



**Politecnico
di Torino**

POLITECNICO DI TORINO

Department of Management and Production Engineering

Master's Degree in Engineering and Management

Master's Thesis

Empowering Social Hackathons
Case study: Ethic Jobs in Agriculture

Supervisor

Prof. Paolo Landoni

Candidate

Roberto De Martino

Anno Accademico 2021/2022

Politecnico di Torino

Empowering Social Hackathons
Case study: Ethic Jobs in
Agriculture

Department of Management and Production Engineering

Master' s Degree in Engineering and Management

Supervisor: Prof. Paolo Landoni

Roberto De Martino

I would like to express my sincere acknowledgments to Professor Paolo Landoni for giving me the opportunity to carry out this thesis project, offering his constant availability throughout the whole experience.

I would like to thank all the core team of Social Innovation Teams (SIT) with whom I took part in the organization of the event “Ethic Jobs in Agriculture” and in particular I express my thanks to Eleonora Copparoni for supporting and following me since the first days.

Abstract

During these last years, several organizations are shifting to more open and collaborative innovation processes to enhance their innovative capabilities tapping external skills, experiences and knowledges. The result of this shift, to what is called Open Innovation model, is a powerful co-creation process that can also involve lead users, customers and other stakeholders.

In this direction, an emerging innovation methodology is represented by the Hackathon event. Hackathons can be described as very short events, with a duration that usually goes from one to three days, in which different people gather to tackle a common challenge and propose a solution. These events, by the common belief, are originally and most often linked to the coding and technological context to develop a new software or prototyping a new product. However, as commonly agreed by some academics, hackathons are recently moving to a more-purpose related approach including community building, educational objectives or just knowledge sharing, as a very first step in the whole innovation process.

This thesis project is focused on how the validity and the efficiency of these Hackathons' intensive but time-limited events can be applied to the social innovation context.

In order to do so, this work starts with the analysis of the main literature regarding the hackathon phenomenon, considering the traditional corporate setting. The results of this review have been used as a starting point to define the main steps and common principles for the organization of any hackathon, also highlighting related gaps, mainly due to time limit aspects that may reflect on the goals achievement.

Merging and crossing Hackathon's principles to the emerging approaches of designing for social innovation, important observations and reflections for the development of successful Social Hackathon came out.

An important part of this thesis project has been the organization of the event "Ethic Jobs in Agriculture (EJA)" entering in the core-team of Social Innovation Teams (SIT). We had the possibility to put in action Social Hackathon concepts, creating a different methodology that could go over the hackathons' limits, with a specific event agenda. The project had a strategic plan, with a pre-activation phase and two workshop days spaced out by a period where participants could reflect on the development of the project and learn new content.

The specific plan and duration of this project have confirmed our new methodology goals: participants were more involved and engaged, showing their interests to create long term connections and networking beyond the single event.

CONTENTS

1	Introduction	1
2	Hackathon as Open Innovation method	4
2.1	Definition and Classifications of Open Innovation models	4
2.2	Introduction to Hackathons	10
2.3	Why to run Hackathons	13
2.3.1	Organizer/Promoter's benefits	13
2.3.2	Participants' reasons of being involved	15
2.4	The Hackathon process and related success factors	17
2.5	Hackathons' limits	22
3	Hackathons for Social Innovation	24
3.1	Introduction to Social Innovation	24
3.2	Social Innovation process	28
3.3	Design for Social Innovation: co-creation and participatory design	34
3.4	Characteristics and specifications of Social Hackathon events	39
4	Ethic Jobs in Agriculture – (EJA)	43
4.1	The project scope	43
4.2	The core team	44
4.3	Definition and recruitment of participants	45
4.4	The chosen methodology and the resulting EJA timeline	47
4.5	Delivering informative materials to participants – Call to action	52
4.5.1	The problem of labour exploitation in agriculture in Italy	54
4.5.2	The description of four existing models of solutions	57
4.6	Workshop Day 1 – Selection of a single Scenario	59
4.6.1	Divergent Phase	61
4.6.2	Convergent Phase	64

4.7	Workshop Day 2 – Selection of a service	68
4.7.1	Description of the objectives and division into groups.....	69
4.7.2	Group work and plenary presentation of the ideated service.....	71
4.7.3	Voting session	76
4.8	Results and next steps.....	77
5	Conclusions.....	79
	References.....	82

1 Introduction

In recent years, more and more organizations are enhancing their innovative capabilities by shifting to more open and flexible innovation methodologies that are able to foster a collaboration within internal and external actors, bringing different expertise and knowledges.

