughout the project.

According to Bannerjee, Bielli and Haley (2016), it is also important that corporations increase their process pace to harmonize it with startups' typical one. Given the utmost importance of this topic, the latter will be discussed in the following chapter which is about the dedicated procedures and organizational changes a large firm should implement to enable a seamless startup-firm collaboration.

#### **1.5.6 Dedicated Procedures and Organizational Changes**

In the previous subchapter the problem of the difference in planning horizons for startups and corporate firms has been mentioned as a possible contractual issue. As already anticipated, in order to prevent it, the latter has to be solved in early stages of the cooperation by setting out explicitly the collaboration time-schedule within the contract drafting phase. However, as explained above, startup and corporate optimal viewpoint on the topic may diverge significantly. It could also happen that, as things stand, the organizational superstructure in terms of processes and roles required by both sides is incompatible. Therefore, while approaching a corporate-startup collaboration specific process-related and organizational changes may be needed on both sides.

This chapter aims at explaining which procedural and organizational changes the literature about this topic recommends to solve this kind of issues and the related duties on both sides that have to be expressed in contractual obligations.

Startup entrepreneurs usually complain that large corporations have inflexible and lengthy processes and treat them as they would treat large firm partners. This problem is due to the optimization and efficiency pursued by corporate firms which lead to excessively streamlined and stiff processes not suitable to relate to entrepreneurial firms. (Bannerjee, Bielli and Haley 2016).

Different solutions to solve this issue can be implemented (Bannerjee et al. 2016):

- A possible solution for corporate firms is to amend internal processes trading efficiency for higher flexibility to enable a quicker coordination with startups.
- A second solution is to give startups a priority treatment via incentivizing human resources to prioritize their instances as soon as they are available. It is fundamental, for example, that employees working with startups have clear in mind that time is essential for startups and that a single late payment could jeopardize the future of those small businesses.

This is even more important if we consider that usually collaboration deals are carried out between the top managers of both firms, but middle managers are instead the ones who are responsible for their execution. The issue is crucial, in fact sometimes this managerial separation, that is significant in large firms, makes necessary to involve them from the very beginning of the negotiation stage to obtain good results. It is important that the latter too understand the opportunities offered by the partnership and gain commitment to work effectively with a startup without feeling threatened by outsiders' involvement.

- A third solution consists in implementing parallel processes. As an example, fast-track procurement channels may be dedicated to startups. In addition, they could be provided with specialized and dedicated legal staff with an access to priority supplier registration.

Moreover, a frequently used and successful-proved solution is that of creating a team of people working within an organizational unit or department, specifically dedicated to the interaction and the coordination with a startup partner. According to Das & He (2006) a dedicated department is not fundamental. However, to achieve good results, in their opinion a dedicated task force should be allocated to every collaboration project involving a startup.

People working within these departments or task forces should be 'easy to work with' and, the higher their experience in working with and within startups (even as founders or early startup employees), the higher the effectiveness of this solution (Weiblen & Chesbrough 2015). The so-created organizational unit or team thus works as a buffer between the higher-speed world of startups and the slower one of corporate firms.

On the startup side, a solution which proved particularly beneficial (Minshall et al. 2010) is getting people who already had experiences in large firms to brief the management team. This team becomes a useful point of contact between the startup and the large firm: translating the necessities and duties on both sides, protecting startups from excessive bureaucracy and smoothing communication on both directions.

According to Weiblen & Chesbrough (2015), the solution proved particularly successful for software vendor firm SAP, whose team responsible for working for startups included people who had former experiences in new venture management. The decision of including people with this background up to 80% of the total team composition proved itself very effective also on startups side, who experienced a sharp improvement of their interaction with the large firm.

In the next paragraph a real case about Enel company is presented: Enel has recently implemented some of the above-mentioned solution to improve its interaction with startups.

### **Real Case: Enel**

Enel need for collaboration with startups mainly derives from the necessity to cover technology gaps in energy storage, data analytics technologies etc. However, it was evident from the beginning that the relationship with startups was time-consuming and difficult on both sides.

What Enel understood was that processes and culture inside the firm had to change to grant good results in collaboration projects.

As a first solution to engage with startups, Enel created a streamlined process articulated in 5 phases:

1. *Preliminary Screening*
2. *Advisory Board Judgement*
3. *Commercial due diligence*
4. *Deal structuring*
5. *Approval*

Each of these phases was made simpler and quicker: as an example, the preliminary screening phase was enabled by a dedicated web platform to gather all startup submissions for projects. A dedicated team, the Holding Innovation Venture Team, was charged to

consult business line experts and provide an answer to startups in 15 days at maximum. The phases of Commercial Due Diligence and Deal Structuring were shortened too, down to three weeks and one month respectively.

The firm also started to provide incentives to employees in order to push them to work quickly and respect deadlines. Innovation managers, for example, were provided with an annual bonus if they performed well in this field.

As a third solution, Enel implemented priority treatments for startup. A preferential lane was created for innovative agreements, with a dedicated legal team and for fast-track procurement processes, sometimes including also upfront payments to support small business.

## 2. METHODOLOGY

This chapter shows how the research for this master thesis has been conducted by the candidates.

The proposal for this thesis comes from two of the Digital Innovation observatories of the school of Management of Politecnico di Milano. In particular, it was put forward by the Observatories of Digital Transformation Academy and Startup Intelligence. The possibility to refer to the latter has been extremely helpful to have the possibility to communicate with some CIO and Innovation managers of Italian company, enriching the academical information gathered on the topic.

In order to collect the data and information required to support the topic of the thesis, the methodologies used has been:

- A Survey directed to a database of over 2100 Chief Innovation Officers, Chief Digital Officers and Innovation Managers of Italian companies. Its aim was to identify which are the main trends in the present-day Italian market about relationships with startups, whether there are significative differences across business sectors and which are the most important issues faced by companies in the process.
- Direct interviews to Chief Innovation Officers or to Innovation Managers of big Italian companies and to startups representatives in order to try to outline the major critical points in the development of a collaboration relationship, translating them into their contractual counterparts.
- A collection of articles containing real case studies in order to validate the concepts expressed in the literature review section. The examples of good practises are also presented to work as a reference point for decision makers, while dealing with similar situations.
- A workshop called “*Workshop Experience Sharing*” organized by the Startup Intelligence observatory where professional managers of Italian companies debated about their experiences in engaging in relationships with startups and about innovation in general.

Finally, the convention organised by Observatories: Startup Intelligence, Digital Transformation Academy and Startup Hi-Tech titled “*Imprese e startup nel vortice della trasformazione digitale: alla ricerca dell’innovazione*” where the results from the survey have been illustrated and discussed by experts, researchers and managers.



## 2.1 Osservatori Digital Innovation

*“Our purpose is both to produce and spread knowledge about possible opportunities and the impact of digital technology in companies, public authorities and the public. Our approach consists of interpretive models based upon sound empirical evidence together with centres for independent ongoing and pre-competitive discussion to bring together the demand-and offer-side for digital innovation”*

The mission: Osservatori website

The Digital Innovation Observatories of the school of Management of Politecnico di Milano were created back in 1999 to “raise cultural awareness in all the principle areas of digital innovation<sup>20</sup>”. Nowadays they are one the Italian reference point for what concerns digital innovation and transformation.

The main activities carried out by the Observatories are four:

- **Research:** it is performed by a team of over 90 professors, researchers and analysts working in more than 30 observatories. Together, they address key matters of digital innovation in companies (including SMEs) and public authorities.
- **Knowledge:** Their website: “Osservatori.net” is the point of reference for professionals wishing to remain up to date on digital innovation. They offer, on a multi-media platform, a single source of information, data and knowledge based on publications, webinars and workshops prepared by analysts and experts with distinctive and unique expertise and know-how.
- **Communication:** Their good practice, experience and digital innovation culture are spread through conventions, media and publications, issuing over 5.500 press releases and articles and holding 200 public events every year.
- **Networking:** The Observatories gather together a wider community of offer-side and demand-side decision-makers and institutions, developing solid relationships and working together to help spread digital innovation.

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<sup>20</sup> Source: Osservatori.net – About us

The observatories are structured into three main categories:

- Digital Transformation: this group of Observatories explores those digital innovation processes which are deeply transforming the way of doing business in Italy.

The active Observatories dedicated to Digital Transformation are: Design Thinking for Business, Digital Agenda, Digital Transformation Academy, Hi-tech Startups and Startup Intelligence.

- Digital Solutions: exploring the impact of new digital technologies in specific application domains.

The active Observatories dedicated to Digital Transformation are: Artificial Intelligence, B2C e-Commerce, Big Data Analytics & Business Intelligence, Blockchain & Distributed Ledger, Cloud Transformation, Electronic Invoicing & B2B e-Commerce, Information Security & Privacy, Internet of Things, Mobile B2C Strategy, Mobile Payment & Commerce, Multichannel, Omnichannel Customer Experience, Planning & PLM Management, Smart Working.

- Verticals: analysing the impact of Digital Innovation in specific sectors or processes.

The active Observatories dedicated to Digital Transformation are: Cloud in the Public Sector, Contract Logistics “Gino Marchet”, Digital Innovation in Healthcare, Digital Innovation in Heritage & Culture, Digital Innovation in Retail, Digital Innovation in Sport Industry, Digital Innovation in Tourism, E-government, Export, Fintech & Insurtech, Food Sustainability, HR Innovation Practice, Industry 4.0, Internet Media, Kids & Toys, Mobile Banking, Online Gaming, Professionals & Digital Innovation, Smart Agrifood, Supply Chain Finance, Tech company – ICT channel innovation.

This thesis work has been developed mainly exploiting the subjects covered by two of these Observatories: Startup Intelligence and Digital Transformation Academy.

### **2.1.1 Startup Intelligence Observatory**

The Startup Intelligence Observatory was born in 2014 in collaboration with PoliHub and has the mission of fostering the relationship and the exchanges between digital Startups and Italian companies. Their approach to reach this aim relies on an annual calendar of events

full of exciting material and meetings, specifically designed to spread a culture of innovation inside partner firms.

The primary activities of the Startup Intelligence observatory are:

- Research: trying to foresee and intercept trends, scenarios and innovative projects in the Startups environment
- Scouting: identifying recently-born innovative Startups, considering them as potential suppliers of ICT solutions or partners for innovative businesses
- Community: encouraging debate among managers and professionals of various companies that really do innovate, to lead to a profitable exchange of experience and skills
- Training: sharing best practises with companies via workshops to foster internal entrepreneurial culture, allowing them to engage effectively with startups
- Visibility: promoting visibility of partner companies engaged in Open Innovation projects and cultural transformation processes, with positive implications for their brand awareness and attractiveness

### **2.1.2 Digital Transformation Academy Observatory**

The Digital Transformation Academy Observatory was born in 2008 in collaboration with Mip and Cefriel<sup>21</sup>. Its aim is to stimulate the culture of digital transformation within managers and companies to improve their competitiveness. The project has been conceived for C-level executives wishing to be bearer and spokespersons for digital transformation within their companies.

The main objectives pursued by this project are:

- be the reference point for the development of knowledge and spreading of innovative culture. Use original and state-of-art methodologies to work alongside companies in order to stimulate digital transformation and foster the achievement of greater competitiveness

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<sup>21</sup> A centre of excellence in the field on digital innovation

- leveraging on original and innovative methodologies, it aims at creating the conditions for a productive debate within the wide community of C-level executives interested in digital transformation from leading Italian companies and public authorities
- identify and discuss the main technological trends and organisational transformations in terms of roles and skills, through research and influential speakers from the world of business

## 2.2 The Research

The core of this thesis work leverages on the 2018 research, developed by Digital Transformation Academy and Startup Intelligence Observatories, titled “Indagine sulle priorità dell’innovazione digitale per le imprese nel 2019”. The main objectives of the previously mentioned research have been:

- Analysis of the Digital Innovation budget dimension and allocation inside the firm and expected trend for the 2018
- Identification of the main investment’ priority in Digital Innovation for the 2018
- Understanding how the Digital Innovation governance change under an organizational perspective
- Evaluation of the measures that medium and large Italian companies are planning to perform in order to evaluate the innovation performances
- Evaluation of the adhesion level to Open Innovation approaches by Italian firms in order to manage Digital Innovation
- Analysis of the role of Startups as potential partners and suppliers of Digital Innovation

The analysis has been conducted jointly by the two Observatories, leveraging on three different means:

- an online survey that received 250 responses by Chief Innovation Officer and Innovation Managers of Italian enterprises
- several direct interviews to Chief Innovation Officer and Innovation Managers of Italian enterprises

- interactive workshops organized by the Digital Transformation Academy Observatory and from the Startup Intelligence Observatory

Most part of the results have been shown on the 29<sup>th</sup> of November at the final Convention titled “*Imprese e startup nel vortice della trasformazione digitale: alla ricerca dell’innovazione*”.

## 2.3 Survey

The survey has been the primary method used to gather data. It has been developed on the Opinio platform, a software which allows to conduct surveys via web and to manage the database of contacts, providing the medium for the creation of invitations and reminders, the control on the respondents and the extraction of data in CSV format.

**INDAGINE SULLE PRIORITÀ DELL’INNOVAZIONE DIGITALE  
PER LE IMPRESE NEL 2019**

**Premessa**

La School of Management del Politecnico di Milano propone la Survey annuale finalizzata ad analizzare le priorità per l’innovazione digitale per le imprese italiane nel 2019.