In this landscape, the Hackathon methodology is increasingly being used by many companies as a way to initiate a bottom-up innovation approach involving users, customers and many stakeholders in the innovation process. The word hackathon is composed of two parts: “hack” and “marathon”. The former indicates the activity of problem-solving through codes and software, and the latter part refers to the brief duration and high intensity process that characterize these events. Nevertheless, the literature review does not give a comprehensive and unique definition of this innovation method. (Flus & Hurst, 2021)

The academic papers on the hackathon phenomenon are mainly concentrated on the definition of the organizational elements and the characteristic phases that made up these events. In general, hackathons, although being characterized by a more open and flexible approach, have to follow a well-defined organization process, with distinct phases to be arranged. The most used formats involve a three-step structure – *a pre-organization phase, the hackathon event*, with a standard duration that usually goes from one to three days, and the setting of *post hackathon steps*.

In the common belief, without any doubts, hackathon events are mostly related to the programming and IT context where software and technology experts gather for a brief time frame to propose their solution to a particular challenge. However, over the years, there has been a change in the definition of the hackathon methodology going from a merely “programming” event to a more “interdisciplinary” contest. Hackathons became an activity used by several companies, as well as cultural and governmental organizations to reach a more general purpose-related approach: from technological or software prototype, to educational objectives, community building or sharing of knowledges. (Rys, 2021) (Briscoe & Mulligan, 2014)

In recent years, in fact this innovation methodology is also used as a powerful strategy to enhance a co-creation process to “hack for social good”. In this sense, the purpose

of these events shifts from a merely consumeristic and business aim to act to create something socially meaningful and improve life conditions of vulnerable people. (Ermoshina, 2018)

These events, that can go under the term “social hackathons”, are relatively different from the IT and business-related hackathons, and can involve different stakeholders from the public sector, NGOs organizations, social entities and citizens. Apart from the differences in the engagement of a more open network of stakeholders, these social hackathons present distinct logics and methods to effectively assure their success.

The main objective of this thesis project is to study the validity of the hackathon method when it is referred to social challenges, analysing their main aspects and related specifications. For this reason, I took part in the core team of Social Innovation Teams (SIT), the promoter of the social hackathon “Ethic Jobs in Agriculture – EJA”. The event, selected by Smart Agri Hubs (SAH) among the winners of the “Smart Agri Hubs Hackathon and Challenges – RESTART Open Call”, is a social hackathon to find a scalable solution to tackle labour exploitation and “caporalato” in the agricultural sector. The event has been considered a long ideation process to promote ideas and solutions sharing between different parts involved, such as experts of innovation and agricultural sectors, students, farmers and agricultural laborers’ representatives.

I have chosen to take part in this project for my interest in how hackathon, usually used in business context, to create software or products for commercial purposes, can be applied in social settings to resolve more serious problems. It was my concern to be active and engaged into social innovation, to start practice knowledges and methodologies for very important social goals.

In fact, during the project, SIT core team was concentrated to define all hackathons’ specifications, looking at its limits and successful elements.

We decided to test new methodology and structure for the EJA event, different from the most used formats, to “empower” the social hackathon. Taking this choice, we tried to mitigate the main limit of hackathons: the brief duration that usually can conduct to superficial or not very efficient solutions for the proposed problem.

The EJA social hackathon was set on a pre-activation phase and two virtual workshops with three weeks of distance between them. The pre-activation phase was dedicated to the participants’ engagement, sending informative materials to give them time for

reflection and best preparation on the project progress. The new used methodology produced positive results, with solutions and considerations that would help SIT to proceed with the implementation for new or integrated services.

This thesis has been organized according to the following topics and arguments:

- Chapter 2: hackathon methodology as Open Innovation method, its implementation into the traditional technological and business sectors with specifications on development aspects, benefits, and limits;
- Chapter 3: main principles of Social Innovation design and a specific section dedicated to social hackathons;
- Chapter 4: “Ethic Jobs in Agriculture” project, its development phases, the analysis of the selected methodology and timeline, results and next steps;
- Chapter 5: conclusions.

2 Hackathon as Open Innovation method

The aim of this chapter is giving an insight about the Hackathon phenomenon. This innovation method is increasingly taking place worldwide, as one of the ways through which organizations look outside their boundaries and tap external knowledges, ideas and experiences, to innovate with an open network of participants and improve their innovation capabilities. This section starts with an overview on the Open Innovation paradigm and then shifts on the analysis of the application of hackathons in the traditional technological and software contexts. The literature review allowed an understanding of the main approaches and principles linked to the organization of these design-sprint events, highlighting their related success factors and limitations.

2.1 Definition and Classifications of Open Innovation models

For several years there has been a strong belief that all innovative ideas and solutions could be developed by corporations in an internal and centralized process, a belief that was mainly related to the willingness to protect “in-house” original and innovative ideas.

In the last decades, however, a new paradigm in innovation was developed, the so-called *Open Innovation*, that can be understood as the antithesis of the traditional internal and closed approach. The term was first coined in 2003 by Chesbrough when he proposed, in his book “The new imperative for creating and profiting from technology”, several reasons about “the need to innovate innovation”. The fast-pacing world in technology and in customers’ needs can create difficulties in predicting the real consequences brought by an innovation, that includes the adoption and the diffusion of a new artifacts, being it a service, a new product or a new business model. Traditional organizations have concentrated their efforts on setting an appropriate creative process to innovate only within the boundaries of the firm. However, Chesbrough (2003) mentioned how “in today’s world we are faced with two new realities”. The first is the possibility to easily go beyond firm’s boundaries and tap the ideas directly from customers and users through a creation of a powerful network. The second point is that any single innovative team must be aware that smart people can

be found outside their internal members. So, precious knowledge can come by the interplays between different people with experiences and tools that can totally differ from the internal ones.

Having state which were the main reasons that have guided Chesbrough in coining this new term, it is important to have a clear definition of Open Innovation (OI).

“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 market, as they look to advance their technology. Open Innovation assumes that internal ideas can also be taken to market through external channels, outside the current business of the firm”. (Chesbrough, Vanhaverbeke & West, 2006)

In the following figure there is a comparison between contrasting principles of Closed and Open Innovation from Chesbrough (2003).

<i>Closed Innovation Principles</i>	<i>Open Innovation Principles</i>
The smart people in our field work for us.	Not all the smart people work for us. We need to work with smart people inside and outside our company.
To profit from R&D, we must discover it, develop it, and ship it ourselves.	External R&D can create significant value. Internal R&D needed to claim some portion of it.
If we discover it ourselves, we will get it to market first.	We don't have to originate the research to profit from it.
The company that gets an innovation to market first will win.	Building a better business model is better than getting to market first.
If we create the most and the best ideas in the industry, we will win.	If we make the best use of internal and external ideas, we will win.
We should control our IP, so that competitors don't profit from our ideas.	We should profit from others' use of our IP, and by others' IP whenever it advances our business model.

Table 1- Closed vs Open innovation based on Chesbrough (2003)

The real strength of this new paradigm, in approaching into the innovation process, is related with the high degree of openness it has. According to the author, there are some

innovation contexts in which a shift to Closed to Open Innovation is quite needed, with follow up innovation processes that need to be aligned. Opposite to be first in the market and to the closed creativity process to innovate, there is an open system in which the focus is on creating an innovative business model, on making the best use of external ideas to generate significant value. In this book, Chesbrough (2003) mentioned many detailed studies from the high-tech technology industries to assess the prevalence of this new paradigm, but he underlined how all the concepts covered are not specific only to that sector, but applicable in all sectors in which the contexts are high unpredictable and dynamic.