Il questionario prevede al massimo 17 domande. A tutti coloro che contribuiranno alla Ricerca saranno inviati gratuitamente i risultati della Survey. Tutti i dati forniti rimarranno all’interno del gruppo di Ricerca e non verranno divulgati se non in forma di elaborazioni statistiche e/o di dati aggregati. Per visualizzare l’informativa privacy è possibile cliccare [qui](#).

I risultati saranno presentati durante il Convegno:

**Imprese e startup nel vortice della trasformazione digitale: alla ricerca dell’innovazione**  
29 novembre 2018 presso il Politecnico di Milano campus Bovisa alle ore 9:30  
Aula Magna Carassa e Dadda, via Lambruschini 4b

**Assistenza e compilazione**

Se desidera interrompere momentaneamente la compilazione, al termine di ogni pagina potrà salvare le sue risposte cliccando su "Salva". Le sue risposte saranno conservate e le verrà inviata un'email con il link per ritornare al questionario e terminarlo.

Chiarimenti per la compilazione del questionario possono essere richiesti all’Ing. Filippo Frangi ([filippo.frangi@polimi.it](mailto:filippo.frangi@polimi.it)).

*NOTA: Il presente questionario non può essere utilizzato o riprodotto, anche parzialmente, senza preventiva autorizzazione da parte del Politecnico di Milano.*

Figure 8: Survey front page

The decision to use a questionnaire as the main methodology to collect data was taken to increase as much as possible the number of potential respondents. Furthermore, it is a useful way to standardize questions and replies for every respondent leading to more uniform and unbiased data. On the contrary indeed, the direct interviews can go into a given direction according to how the question is made, emphasized and interpreted and so they are more helpful for other purposes.

The Survey consists of 17 closed-ended questions articulated in four topic areas:

1. Investment & ICT
2. Organization
3. Innovation performances management
4. Open Innovation

Given its subject, the master thesis drew in particular on the last one for the necessary data to carry out the analysis. The latter proved itself very useful to trace the behavioural pattern of Italian industries about relationships with startups and Open Innovation in general. Below the most relevant questions are reported:

**12. La vostra azienda adotta approcci di Open Innovation per l'Innovazione Digitale?**

- SI, da meno di 3 anni
- SI, da più di 3 anni
- NO, non ci interessa
- NO, ma abbiamo in programma di farlo
- NO, lo abbiamo fatto in passato ma abbiamo abbandonato questo approccio
- Non so

*Figure 9: Survey, question 12*

**13. Quali azioni avete intrapreso per stimolare e sfruttare Innovazione Digitale proveniente da fonti esterne e quanto queste azioni sono state soddisfacenti? (Scelta multipla)**

| Azione intrapresa   | Se adottata, indicare il livello di soddisfazione ottenuto rispetto agli obiettivi preposti (1 nessuna soddisfazione, 5 piena soddisfazione) |
|---|--|
| Hackathon, Datathon, Appathon <sup>2</sup>  |  |
| Call4ideas, Call4startup, Contest <sup>3</sup>  |  |
| Crowdsourcing <sup>4</sup>  |  |
| Corporate VC <sup>5</sup>   |  |
| Corporate incubator e accelerator <sup>6</sup>  |  |
| Merger & Acquisition <sup>7</sup>   |  |
| Partner scouting su imprese consolidate <sup>8</sup>  |  |
| Startup Intelligence (scouting di startup) <sup>9</sup>   |  |
| Collaborazione con Università e Centri di Ricerca (e.g. Osservatori Digital Innovation) <sup>10</sup> |  |
| Nessuna azione intrapresa   |  |

<sup>2</sup>**Hackathon, Datathon, Appathon:** competizioni che coinvolgono sviluppatori esterni all'azienda, durante le quali vengono realizzate concretamente, attraverso una competizione svolta nell'arco di poche ore, idee innovative utili al business aziendale.

<sup>3</sup>**Call4Ideas, Call4startup, Contest:** iniziative volte a raccogliere, attraverso un concorso, idee innovative su un determinato tema che l'azienda può decidere di implementare o supportare nel loro sviluppo.

<sup>4</sup>**Crowdsourcing:** iniziative che, attraverso l'utilizzo di piattaforme web, permettono di affidare a una community esterna all'organizzazione, come ad esempio gli studenti universitari, la ricerca della soluzione a un problema o la realizzazione di un progetto.

<sup>5</sup>**Corporate Venture Capital:** fondo aziendale dedicato, avente l'obiettivo di rilevare quote di capitali di una startup, con un'ottica non solamente finanziaria ma anche indirizzata ad avere un accesso privilegiato alle innovazioni e alle tecnologie sviluppate.

<sup>6</sup>**Incubator e Accelerator:** iniziative che, attraverso investimenti e attività di supporto alla crescita, permettono alle aziende di avvicinarsi all'ecosistema delle startup, con obiettivi strategici di presidio dei trend emergenti, sviluppo di tecnologie e modelli di business innovativi.

<sup>7</sup>**Merger & Acquisition:** investimenti diretti in realtà innovative per integrare rapidamente all'interno della propria organizzazione tecnologie e competenze che possano costituire un fattore di differenziazione nel breve periodo.

<sup>8</sup>**Partner Scouting:** ricerca mirata di idee, progettualità e potenziali partner da coinvolgere in attività di co-progettazione e co-sperimentazione di prodotti o servizi innovativi.

<sup>9</sup>**Startup Intelligence:** iniziative per lo scouting di startup su determinati ambiti d'Innovazione Digitale.

<sup>10</sup>**Collaborazione con Università e Centri di Ricerca:** accesso a invenzioni e brevetti, sperimentazione di nuove tecnologie e metodologie.

Figure 10: Survey, question 13



### 15. Collaborate con Startup?

- SI, da meno di 3 anni
- SI, da più di 3 anni
- NO, non ci interessa
- NO, ma abbiamo in programma di farlo
- NO, lo abbiamo fatto in passato ma abbiamo abbandonato questo approccio
- Non so

Figure 11: Survey, question 15

### 16. Quale tipo di relazione avete instaurato con le Startup con cui collabora la sua azienda? (Scelta multipla)

- La startup è Fornitore spot<sup>17</sup>
- La startup è Fornitore di lungo termine<sup>18</sup>
- La startup è Partner Commerciale<sup>19</sup>
- La startup è Partner R&D per la co-creazione di prodotto/servizio<sup>20</sup>
- La startup è Partner per la co-creazione e innovazione del modello di business complessivo<sup>21</sup>
- La startup è parte di un programma di incubazione/accelerazione<sup>22</sup> di proprietà dell'azienda o esterno con cui l'azienda collabora
- La startup è partecipata in Equity<sup>23</sup>
- La startup è stata acquisita<sup>24</sup>
- Non so
- Altro (specificare): \_\_\_\_\_

<sup>17</sup> Fornitura una tantum da parte della Startup di un prodotto/servizio.

<sup>18</sup> Fornitura da parte della Startup di un prodotto/servizio orientata al lungo periodo/reiterata nel tempo.

<sup>19</sup> Partnership orientata alla creazione di un canale innovativo di commercializzazione del prodotto/servizio.

<sup>20</sup> Partnership orientata allo sviluppo e la creazione di un prodotto/servizio innovativo.

<sup>21</sup> Partnership orientata alla creazione congiunta di un nuovo modello di business dell'azienda.

<sup>22</sup> Programmi volti a fornire supporto a startup attraverso una serie di risorse di sostegno, quali spazi fisici in cui operare, mentorship, sviluppo di competenze e formazione.

<sup>23</sup> Investimento finalizzato all'ingresso nell'Equity della Startup.

<sup>24</sup> Investimento finalizzato all'acquisizione della Startup stessa.

Figure 12: Survey, question 16

### 17. Quali tra le seguenti problematiche ha riscontrato la sua azienda nella formalizzazione della collaborazione con la/le Startup (Indicare le principali, massimo 3)

- Regolamentazione della proprietà intellettuale
- Definizione degli accordi di riservatezza
- Gestione dei processi di qualifica (albo fornitori)
- Gestione delle tempistiche di pagamento e/o gestione anticipi
- Allineamento sulle scadenze della collaborazione
- Gestione delle difficoltà di comunicazione e di comprensione tra i Manager dell'impresa e la startup (differenze culturali e metodologiche con le unità dell'azienda (es.: Acquisti, IT, R&D, Marketing))
- Formalizzazione di garanzie per favorire un impegno continuativo (es.: disponibilità di risorse da parte della startup, rischio di fallimento della stessa)
- Altro (specificare): \_\_\_\_\_

Figure 13: Survey, question 17



### 2.3.1 Classification of the respondents

The range of companies involved was wide and significantly various. Therefore, a classification of the respondents' array was a necessary prerequisite to start the analysis and to further elaborate the results. In particular, the subdivisions were made according to the sector and dimension of the interviewed company.

#### Sectorial breakdown

The sectorial breakdown was accomplished relying on the sector aggregation stated by ISTAT in the Ateco 2007 Code. Companies are grouped in six macro-sectors:

1. Finance: All enterprises in the finance business area such as: banks, insurance companies, investment and pension funds and debt collection companies.
2. Industry: broader class of manufacturing companies belonging to industries such as: structural or mechanical engineering, automotive, food, consumer goods production, chemical and pharmaceutical.
3. Media-Telco: including publishing, telecommunications and advertising industry.
4. Service: All the firms providing services such as: associations, logistic distribution, research centres, consulting, tourism, retail, food and entertainment.
5. PA-Healthcare: as the name suggests are all the public companies and administrations and the healthcare services.
6. Utility & Energy: gas, electricity, energy providers and garbage collection firms.

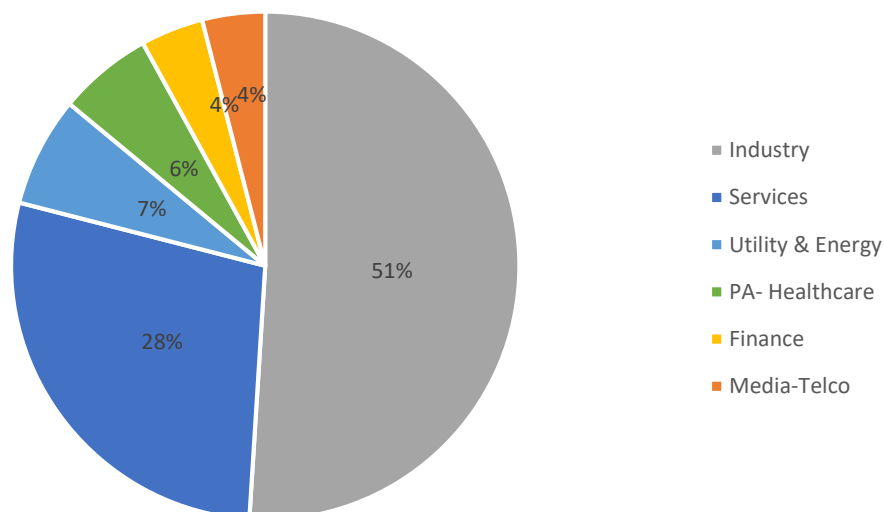


Figure 14: Sectorial breakdown of respondents

| Industry | Service | Utility & Energy | Finance | PA-Healthcare | Media-Telco |
|----------|---------|------------------|---------|---------------|-------------|
| 127      | 69      | 17               | 11      | 11            | 15          |

Table 7: Number of respondents for each factor

### Dimensional breakdown

The dimensional breakdown has been performed according to the number of employees. The data for almost every company has been found on the AIDA platform.

Firms can be classified as:

- Medium: from 50 to 250 employees
- Big: from 251 to 1000
- Biggest: more than 1000 employees

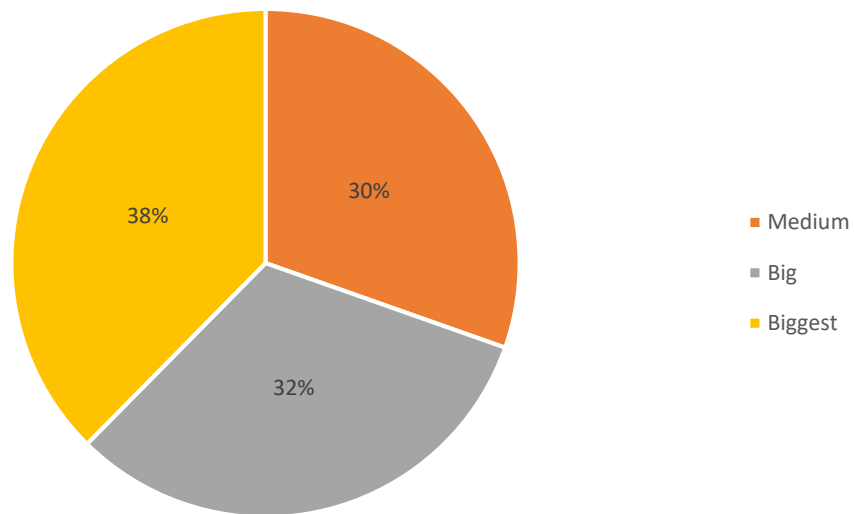


Figure 15: Dimensional breakdown of respondents

| Medium | Big | Biggest |
|--------|-----|---------|
| 76     | 80  | 94      |

Table 8: Number of respondents for each dimension

## 2.4 Interviews

The second methodology is based on a series of semi-structured interviews directed to Chief Innovation Officers, innovation managers and startups representatives. By carrying out this part of thesis the candidates were not only able to learn how to set up, structure and manage formal interviews. But also, to depict an overview of how Italian companies handle the Open Innovation paradigm, how they interact with startups and how the latter perceive these relationships.

The attribute semi-structured is due to the strategy followed: a first reference framework has been drafted for every interview with standard questions and guidelines to have answers as much as possible coherent with the research questions. However, each company has typical traits that deserve to be analysed with specific questions in order to detect possible peculiarities and sometimes questions had to be adapted to the “flow” of the conversation going “off-track”. The rough structure of the interview has been:

- Introductory questions about company and role of the interviewed manager
- Questions about Open Innovation and collaborations with startups
- Contractual or collaboration issues and real cases solutions

Once the interview is conducted, the next step is its textual transcription to ease the “coding” process. The latter consists in the detection of those parts of the interview which will be useful later to carry out the analysis of the case study.

The interviewed companies and startups are reported below:

- Industrial company – Procurement area
- TIM – Open Innovation area
- ISEO
- Sofia Locks
- BPER Banca
- Legrand

## 2.5 Workshops and Convention

The activity of the Digital Transformation Academy Observatory and of the Startup Intelligence Observatory is strongly based on the organization of workshops that are very

useful to support research activities. Each one of them covers a specific subject which is clearly relevant for all the companies involved for instance how to manage a relationship with startups. The activities are characterized by an open approach that leverages on the interaction among companies, researchers from Observatories and more in general experts from the School of management of Politecnico di Milano (MIP) and Polihub. A High level of interaction within and beyond speeches is ensured by specific tools such as work tables, gamification of group activities and live questionnaires through PollEv platform.

Thanks to the courtesy of observatories, the candidates have been able to take part to 3 workshops:

- Osservatorio Digital Transformation Academy - Industry 4.0 & Smart Supply Chain
- *Osservatorio Startup Intelligence - Workshop Experience Sharing*
- *Osservatorio Startup Intelligence - Internet of Things (Focus on Smart Cities)*
- *Osservatorio Startup Intelligence – Blockchain*

### **2.5.1 Workshop Experience Sharing**

*Nowadays, firms are more and more approaching the world of Open Innovation and Corporate Entrepreneurship by experimenting different ways to achieve that: traditional ones, such as alliances and internal contests and more complex ones, like collaboration with startups and the opening of internal incubators. The path is never unique or obvious and implies strong transformations in the governance of innovation, in the organization, in the competences and in the leadership styles. Since no precise roadmaps have been defined yet, even in literature, the experience sharing and the open discussion represent fundamental instruments to spread knowledge and empower Innovation Managers. The objective of the workshop is to make the exchange of experience easier and to share: the firms' journeys, the lessons learned and the main changes faced while adopting Corporate Entrepreneurship and Open Innovation approaches within the community of Innovation Manager Startup Intelligence. The workshop will rely on the concrete experience of participants, who have been involved as relators and in group activities.<sup>22</sup>*

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<sup>22</sup> Text taken by Workshop Experience Sharing description

# Preparazione Tavoli di confronto

SSERVATORI.NET digital innovation | POLIHUB INNOVATION DISTRICT & STARTUP ACCELERATOR BY FONDAZIONE POLITECNICO DI MILANO

Tre carte per ognuno dei quattro temi trattati:

NOME CLUSTER

SSERVATORI.NET digital innovation

Commenti:

.....

.....

.....

NOME CLUSTER

SSERVATORI.NET digital innovation

Commenti:

.....

.....

.....

NOME CLUSTER

SSERVATORI.NET digital innovation

Commenti:

.....

.....

.....

Abbiamo esperienze di successo da condividere

Non abbiamo ancora un'esperienza consolidata e vorremmo approfondire

Abbiamo esperienze di fallimento da condividere

---

Startup Intelligence - Experience Sharing 5 ottobre 2018

Figure 16: Feedback cards

# Collaborazioni con startup

SSERVATORI.NET digital innovation | POLIHUB INNOVATION DISTRICT & STARTUP ACCELERATOR BY FONDAZIONE POLITECNICO DI MILANO

- Come si può creare valore concreto dalla collaborazione con le startup?
- Quali sono le modalità più efficaci per collaborare con le startup?
- Quali processi interni devono essere ripensati per trarre il massimo dalla collaborazione?

Contratti: come formalizzare il rapporto con startup

Processo di valutazione

Passare da sperimentazione a industrializzazione

Modalità per supportare/investire

Come ingaggiare le startup

4

16

6

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26

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Startup Intelligence - Experience Sharing 5 ottobre 2018

Figure 17: Initial questions and workshop results

The part of the workshop reported hereafter, the round table about collaboration with startups, is the most relevant one for what concerns the research questions of the master thesis.

During the workshop the companies' managers were asked to share their experiences of collaboration with startups. Successful experiences had to be reported on green cards, while failures on red ones. If a company did not have a consolidated experience in working with startups, but wanted to know more about the topic, their feedback had to be reported on yellow cards (Figure 16). All the feedbacks were gathered together at the end of the workshop and counted, as shown by Figure 17. The main questions to be tackled during the workshop were: how to create value from collaborations, which are the most effective ways to do it and which processes have to be redesigned in order to profit from the collaboration. On the other hand, the main criticalities identified were related to: how to engage with and formalize the relationships with startups, how to evaluate and support startups and how to go from experimentation to industrialisation.

*The candidates also took part in the final Convention on the 29<sup>th</sup> of November, titled "Imprese e startup nel vortice della trasformazione digitale: alla ricerca dell'innovazione" during which the results of the annual Research have been presented to an audience of more than 300 people by Research Directors and Scientific Officers of Startup Hi-Tech, Startup Intelligence and Digital Transformation Academy Observatories.*

### 3. RESULTS

The results presented in this master thesis, as already anticipated, lean on two main sources: The Survey with 250 answers by Chief innovation officers and Innovation managers of various Italian companies in terms of sizes and industries of belonging and a series of direct interviews to provide significant cases. This chapter will especially deal with those answers which are tightly aligned with the focus of the thesis, but some of the others will be used anyway to depict an overview of how innovation is addressed in Italy. The workshops attended by the candidates, meaningful to gather insights about startups and companies' direct experiences, have been another source of information.

The literature review of the thesis had the following questions at his core:

- I. *Which are the main typologies of relationships that can be undertaken by established companies to collaborate with startups?*
- II. *Which are the pros & cons of each typology?*
- III. *What are and how is it possible to overcome the most critical collaboration factors through contractual or organizational precautions?*

Although having been already addressed and answered in that section from a theoretical point of view, in the candidates' opinion, it is also extremely interesting to try to picture them into the real world relying on the survey and not only providing companies' best practises.

The data coming from the beforementioned sources cannot address literature review questions as they are, so, it is necessary to draw on them to build the new enquires, whose resolution can shed a light on how Italian companies embrace inbound innovation, and in particular collaboration with startups and which issues they encounter.

The following research questions were thus defined:

- ***Which are the main typologies of relationship that Italian companies choose to foster Inbound innovation?***
- ***Which are the most diffused ways to engage in a relationship with a startup and how much does this typically happen in the Italian ecosystem?***
- ***Which are the main problems that Italian companies face whenever they have to start a collaboration with a startup?***

In order to draw a more complete picture this research will also try to address three more questions:

- *How many resources are Italian firms planning dedicate to Digital Innovation?*
- *To what extent is the Open innovation paradigm embraced by Italian firms?*
- *Why some companies stepped on and relinquished the collaboration path with startups? Which are their main traits and which problems they faced?*

From a methodological point of view this section offers an analysis of data coming from the survey 2017 and 2018 to try to point out their main differences. Those pieces of information are typically gathered into dedicated graphs, where, if present, data are articulated in: average value, data from biggest companies, from big companies and finally from medium ones. Each section is dedicated to a different question whose answer is tackled, extracting as much information as possible from the data collected. Finally, it is important to notice that the respondents of 2017, although being numerically similar to the ones of 2018 (252 instead of 250) and extracted from the same database of industries, are not exactly the same. This is the reason why it is not statistically significant the presence of data trends. However, the candidates still identified the main differences from year to year and tried to make assumptions about the underlying reasons, as if those differences reflected a real trend. Of course, none of those hypotheses can be sustained to declare the veracity of an occurring phenomenon without making further and systematic multiannual researches.



### 3.0 Digital Innovation and ICT Trend

The starting point of this section is the same recognized in the literature review. Digital Innovation trends are continuously growing in recent years, coherently the ICT budgets for the interviewed firms registered a significant growth from 2018 to 2019. 39% of firms declared having decided to increase the ICT budget for 2019 and more than one third of them has dedicated resources to ICT with an increase exceeding 10%.

The average increase of ICT budget for contacted the firms is between 2,6% and 2,7%, with Big firms leading the change with +4.8%. These figures clearly show how Italian firms have finally recognized the important of Digital Innovation and have decided to dedicate the required resources to it.

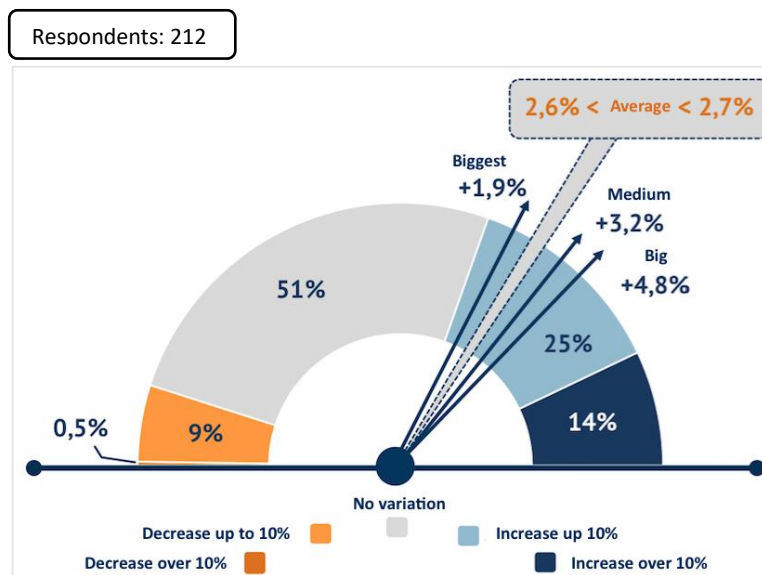


Figure 19: Budget ICT trend - 2018 vs 2019

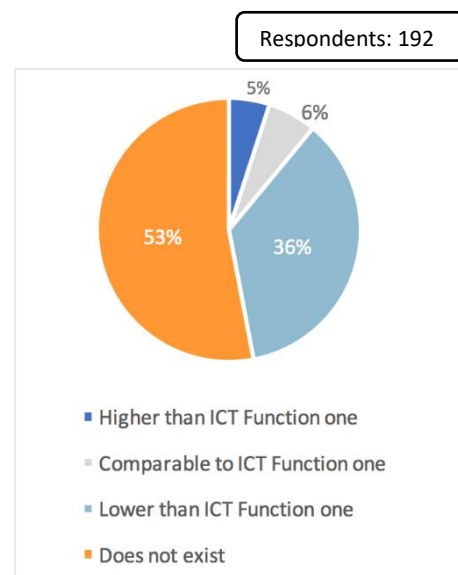


Figure 18: Digital innovation budget outside ICT function

Another important piece of information extracted by the data of the survey is the amount of resources dedicated to Digital Innovation outside the perimeter of the ICT Function. In particular, 47% of contacted firms declared dedicating resources to Digital Innovation also outside the ICT direction for the year 2019.

It is also significant to underline that in 6% of cases, this budget is comparable to the one of the ICT direction, and, in 5% of cases, it is even higher. It is then possible that Italian firms are more and more acknowledging that Digital Innovation has not to be confined in the

perimeter of the ICT function but needs to become liquid in the organization to lead to concrete benefits.

### 3.1 Open Innovation

#### 3.1.1 Open Innovation adoption

The question of the survey reported below was created in order to try to estimate the adoption level of the Open Innovation paradigm in the Italian environment.