This new approach was not completely new at the time it was coined under *open innovation*. Chesbrough et al., (2006) made an analysis on the antecedents of this approach in innovating, mentioning some past authors that in a way studied the downsides of the traditional in-house innovation strategies. Internal R&D activities and basic research can provide spill overs that firms cannot be able to appropriate and commercialize. This can lead benefits to the firms who are instead able to capture the real benefits from the innovation's diffusion and adoption. Nelson & Winter in 1982 wrote about the decisions of firms to search for new technologies outside its own organization and Eric Von Hippel, in 1988, already identified the main sources of external knowledge: suppliers and customers, universities and government, competitors and other nations. (Chesbrough et al., 2006)

What Chesbrough made in the first years of 2000s, was being able to give a single label to a range of existing activities, a new starting point that also enabled researchers and academics to redesign the innovation strategies and methods in a more connected landscape. All of this in a time in which companies were so interested in outsourcing and in sharing collaborations, under the advent of the Internet. (Huizingh, 2011)

The main contributions brought by Chesbrough were the focus on the *external knowledge* as an equal role with the internal one and the importance of the *business model* in the new paradigm to be able to use both powerful internal and external knowledge to foster innovation and go to the market. The author stressed the importance of managing IP (Intellectual Property) and the belief that useful and high-quality knowledge is widely distributed, so that even the most powerful R&D organizations should refer to external sources. (Chesbrough et al., 2006)

Raised the main characteristics of this new approach in innovating, many authors in the academic literature referred their studies on the needs for an actual shift from Closed to Open Innovation.

It can be intended as a real multi-phase organisational change process that can require time and significant cultural change. A real process of adopting a new mindset that is not so straightforward. Further, implementing Open Innovation requires the institution of a series of external networks to search for new ideas and solutions, and the consequential need to manage this acquired knowledge with complementary internal channels and specific organizational roles. There is the need of new knowledge management systems that can enhance diffusion, sharing and transfer of knowledge between different actors and channels. (Chiaroni, Chiesa & Frattini, 2011)

In the shift towards the new paradigm, an important role has been taken by new technologies that in a way supported and made it easier the adoption of the Open Innovation model. As instance, the role of Information and Communication Technologies (ICT) that has increased the ability to work across different geographical and organizational boundaries in a more open and accessible system. (Dodgson, Gann & Salter, 2006) In their research, Dodgson et al., (2006) focused their attention on the role of a set of technologies, named *Innovation Technologies (IvT)*, that are used to create and innovate innovation processes. These innovation technologies, including for instance communication devices, simulation, modelling and virtual reality, provide tools by which people involved in the innovation process are effectively assisted in their creative tasks, helping them in using and fostering their innovation capabilities. These technologies create new environments within innovation contexts, facilitating the engagement of users and other parties in designing solutions, playing and experimenting with different future scenarios.

Literature review comprehends research on different aspects characterizing the Open Innovation's main activities and some authors focused their studies on classifying and underlining some differences.

“Open innovation comes in many forms and tastes. Therefore, it is necessary to develop open innovation frameworks”. (Huizingh, 2011)

At this point, before going to some frameworks it has to be acknowledged that *closed vs open innovation* is not a clear-cut dichotomy, but it should be considered as

continuum of different degree of openness from closed to open models. This is in line with Dahlander & Gann's (2010) view of seeing internal R&D as a necessary complementary activity to support open innovation strategies.

A very first classification of Open Innovation, made by Chesbrough, is in *Outbound vs Inbound* activities.

The former is the inside-out transfer of knowledge about something developed within the firm's boundaries, the latter is the outside-in approach where the aim is to internalize external knowledge and expertise, and it is the approach that has attracted higher interest for several years. (Outbound = Inside-out; Inbound = Outside-in).

As outbound innovation strategies may be mentioned Joint Venture, Spin-off or activities of IP licensing. As inbound activities, the most used innovation strategies are direct collaboration with Universities and Research Centers, Corporate Venture Capital, Call4Ideas, Hackathons and Challenges, and the collaborations with Innovation Hubs or Incubators.

Gassman & Enkel (2004) added to this framework *coupled activities* generalizing the possibility to support innovation processes by having both inbound and outbound activities simultaneously.

In the work of Huizingh (2011) it can be found another classification of the Open Innovation activities based on a distinction between the openness of innovation process and outcome, as it is summarized in the following figure.