*Does your company adopt Open Innovation approaches for digital innovation?*

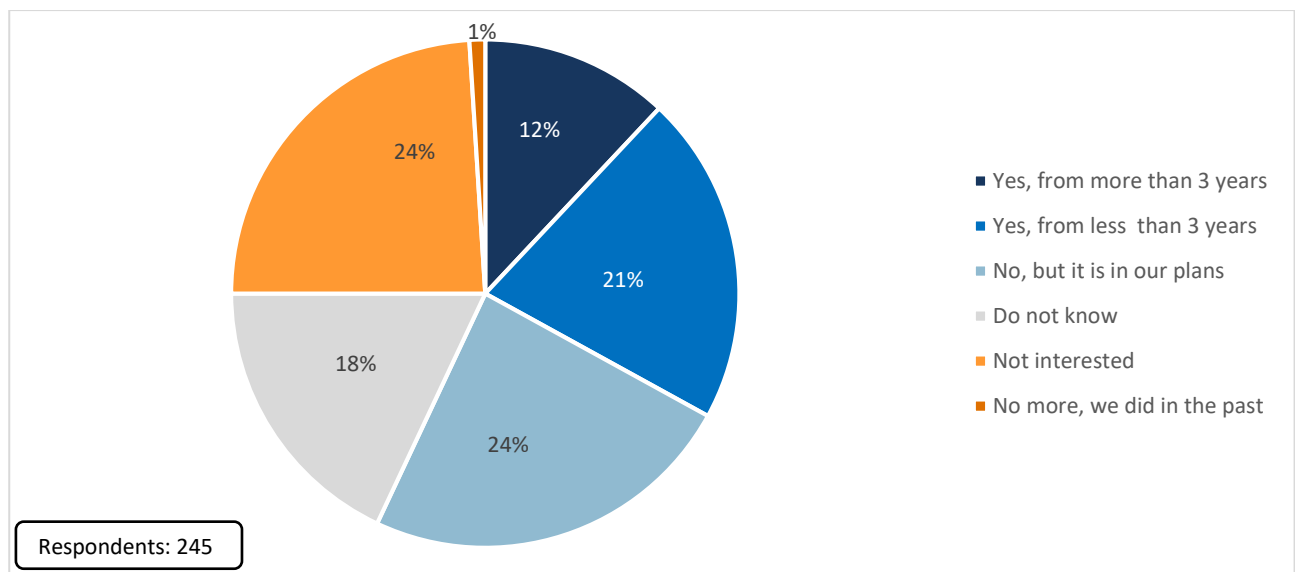


Figure 20: Open Innovation adoption

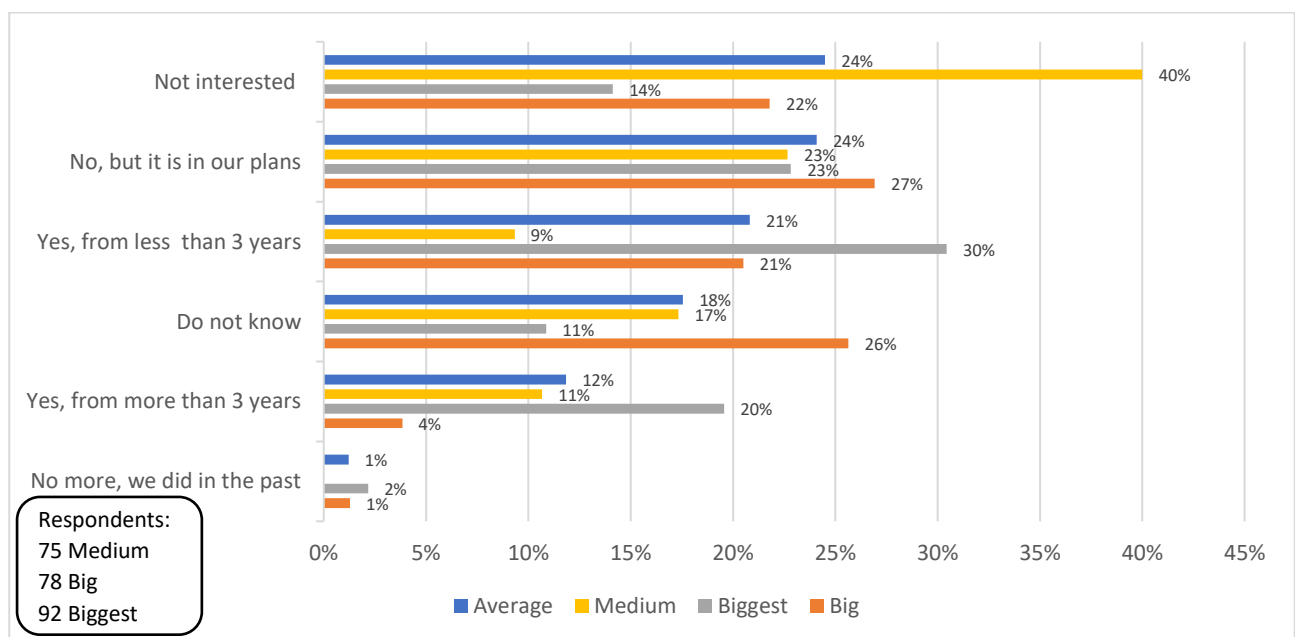


Figure 21: 2018 Adoption of the Open Innovation approach - dimensional breakdown

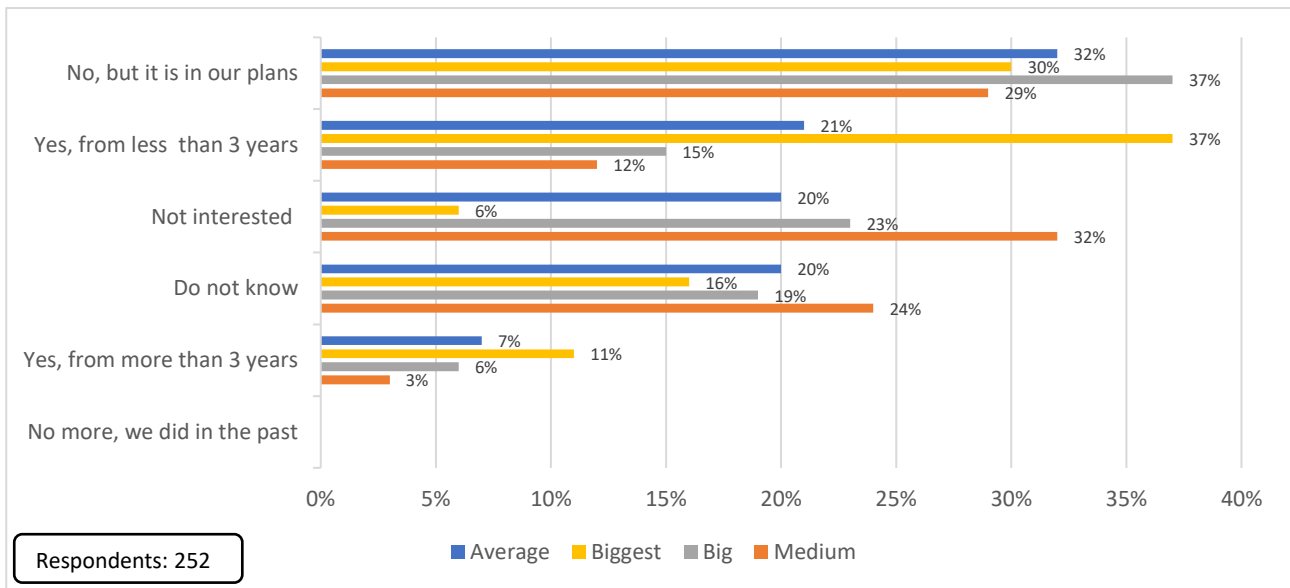


Figure 22: 2017 Adoption of the Open Innovation approach - dimensional breakdown

Data from the 2018 research shows that on average 33% of the sample claims to have implemented Open Innovation approaches, but only 12% from more than 3 years, so the majority of them is relatively new in the field. This value has seen an increase from the 28% of 2017, which might indicate that more and more companies are not only planning to do it (32% in 2017 – 24% in 2018), but also putting it into practice. In particular, the most important shift was that 10% of big companies supposedly moved from plan to action with respect to the last survey. Analysing in a deeper way the Open Innovation adopters it is possible to identify an important change in the percentage of biggest firms, therefore the latter might have kept on with their collaboration plans, so long as the 3-year threshold was crossed, arriving up to a 20% (11% in 2017). This value is potentially feasible in terms of order of magnitude inasmuch as its increase is connected to a -7% of biggest firms adopting it from less than 3 years. As already anticipated in the introduction to the results section, these assumptions are just qualitative observations, which cannot be treated as hypothesis to assert the existence of a trend in the Italian environment without further enquires.

The still steady percentage of respondents claiming that they do not know if the Open Innovation paradigm has been adopted for digital innovation reveals a problem of knowledge spreading about these topics and in general is an indicator for companies that a lot has to be done yet for what concerns involvement of internal people and creation of commitment.

Another negative insight that can be drawn from these data is that the percentage of firms not interested in the matter is quite high: 24% in 2018; it was only 20% in 2017. This difference is due to the fact that in 2018 survey more medium (+8 %) and biggest firms' (doubled from a value of 6%) claimed a lack of interest for this new model to handle digital innovation.

### **3.1.2 Open Innovation as a necessity – An Italian Industrial Company Case**

This case owes its positioning to the peculiarity of answers which were collected from this interviewed company. In fact, first of all the Open Innovation approach as will be explained later on is perceived as fundamental to compete in the present-day environment and not just a “fancy” new theory. Secondly, the process to find partners that led to startups and innovative ventures is not designed to screen explicitly that typology of firms, but starting from a company need, the aim was to identify the best possible answer on the market in terms of performances and solution fit. The idea thus was not to start a collaboration around a particular problem looking only at startups to “follow the trends” but expecting to have a better solution than the one offered by tech giants in terms of costs and comprehensiveness. The strengths of startup or innovative ventures are different and therefore, they are not always the best solution to a particular need, understanding when it is the right time to rely on a startup may sometimes be difficult. The company's solution was to require solutions for their problems opening the call both to regular firms and innovative ventures. The only drawback of this solution is that it is not possible to identify particularly promising early stage startups still without a product/service, but it was not the underlying objective.

The interviewed Company is an Italian industrial multinational corporation. Its case is significant to understand why corporate firms came up with collaborating with startups. Open Innovation is an important trend nowadays and some firms approach this paradigm with a ‘follower’ mindset, rather than because they truly believe it could be an effective way to develop innovation.

This was not the case of this firm. As the interviewed manager explains, their first cases of interaction with startups happened fortuitously. In particular, no actual and structured Open Innovation program was being implemented within the firm when these interactions began. It simply happened that, as the firm was searching for a technological solution to answer to a particular exigency inside the Company, some startups were actually providing

the best one on the market and therefore they were chosen as suppliers. This occurrence shows that Open Innovation is no more, for firms, a 'choice' alternative to other paradigms to develop innovation, but an imperative to survive.

Now, after these first successful experiences, the Company is actually planning to implement a more structured Open Innovation program with call for startups, scouting with innovation brokers and CVC. At the present, the type of possible relationships with startups is now going from supplying to co-development partnerships, with some cases of direct investment. The vision however remains the same: this paradigm is effective only if it provides concrete solutions. This choice to adopt explicitly the Open Innovation paradigm is particularly meaningful considering that the interviewed company has a strong R&D unit and operates in a very complex and challenging environment for what concerns technology and innovation. Thus, even in a situation in which the expected advantages from this adoption are probably lower, the Italian multinational decided to go down that path anyway. In so doing, their objective was on one hand to further strengthen the internal competences and on the other, to try to seize from the outside innovation ideas in those technological areas which were less mastered on the inside.

Moreover, it is important to carefully consider all obstacles associated with startups collaborations, in particular when dealing with such big firms. The main issues faced by the Company are associated to: due diligence management, Intellectual Propriety rights and having people working inside the startup to be committed with orientation to the long period. Issues related to the due diligence were solved through the adoption of new parameters applied to the standard selection processes, suitable for startup evaluation. Intellectual Propriety issues on the other hand, were solved adopting a clear and coherent IP management strategy, supported by the dedicated unit inside the Firm. Finally, the major obstacle encountered was bureaucracy: given the nature of the interviewed Company, collaborations and supplies are subjected to precise legislations and regulations, which startups have to cope with, usually facing significant obstacles given by the lack of an administrative office and experience and competences on these matters. So, it is important to try to lower as much as possible the boundaries given by excessive bureaucracy and regulations.

### 3.1.3 Typologies of Inbound Open Innovation

This subsection deals with the question of the Survey 2018 aiming at understanding which are the most diffused practises to perform Inbound Digital Innovation in the Italian industrial environment.

*Which practises did your company embrace to perform Inbound Open Innovation?*

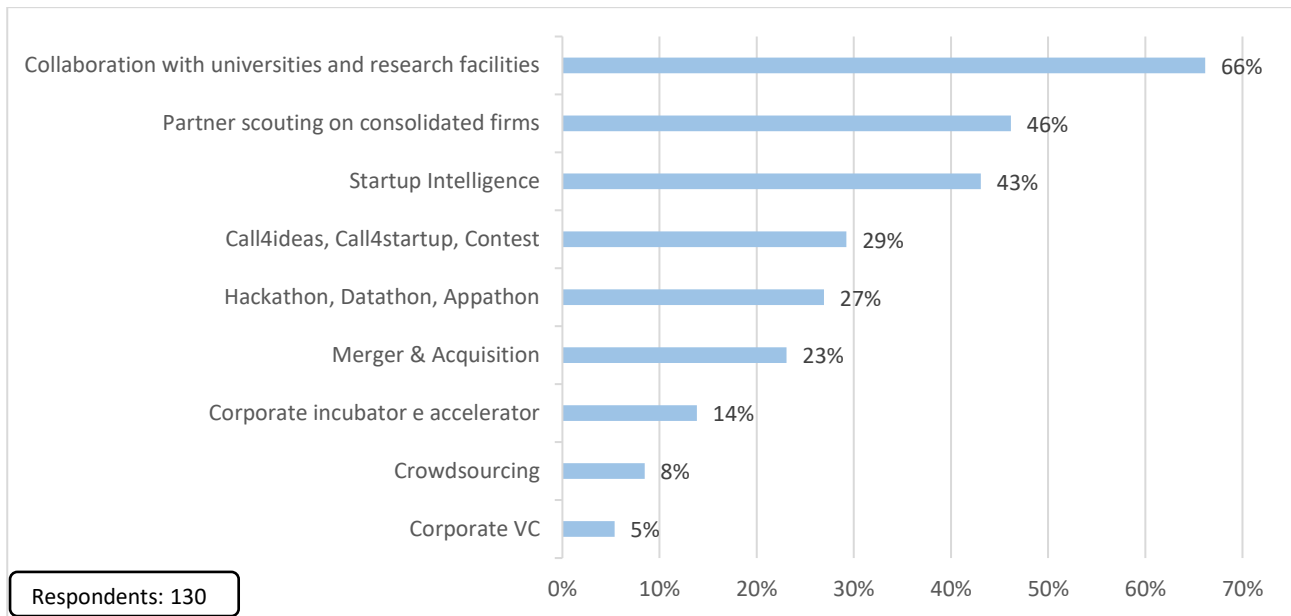


Figure 23: 2018 Typologies of Inbound Open Innovation<sup>23</sup>

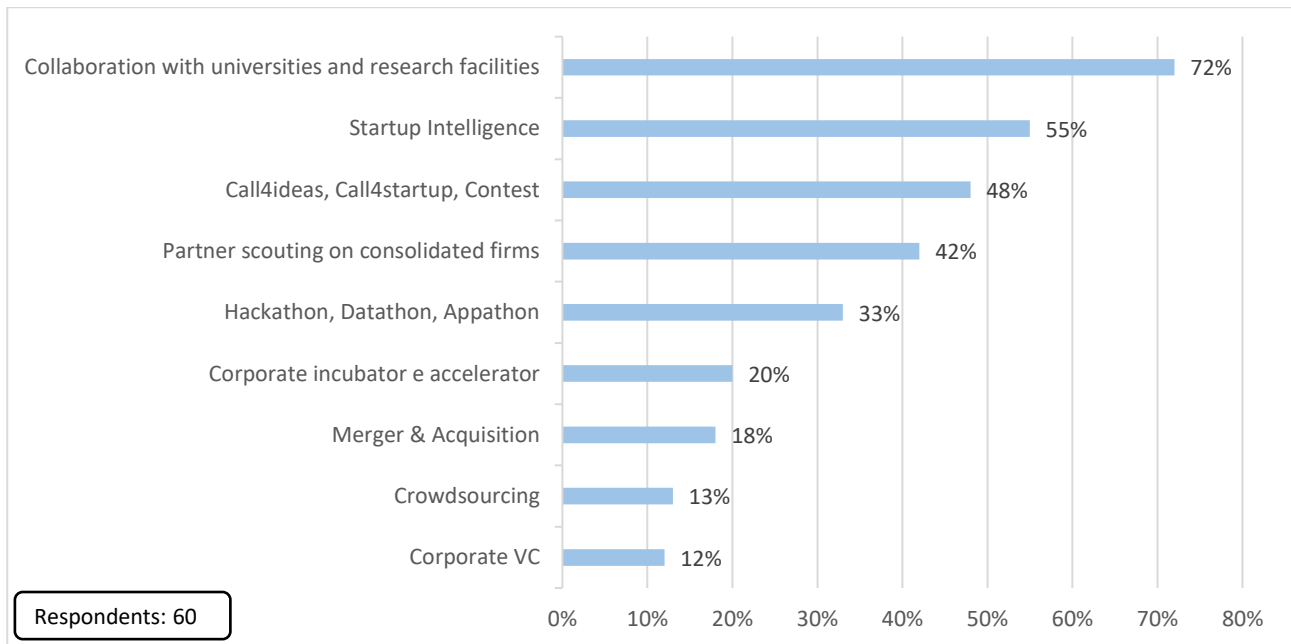


Figure 24: 2017 Typologies of Inbound Open Innovation

<sup>23</sup> This data considers also respondents who claimed not having implemented Open Innovation approaches, but that at the same reported having performed one or more Inbound practises

In particular, the focus of this paragraph is on those practises that were discussed in the literature review section to understand their relative importance for Italian companies. A methodological aspect, for what concerns the collection of data, that needs to be underlined is that the possible answers in this section were not mutually exclusive, therefore a firm could choose more than one option.

The first element to be remarked is that from year to year the situation has changed in a significant way. In particular, the practice of scouting established firms in search of digital innovation partners is the second best of 2018, instead of startup intelligence as in 2017. This might be a signal that companies after a first period in which the Open Innovation paradigm was characterized by a strong focus on new ventures are moving towards partnerships with more “safe” partners. This reflection has also been inferred from the interviews conducted for this master thesis, which in more than one occasion reported cases of shifts towards more reliable and tangible digital innovation solutions, with less interest in the yet-to-be-defined offers of startups. This is due to the need of firms to implement those changes as fast as possible to compete in the increasingly competitive and digital environment, a fact that sometimes hinders early stage startups which a lot of times lack a ready-to-go solution. According to this potential hypothesis, firms might then be relying more and more on later stage ventures with a better financial and product/service soundness.

However, in 2018, startup intelligence still remains in a good position with 43% of “practitioner” firms probably to monitor the new direction of technological development and to prevent being blindsided by disruptive innovations.

In a halfway position in the Figure 23 it is possible to find “Call4ideas, Call4startup, Contest” (29%) and “Hackathon, Datathon, Appathon” (27%) which is comprehensible inasmuch as they offer the possibility to solve a specific issue or need with low expenses and no need for a complex organisation.

Concerning “Merger & Acquisition”, it is interesting to point how that the value is lower than the one reported in 2017. This might be due to a better understanding of the startup which is far from being a possible new business unit and which can be destroyed in its innovativeness by an ill-considered acquisition.

The less implemented practices to Inbound Open Innovation according to both surveys are “Corporate incubators and accelerators” and “Corporate VC”. The former is a very expensive

solution from an economical, an organisational and human resources point of view, therefore it is no surprise that very few respondents claim having implemented them in-house. Concerning “Corporate VC” instead a value so low of performer firms is harder to be interpreted. Perhaps only few big holdings or multinational groups feel confident enough to bear the risk of acquiring a startup, especially in the light of the fact that the Italian entrepreneurial environment is typically very risk adverse. In any case this inbound practice is for sure a possible candidate for further analysis.

### **3.1.4 Inbound Open Innovation - TIM Case**

TIM case is particularly relevant for what concerns the implementation of Corporate - Startups programs in a big company and a good example of how the latter can put a partner in the best conditions to develop its ideas. Hence its positioning in this section, whose aim is exactly to analyse the different Inbound practises of collaboration. This case is also particularly significant since it remarks a tendency which has already been detected during the workshops and can even be perceived by looking at the survey data. The former is the shift towards more mature innovative ventures as collaboration partners, instead of looking for early stage startups. The reasons for that will be tackled later on in this paragraph and in the final conclusion of the master thesis.

TIM is the main Italian Telco company and, as such, together with its industry, it has witnessed the whirlpool of **digital innovation** catching and turning upside-down its traditional business model. This obliged the company to find innovative products, services and businesses to keep the leadership of the market. An innovative way to do so was the implementation of **Open Innovation** programs, and among these, in particular the interaction with **startup** businesses.

As of 2018, after a period in which the focus of the programs was on early stage startup investments (Call for Startups), TIM is now converting its accelerators into **Innovation Hub** where innovation can be developed more concretely thanks to more mature startup and small-medium firms (Call for partners). The main objective is to enlarge the portfolio of services and products offered by TIM by intercepting Innovation in a quick and cost-effective manner.



The Innovation Hubs are five all over Italy and their goal is to provide startups and firms with platforms and instruments to develop their concepts, so that their solutions are then ready to use and viable for TIM.

Besides doing that, TIM programs implement other support tools to smooth the difficulties they may encounter. Startups which collaborate with TIM have indeed a **dedicated priority path** to be inserted in the supplier register. Moreover, **payment terms** are strongly reduced with respect to regular supplying relationships with established partners. **Contracts** too have been adapted to the requests of partners even when the TIM focus shifted from early stage startups to more mature ventures, in particular as far as **Intellectual Propriety** is concerned. From a scenario in which TIM had the exclusivity on the solutions developed within its hubs anyway, they grant nowadays contracts according to which the exclusivity is applicable only if customization requirements are introduced.

However, according to Leopoldo Tranquilli, Head of Working Capital and Open Innovation in TIM, the success of these initiatives does not simply come from these precautions. What is fundamental is the **involvement** of the internal customer: all over the organization people have to be convinced that innovation is now a necessity rather than an opportunity. Nowadays, for Innovation Managers talking the rest of the company into it has become a key aspect to achieve concrete results.

### 3.2 Collaboration with startups

The question of the Survey 2018 at the core of section 2 was made in order to try to quantify the number of firms which collaborated with new ventures at some point of their path towards digital innovation.