Type of Innovation Process	Innovation Outcome:	
	Closed	Open
Closed	Closed Innovation	Public Innovation
Open	Private Open Innovation	Open-Source Innovation

Table 2 – Openness of innovation processes and outcomes based on Huizingh (2011)

By looking at the figure, four different innovation strategies are defined. Focusing on the closed type of innovation process, there is a *closed innovation* when the outcome is internalized and in-house protected, while a *public innovation* when the outcome of a closed innovation process is easily available to others. Considering instead the open

innovation processes, highlighted in the figure, there can be two innovation strategies based on the degree of openness of the outcome. Private Open Innovation, when the outcome is internalized and is still a *proprietary innovation*, and an *Open-Source Innovation* when also the outcome is open. (e.g., open-source software platforms). Another interesting classification is made by Dahlander & Gann (2010), that instead added a new dimension in their classification between outbound and inbound activities, focusing also on *pecuniary vs non-pecuniary* interactions, and so considering if there is money involved in the exchange. In doing so they created a matrix 2x2, identifying four different open innovation strategies. The matrix developed by the authors is summarized in the following figure.

	INBOUND INNOVATION	OUTBOUND INNOVATION
PECUNIARY	Acquiring	Selling
NOT PECUNIARY	Sourcing	Revealing

Table 3 – Pecuniary vs non-pecuniary OI classification based on Dahlander & Gann (2010)

Considering the outbound path:

- *revealing*: a not pecuniary transactions where firms reveal to the external environment their internal resources or capabilities without an immediate financial reward but looking for indirect benefits,
- *selling*: here there is the commercialization of a firm’s innovations by licensing or selling out ideas or patents, receiving a monetary payment.

Considering the inbound path:

- *sourcing*: this can be translated in the approach of scanning the external environment by looking at external knowledges and expertise to foster new opportunities and higher capabilities to innovate,
- *acquiring*: here firms directly acquire the input to innovate through the marketplace.

Again, in this distinction, it is considered the openness and the appropriability of the innovation strategy being used, to have a clearer understanding of the advantages and disadvantages of a particular open innovation strategy. In managing and combining different innovation strategies it is always important to highlight some factors as the level of competition in the sector, the relative appropriability regimes, the disruptive and the absorptive capacity in dealing with some technologies and knowledges.

These mentioned above, are just some of the most accepted classifications of the Open Innovation model. What is certain, is that the new paradigm introduced by Chesbrough can involve different relationships between various institutions but what are all the elements and concepts behind this model is still under discussion. Many authors have seen how Open Innovation overlaps with many other concepts like *open source*, *user innovation*, *crowdsourcing*, *co-creation* and *distributed innovations*. There are, indeed, some common elements in these approaches but each of them can have some differences with the Open Innovation. In the Open Source, for instance, there is not the problem of dealing with the management of IP brought by the exchange of knowledge and the development of innovations, that is of crucial importance in Open Innovation activities. (Hossain, 2013)

The literature has shown how the open innovation strategies can be different and all involving interorganizational relationship for an exchange of knowledge and technologies, but there is not a more powerful or unique way to be better off from open innovation approach. From now on, the study will focus on understanding the main elements and principles that characterize a specific ‘open innovation’ method, that is above included as an inbound activity: the Hackathon.

2.2 Introduction to Hackathons

The Hackathon phenomenon is increasingly taking place worldwide as one of the ways through which organizations look outside their boundaries and tap external knowledges, ideas and experiences, to innovate with an open network of participants enhancing their innovation capabilities.

Even though there is not a final agreed definition that differentiate a *hackathon* from several related events, the reader can go through a general interpretation of what it is intended with *hackathon* starting directly by looking to the term. The word

“hackathon” is composed of two parts: *hack* and *marathon*. The term “hack” refers to the creative problem-solving activity related to a challenge while the term “marathon” is directly related to the brief duration and high intensity of this kind of event. (Flores et al., 2018)

Originally, the term appeared in 1999 when a group of software developers, from the OpenBSD computer operating systems and Sun Microsystems, came together to avoid some legal problems arising from export of cryptographic software regulations from the United States. (Briscoe & Mulligan, 2014)

Trying to google the term Hackathon, the first definition provided by Wikipedia is “a design-sprint-like event in which computer programmers and others involved in software development, including graphic designers, interface designers, product managers, project managers and domain experts, collaborate intensively on software projects”.