*Does your company collaborate with startups?*

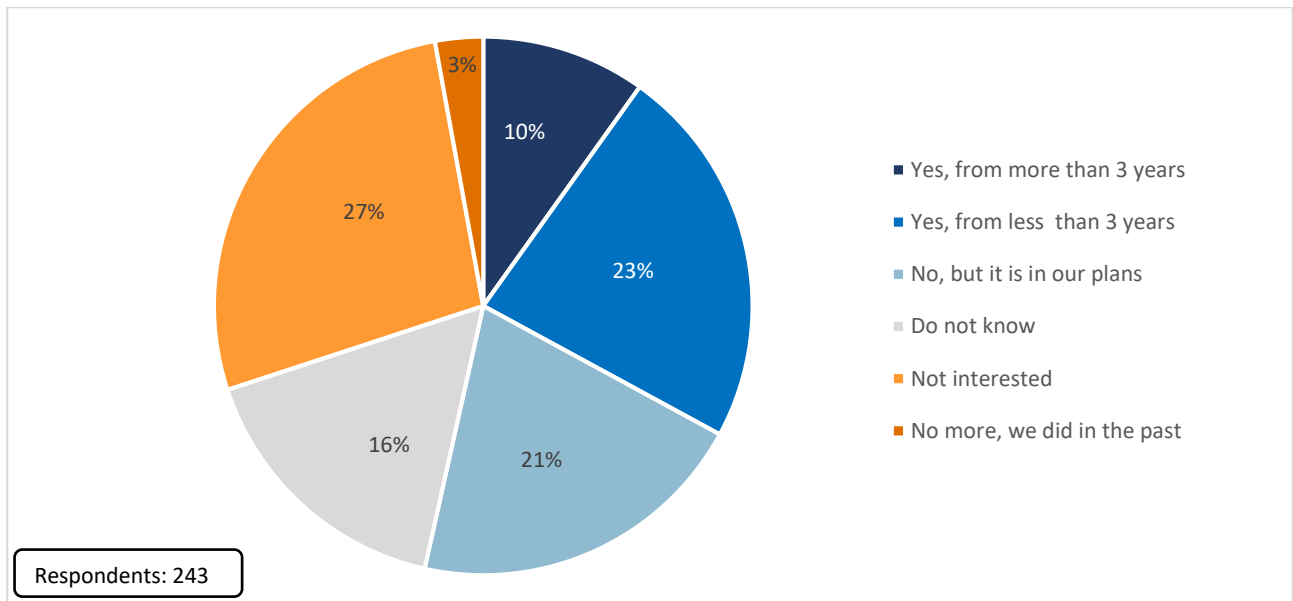


Figure 25: 2018 Collaboration with startups

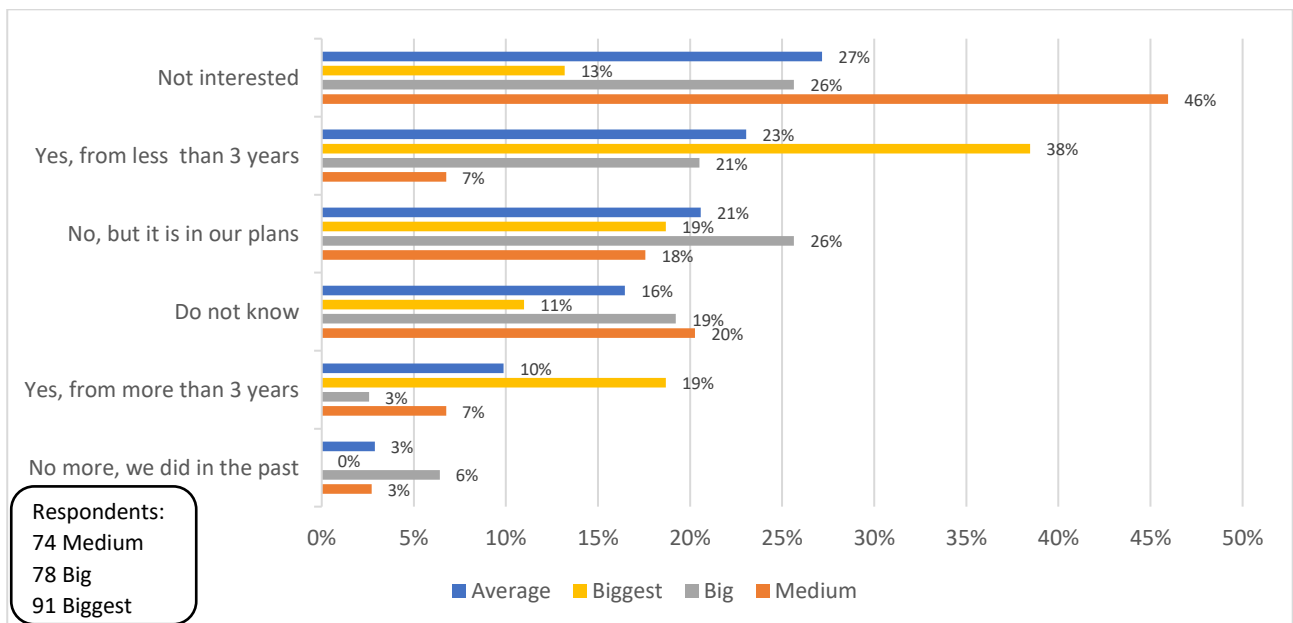


Figure 26: 2018 Collaboration with startups – dimensional breakdown

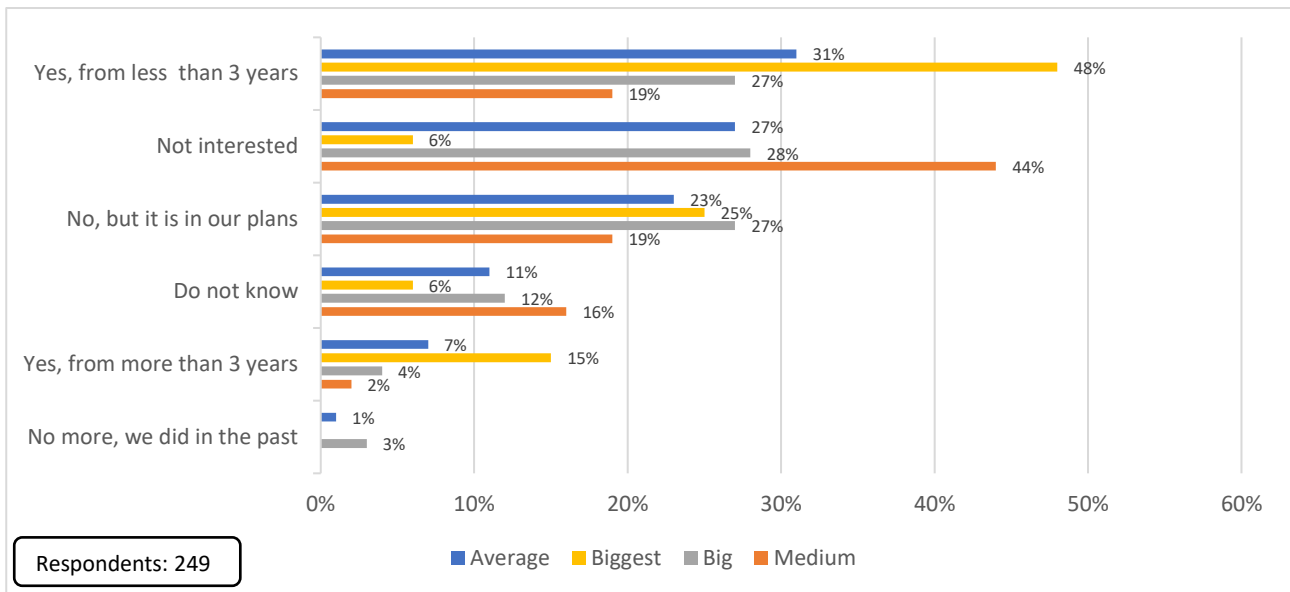


Figure 27: 2017 Collaboration with startups – dimensional breakdown

Data from 2018 reveals that on average 33% of respondents collaborated with startups at least once in the last years and 10% of them has even been doing it from more than 3 years. As it was possible to expect the lion's share comes from the biggest firms, which perhaps relying more on their funds and organisational structure to handle in a seamless way startups peculiarity, collaborated in the 57% of the cases. From Figure 26 and Figure 27 it is possible to remark a shift towards the long term commitment to the practice of collaborating with startups as an innovation partners, which, if proved to be a real trend, might be a good indication for what concerns the Open Innovation paradigm and in general the openness to new ventures of Italian firms.

However, there are shadows too, in fact 16% of companies claimed to be not sure about whether or not their company should collaborate with startups and this might reveal that on the awareness of the topic a lot still has to be done. In particular, in terms of making clear within firms that digital innovation impacts the whole company and not only ICT or specific teams and that it is likely the only way to make the difference in the present-day competitive environment.

The other potentially negative observation, if proved to be behind a real phenomenon, is the increase of firms claiming that collaborating with startups was something they did in the past, but apparently a source of so serious problems that they ceased to do so. This can be seen both as a signal that the topic of this master thesis about the identification and discussion of collaboration problems might be helpful to companies and would be worth of

a further enquiry by scholars and that there is a concrete risk that these issues might seriously jeopardize the collaboration with startups as one of the ways to carry out Open Innovation.

Finally, it is worth to mention that in 2018 the highest average percentage was the one of “Not interested” firms with a value of 27% (same of 2017), meaning that it would be worth to look deeper into these firms to understand why they are not interested in startups as source of digital innovation and what can be done to help these firms overcome their hesitations or their reasonable concern about the drawbacks these collaboration can sometimes bring along.

### **3.2.1 Collaborating with startups - Legrand Case**

Legrand is a French industrial group founded in 1904 in Limoges. Legrand’s case is an example of collaborations with startups implemented outside of an explicit Open Innovation initiative. As Danilo Bernasconi, Building System R&D Manager in Legrand, explains the innovation partners are chosen according to their capacity to answer to the company’s needs. Startups are selected then whether they prove to be able to provide the solution required.

Legrand typically thinks in terms of individual projects as far as these practices are concerned and thus manage the relationship with startups one by one. The contractual phase is managed by the procurement function, which is a cross functional unit, assisted, if necessary, by the legal team. Whereas the definition of the product characteristics is handled directly by the R&D function.

Legrand works with startups through co-development or supply relationships. However, according to the interviewed manager, in most of cases there is not supply without at least a minor phase of co-development.

Despite not having a dedicated structure for collaborations with startups they have not experienced any remarkable issue, in terms of IP management, objectives definition or communication. In this regard, Danilo Bernasconi points out that it is vital to understand that startups are a very peculiar partner in order to know in advance how to handle specific situations.

On the contrary advantages associated to the collaboration with startups are significant. Besides the fact that Legrand can access innovative products developed with state-of-art technologies, working with startups allows to enter a network of partners easing the access to innovation. For a structured company this is indeed a veritable challenge: develop an open mindset is mainly important in a context with a high risk to stay too conservative. Finally, collaborating with startups allows people to develop an entrepreneurial spirit as a way to really feel engaged with the developed product, gaining motivation and commitment.

### 3.3 Relationship typologies

In the wider framework of collaboration with startups, the survey question at the core of part 3 has the aim of understanding which the role of startup partners in their interaction with firms is.

In particular firms were asked:

*Which type of relationship has been implemented with startups you work with? The startup is...*

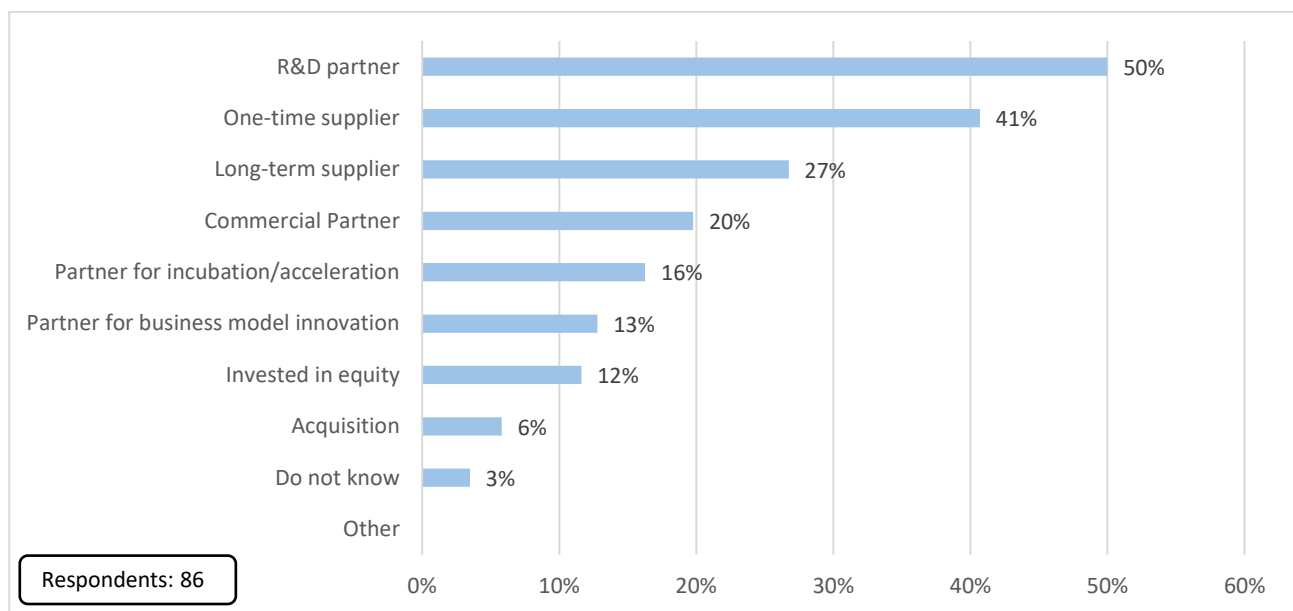


Figure 28: 2018 Relationship typologies

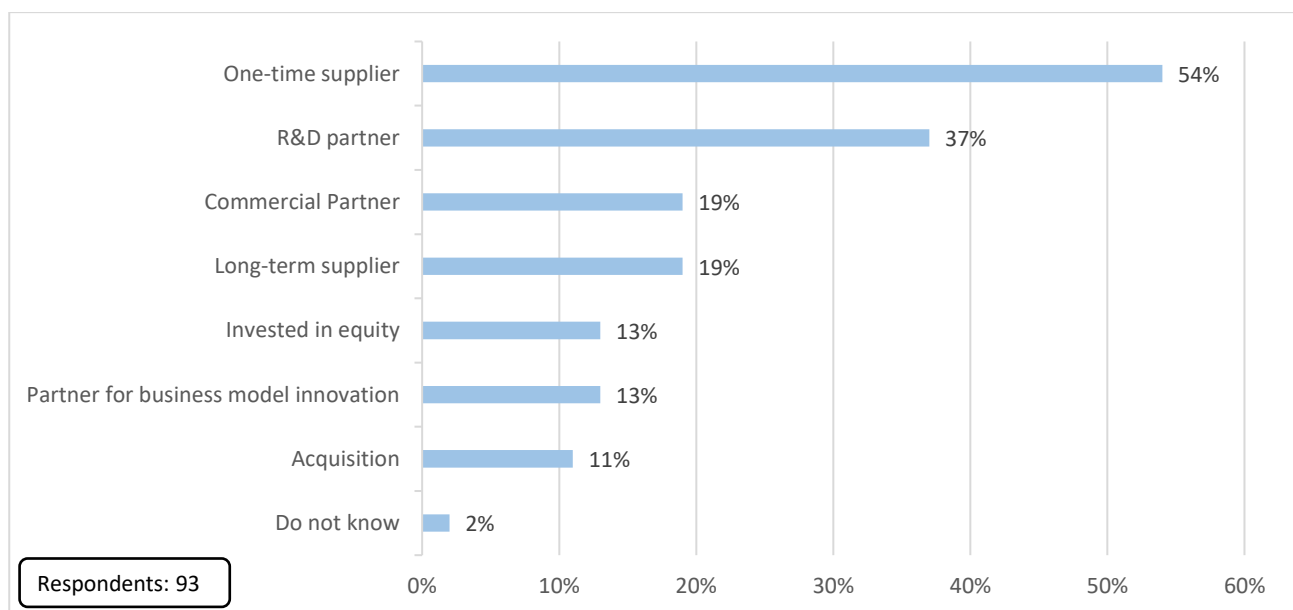


Figure 29: 2017 Relationship typologies

The first relevant thing to notice is that among those firm who have or had relationship with startups, half of them have collaborated with them as R&D partners with thus the purpose of co-developing products and services. As acknowledged in literature, this happens mainly when startup and firms have complementary competences over different areas. It is meaningful to notice that it is an important difference to 2017 where “R&D partner” was in second position with 37%.

On the other hand, “startup working as one-time supplier” shifted to second position. This however might be explained by the increase in percentage of the answer “long-term suppliers”. Firms working with startups as *una tantum* suppliers might indeed have upgraded them to long-term ones after a first phase of experimentation of the relationship and evaluation of the POC. Thus, if proved to be a real ongoing trend, it might be an index of the success and satisfaction of already implemented supplying relationships with startups.

Commercial partnerships are other relevant typologies of relationships and were implemented in 20% of cases. Through them it is typically possible to identify jointly new business models and gain access to channels which without startups would have been closed.

Lower, but certainly not insignificant are the percentage related to “startup as a partner for business model innovation” and “startup as partner in incubation/acceleration” which are comparable in terms of values to last year findings.

Finally, investment in the equity of startups and acquisitions account for 12% and 6% respectively. This is typically done to diversify a firm’s portfolio or to gain some specific assets. As acknowledged in literature, these typologies are characterized by different drawbacks: first of all, a higher financial commitment of firms. Moreover, investment in startups, especially in early stages, do not provide high return (if any). Thus, to gather revenues as soon as possible, startups may be pushed by corporate investors to develop products and put them on the market earlier than when they would naturally do. This may have a negative impact on startups innovation capabilities, ending up with a risky condition for them. The general trend of preferring other types of relationship with startups rather than investment and acquisitions is also confirmed by information gathered in the conducted interviews with established firms.

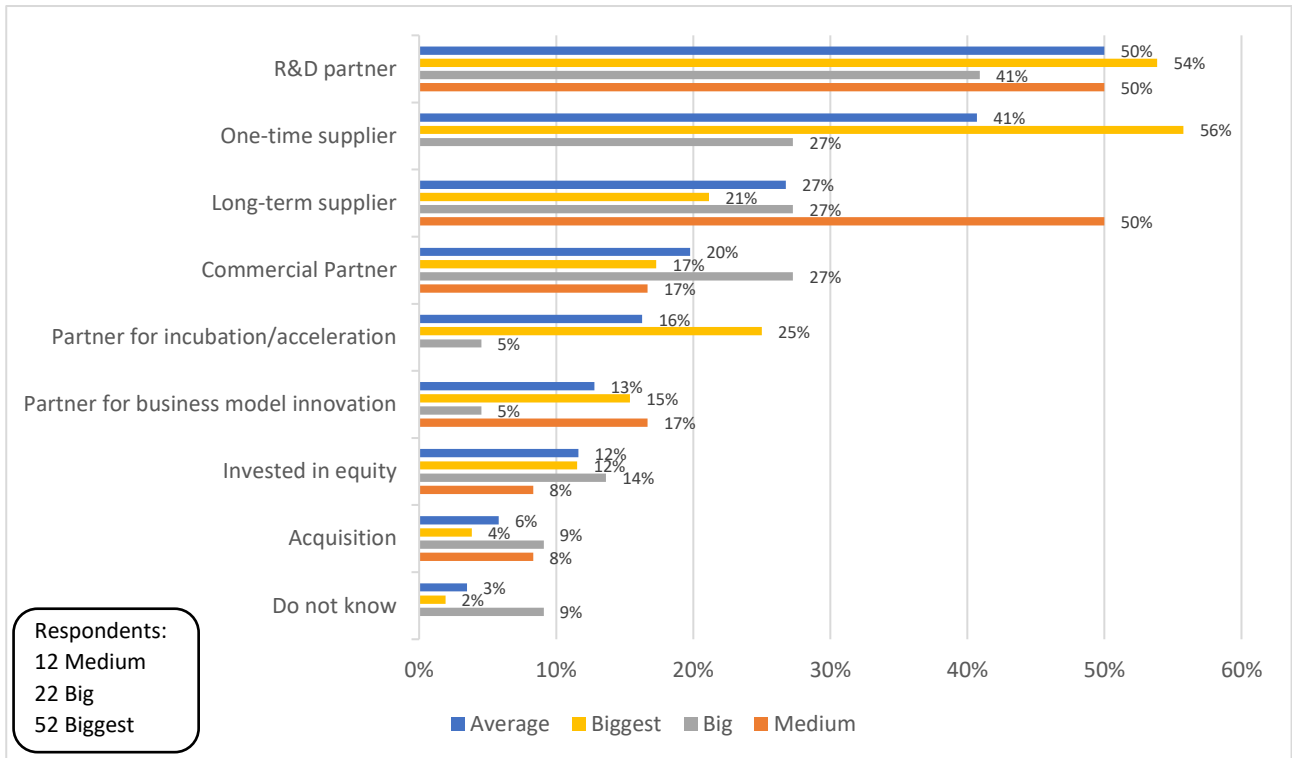


Figure 30: 2018 Relationship typologies - dimensional breakdown

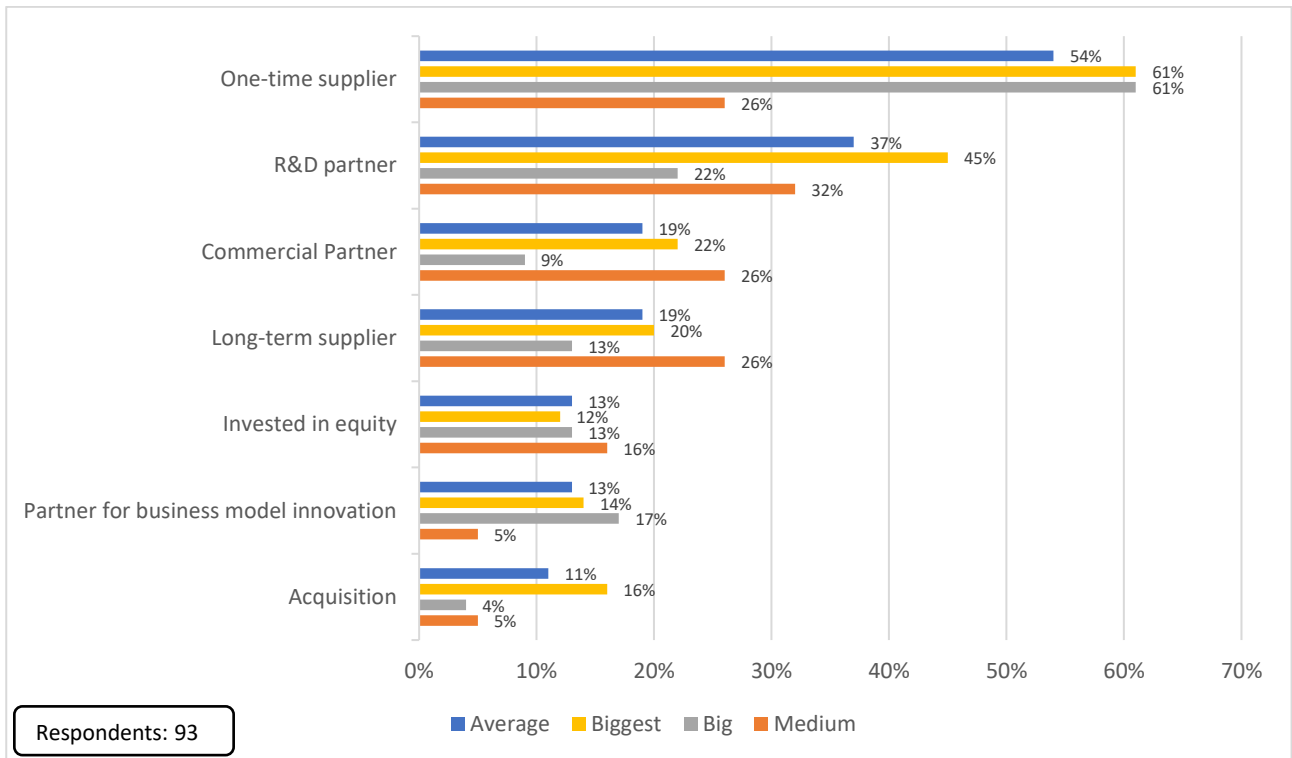


Figure 31: 2017 Relationship typologies - dimensional breakdown



### 3.3.1 An Italian Corporate-Startup Collaboration: ISEO – Sofia case

ISEO and Sofia case is a clear example of a successful collaboration developed between an established firm and a startup. It is likewise a source of useful information to try to understand the different **types of interaction** on which they worked on jointly, the related **objectives** and, more importantly, the **essential success factors** of such activities. It is positioned in this section since it offers insights and simple best practises in order to manage in an efficient and effective way a relatively complex collaboration. In fact, the interactions under consideration are not just supplying ones, but also for instance R&D joint development and co-branding.

ISEO Serrature was founded in 1969 and began producing locks, cylinders and padlocks in Pisogne on Lake Iseo, in Italy. As of 2018, it is a group present in more than 15 countries all over the world and its activities range from smart access control to people safety and anti-intrusion security. Its products include now door closers, emergency devices as well as electronic solutions for smart access.

Sofia is a spin-off of Bottega52, a company operating as a software house since 2014, in the Internet of Things market. Sofia's value proposition consists in developing, integrating and commercialising distributed infrastructures for modern, mobile based and cost-effective control access systems.

In few words, the collaboration between ISEO and Sofia thus consists in the development of innovative solutions for smart access control, where ISEO is responsible for the hardware and mechanical supply, while Sofia for the software one. However, as explained hereafter, this is only a part of the actual relation which has been established between them.

As Maurizio Zama, responsible for R&D in ISEO, explains, there were mainly two reasons which pushed ISEO in search of a partner like Sofia. First, the **high competition** on the mechanical market coming from low labour cost countries; second, the general trend of the market which was (and is still) asking for **innovative digital products** capable of granting more than the simple primary functions. It was however a big challenge for ISEO, since they immediately realised their shortage of software know-how to successfully compete in that evolving context.

At the same time, Sofia had decided to focus on a specific application of IOT technology: smart access control and was in search of a partner to provide the hardware for their idea.

The existence of these compatible needs put the basis for the collaboration, which evolved on two different tracks. On one hand, Sofia through its parent company Bottega52 started first providing consultancy to ISEO R&D department and then became also their software development **supplier**. On the other, Sofia and ISEO started working jointly for the **co-development** of specific offers, where Sofia dealt with the software side of the solution and ISEO with the hardware one.

As concerns **Intellectual Property rights**, the related matter was tackled differently for the two sides of the collaboration: in the case of consultancy, IP rights were given to ISEO. As far as the development of joint solutions is concerned, Sofia remains the proprietary of its solution with ISEO having a licence to use it in its products without limitations. An ESCROW clause was included to protect ISEO in case Sofia had stopped its activity or lost its autonomy (for example: after an acquisition by an ISEO competitor).

One of the success factors of this collaboration was the **governance** of the relationship, which was characterized by frequent, direct and continuous interactions between the two partners. Sofia and ISEO frequently shared information and referential people were easily identifiable by the startup's representatives: R&D members in the first case, and product managers in the second one.

Another related critical success factor according to Sofia's CEO, Alessandro Nacci, was the easiness in talking with ISEO: both because of the open **mindset** of its workers, but also because of its 'flat' organization, which made it simple for Sofia's managers to identify the right person to talk to for any specific issue. According to Maurizio Zama too, the open **culture** of ISEO people was fundamental for the success of the collaboration.

Moreover, ISEO granted Sofia quick **payment terms**, at 30 days, and by hiring Sofia for consultancy services provided them with resources for the development of their solutions, without hindering their innovation drive (for instance by directly acquiring them).

Finally, according to both managers, the key success factor was **commitment**. Both parties had to trust the partner and strongly believe in the idea they were jointly developing.

### 3.4 Collaboration critical factors

This section tries to understand which are the main collaboration issues which have been encountered by those Italian firms which are approaching startups or have done it in the past.

The question which firms were asked is:

*Which of these critical issues have been encountered in the formalisation of the relationship with a startup?*

- **Communication Problems:** *difficulties in managing the communication between the company's managers and startups'*
- **Collateral Formalization:** *problems in the formalization of collaterals to safeguard both parties in case of misbehaviour or unpredictable events*
- **Intellectual Propriety:** *difficulties in the management of Intellectual Propriety Rights within the collaboration*
- **Due Diligence:** *issues in the management of the qualification processes*
- **Non-Disclosure Agreements:** *complications in the definition of confidentiality agreements*
- **Deadline Alignment:** *issues in the alignment of the two parties on the deadlines of the collaboration process*
- **Payment Terms:** *problems in the management of payment schedule and down payments*

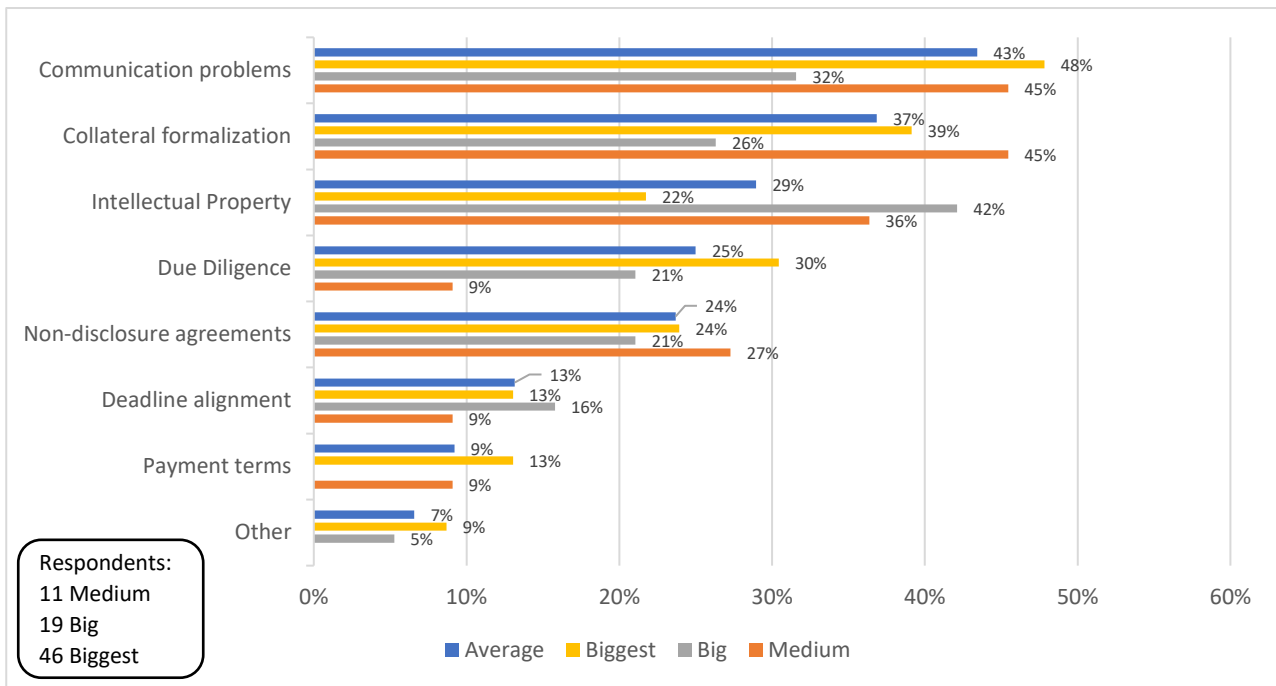


Figure 32: Main collaboration problems

The most critical factor highlighted by firms is the handling of communication problems. This issue has been experienced in the 43% of collaboration cases. As found out in literature, firms and startups talk different business “languages” and have a completely different internal culture, therefore sometimes reciprocal communication may be tricky and difficult. Startups and firms have very dissimilar organisations too: for the formers it might be hard to find in the firm the right person to talk to for any specific issue, if of course dedicated units for startup relationships are not present. This may undermine the success of the collaboration. Moreover, a good coordination, which results from a good communication, is necessary to understand at which point the partners are in their development path of the common project.

Collateral formalization issues are the second most frequent in corporate-startup collaborations: they are present on average in 37% of cases. They are mainly related to guarantees which are necessary to protect themselves in the relationship. In particular, working with startups is associated to higher risks if compared to more mature partners, thus inserting collateral in contracts is fundamental. Example of risks may be the early failure of a startup business or their acquisition by competitor firms. In these cases, collateral may consist in ESCROW agreements where a provision of a certain service or product by a startup partner is ensured, even if one of the two aforementioned events occurs.

It is relevant to notice that this problem is more frequent in medium firms. For medium firms the perceived risk of collaborating with startups could be higher, thus the related

collateral and guarantees may be considered more critical. In fact, one of the factors that influence the capacity to cushion the impact of ineffective collaboration is the organizational superstructure which is proportional to the firm size.

A frequent problem is the one related to Intellectual Property Rights and Non-Disclosure Agreements: these issues have been experienced in 29% and 24% of cases respectively. These are typically encountered more in R&D and Innovation partnerships, than in the supplying situations. Moreover, they can be particularly critical on startup side, more than on firm's one. According to some interviewed Italian firms, these issues are experienced more because startups are often too worried that someone is going to steal their idea, than because of actual risks.

IP problems cases are particularly reported by Big firms and less by Biggest firms, which may suggest the existence of relevant differences in the IP management practises which would deserve further inquiry.

Problems in the due diligence have arisen in 25% of cases. It is a significant data to understand how adapting to startups processes of evaluation and selection tailored for mature partners is a difficult challenge for firms. Creating totally new parameters to evaluate them is fundamental, since traditional instruments cannot be used for such young businesses.

Problems related to deadline alignment and payment terms, though present, seem not to be so relevant if compared to others, for this array of collaboration typologies. They have been reported in 13% and 9% of cases respectively. Interviewed firms confirmed indeed that adapting payment terms to the necessities of startups was not a particularly difficult challenge and should be taken into account as a necessity as soon as the collaboration starts.

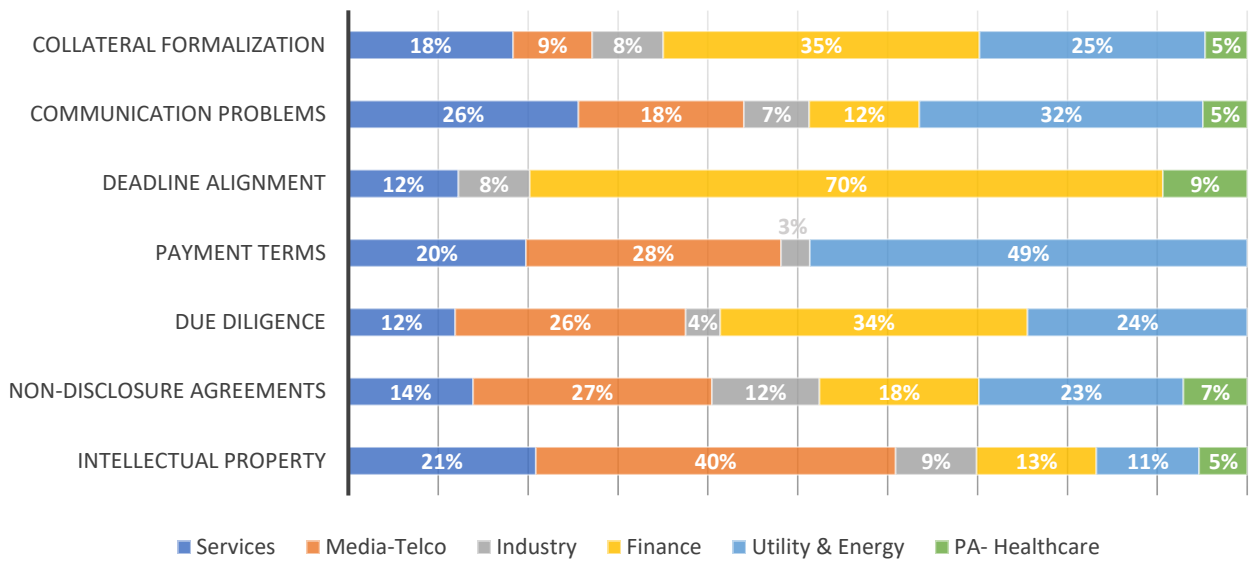


Figure 33: Sectorial breakdown of collaboration problems

As concerns the sectorial breakdowns of these critical issues, some elements should be noticed. First, the occurrence of IP problems in Media & Telco companies collaborating with startups is far higher than in other sectors. It may be related to the co-development of digital solutions with startups for which defining the rights held by each party once the service is developed is critical. Second, deadline alignment problems have been experienced in particular by Finance firms. As concerns the payment terms, this seems to have been a critical issue in Utility & Energy firms, which may suggest their trouble with the reduction of suppliers' payment times.

In order to understand the importance of each factor, a further analysis has been carried out. In particular, as acknowledged in the first section of this chapter, some firms revealed that they had collaborated with startups, but that later on they ceased to resort to those practises. It is then relevant to try to understand why they did so and if some collaboration critical factor played an important role in this change of mind.

The critical issues reported by these firms are shown in Figure 34. In particular, three of them highlighted communication and collateral formalisation problems: this could be a sign of the significant criticality of those problems which thus should be taken into account as soon as possible to prevent failure. Intellectual propriety, Non-Disclosure agreements and Due diligence related issues were identified by one firm each. The numerousness of the sample is not however sufficient to give statistical importance to the abovementioned hypothesis, a further research is necessary to really shed light on the topic.

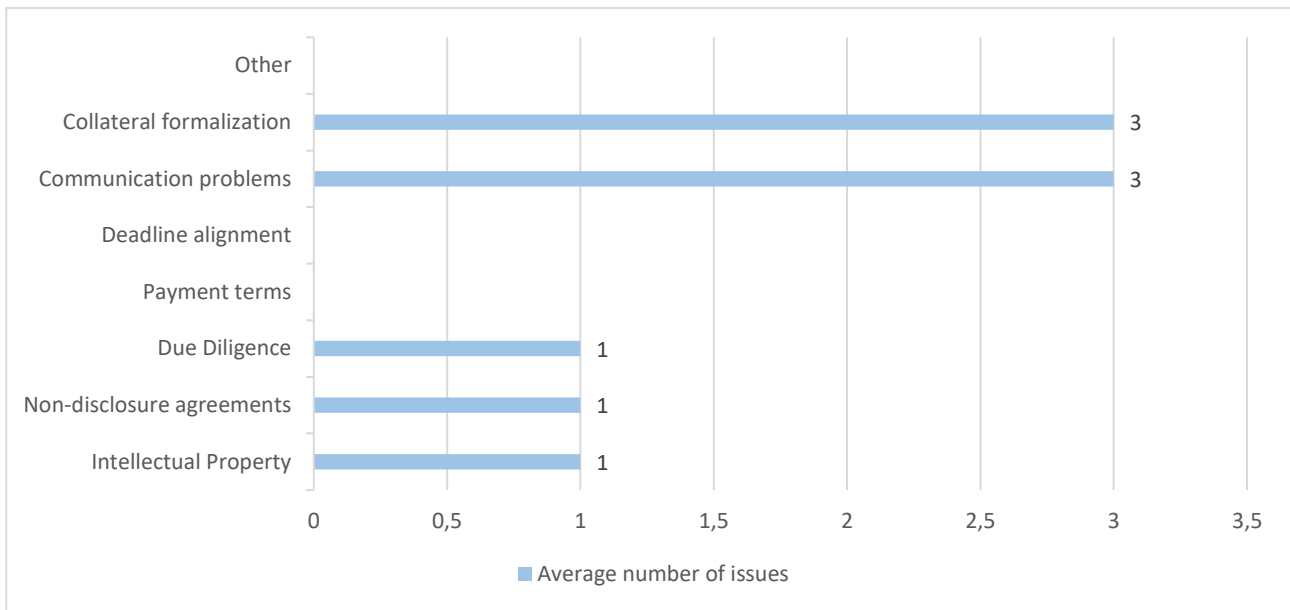


Figure 34: Problems of "disillusioned" firms

### 3.4.1 Collaboration pitfalls: BPER Banca Case

BPER Banca is an Italian bank founded in 1867 in Modena, which has recently approached startups for collaboration. Their case is significant since it is an example of how the abovementioned critical factors can put in serious difficulties both firms and startups and hinder the success of collaborations. In this particular example, issues related to the **alignment of collaboration deadlines** and to the **management of communication and the relationship** in general proved to be significant.

BPER has recently worked with two start-ups: Meniga and Homepal. Though the collaboration with the latter is proceeding quickly and successfully, the one with the former has been particularly unsatisfactory before and after the launch of the required solution.

Meniga is a startup providing digital banking solutions, one of the first companies to use PFM software in Europe. The collaboration between BPER and Meniga was focused on the development and supply of an app called "My money" aiming at enabling BPER customers to manage their funds in an easier and more transparent way.

BPER's relationship with Meniga was however hindered by some critical issues. First, the latter was perceived as too focused on the development of its own digital solution, sometimes neglecting the exigencies of its customer and often not respecting the agreed upon deadlines. Moreover, also the management of the collaboration was difficult: sometimes requiring the redefinition of objectives in progress and encountering problems in the matching of the

individual necessities of both partners. BPER was then obliged to take counter measures to keep under control the development of the product on Meniga's side in order to ensure the progress of the collaboration.

The solution was finally developed and launched, but now BPER is thinking to keep the development of future evolutions of the platform in-house or to entrust it to another supplier. Therefore, even though the collaboration reached its natural conclusion, it is not possible to call it a success, because of some of those issues that were analysed in the literature analysis.



## Conclusions

Nowadays companies need to adopt innovative approaches in order to embrace effectively digital innovation processes. The digital disruption phenomenon and the threat represented by the new multinational players which are deeply changing the present-day competitive arena make it necessary to identify a new way to mean innovation.

This master thesis aimed first at analysing, within the Open Innovation paradigm, the practice carried out by firms of collaboration with startups to foster innovation. Secondly, the goal was to investigate the Italian situation when it comes to the implementation of these activities.

For what concerns the introduction of Open Innovation approaches the conducted research pointed out that the situation is encouraging, the number of Open Innovation adopters amounts to the 33% of respondents. This situation is even brighter for biggest companies which are approaching the threshold of 50% of adoption. However, there are potentially negative news which are related to the significance of the number of companies not interested and not planning to implement anything about the topic (42%).

The investigation about the Inbound Open Innovation practises employed in Italy gave as a result that the most privileged approaches are collaboration with universities, partner scouting with consolidated firms and startup intelligence. Therefore, the research showed a significant interest in startups as partners for innovation, but this practice is still less important in numbers than the more traditional ones. In addition, conducted interviews suggested that firms having already experimented interaction with early stage startups, might now moving towards more consolidated ventures, capable of providing more guarantees.

As far as collaboration with startups is concerned, the survey highlighted that the favoured typology is a partnership for R&D activities. This is understandable given the calling for innovation of which they are endowed and the reason why firms start this kind of collaborations in the first place. That is to say their entrepreneurial mindset, their capability to think outside the box and to come up with fresh ideas. This same assumption explains why the second most diffused typology of collaboration proved to be supply. In fact, firms are increasingly resorting to startups given that their products are capable of answering in a better way to the new and constantly changing needs of the market.

For what concerns instead its goal of identifying the critical collaboration factors between companies and startups, this thesis highlighted that communication problems are by far the most dangerous ones. This proved how firms and startups in Italy are still using a “different language” which prevented their joint effort from reaching the maximum effectiveness. Therefore, this might be a hint there is still much to do for what concerns the internal cultural transformation of traditional companies. The sectorial breakdown of perceived issues gave results which were not conclusive, probably because of the low numerosness of the sample.

In conclusion Italian companies are implementing Open Innovation approaches to survive and thrive in this challenging context characterised by digital disruption and fast innovation. Within this paradigm the practice of collaborating with startups plays an important role for established firms, especially for their R&D functions. In this regard, however, some firms relinquished their collaboration path with startups, perhaps simultaneously turning to more mature partners. This might suggest, whether this is proved to be an ongoing trend, that the most suitable partner for established companies consists in a later stage and thus more mature startup. In either case, a particular attention should be given to communication as the most important factor to ensure the success of that typology of collaborations.

## Future Researches

This thesis work relies on a survey whose target is the Italian ecosystem; therefore, it might be worth conducting a wider analysis on the European environment or at world level. In this way it would be possible to look for eventual geographical peculiarities for what concerns the Open Innovation adoption, the digital innovation or more specifically firms' attitude towards collaborating with startups. A benchmarking analysis of European countries could be useful to identify the position in the digitization path of every EU member industrial ecosystem.

More specifically instead, further analysis might be developed for what concerns the sectorial breakdown of collaboration problems, enlarging and equalizing the sample of companies coming from every industry. This would allow the identification of statistically relevant differences and with more specific questions about those problems it could even be possible to find out the underlying reasons and try to help companies in this regard.

The last element worth of deeper researches is related to the fact that in the last two years firms claiming to have relinquished the collaboration path towards startups might be increased, therefore it might be valuable to try to dig deeper in those companies to identify possible similarities or behaviour patterns.

Finally, all these suggestions require a methodological change to be carried out: the sample from year to year should be made comparable in order allow pluriannual confrontations, identifying trends and patterns with statistical significance.

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