Hackathons are usually also defined as *hacking festival*, *codefest* or *coding festival*, *code sprints*, *design jams*. (Briscoe & Mulligan, 2014) All terms embedding two main concepts: *short duration* and *technological and coding* themes. Many other researchers focused their attention on the tech-software type of hackathons; for instance, Komssi et al., (2015) defined them as “continuous event in which people in small groups produce a working software in a limited amount of time”.

An important insight in defining these events can come from Briscoe & Mulligan (2014) that made their own classification of Hackathons dividing them in two main types: *Tech-Centric* and *Focus-Centric*.

Tech-centric hackathons focus on software development and can be divided into three main types:

- **Single-application** mainly focused on open-source software development,
- **Application-type** for mobile apps, video game or web development,
- **Technology-specific** where the hackathons are about a specific programming language.

Focus-centric hackathons, instead, are considered to address a specific business or social objective. Within this classification it is possible to find:

- **Socially oriented** to find solutions to social issues,
- **Demographic-specific** when referred to a specific group,

- **Company-Internal** referred to hackathons organized by corporations involving only their staff to encourage new product innovations.

In this last definition another aspect is revealed: some innovation events addressed to internal employees are still named as hackathons, even though in most cases hackathons refer to a more opened innovation strategy that tries to involve people and knowledge outside internal teams.

Another important classification that can be made about this method, is the level of competition within participants, that is highly dependent on the type of final goal and purpose the hackathon is addressed for. According to Frey & Lucks (2016) these type of events can be of three main types:

- **More Competitive:** when only one solution/prototype will win,
- **Less Competitive:** it is not specified in advance the number of winning solutions,
- **Complementary:** when during the event different teams work on an overall goal all together.

Since the early 2000s the definition of hackathons seems to have experienced some changes and evolutions during time, going from a programming event to a more interdisciplinary contest. (Rys, 2021) According to the author, these types of events have shifted from “programming to interdisciplinary” activities. They are also changing in the overall purpose from just technological issues to a “more-purpose related approach” including community building, educational objective or just transfer of knowledge. Rys (2021), during his research, also pointed out another classification of hackathons based on the different approach in which it can be conducted. He mentioned three types of hackathons:

- **Open:** in which participants are completely free in the way they approach to the solution, completely open methodology of designing around different ideas
- **Closed:** participants’ space of actions and creativity is “limited” and moved around a specific task during the whole event
- **Dedicated:** here the participants can move around a specific and maximum number of tasks dedicated to a single well-defined scope of work.

Soltani et al., (2014) defined hackathon as ideation context, “being a part of the application of idea management and/or of an ideation system”, that can be defined as “an early phase in the larger innovation processes undertaken by the firm”.

What can be argued, is that the literature review about hackathons can create some uncertainty since many events and innovation formats have similar elements and characteristics of implementations, so that it is possible to talk about hackathon, or “hackathon-like events” as described in the work of Flus & Hurst (2021).

Further, the attention of many academics, more than in providing a single accepted definition, is in providing the general benefits and the main organizational tips that can generate success in this sort of event, starting from their own analysis and experience on specific and real followed events.

However, here it is underlined one definition that comes from one of the most recent academic resources I have dealt with, during this phase. This definition provides a very general classification of what can be a hackathon event, and it is completely aligned with the idea of high openness that this kind of innovation method should enhance. This is from Rys (2021) that defined hackathon as “*a flexible invention development method in which people face a specific challenge or a group of challenges within an imposed amount of time.*”

2.3 Why to run Hackathons

Having specified what can be intended as a hackathon event, this section will highlight what can be the main reasons to use this kind of innovation strategy, both considering the participants and the organizer sides. Before going on, it is important to clarify that from now on, the study will refer especially to *external hackathons*. Here, the promoter, being it a private corporation or a public organization, involves people within and outside their own members, calling from creativity outside their organization, mixing different skills and experiences for a brief timeframe.

2.3.1 Organizer/Promoter’s benefits

As stated in the previous section, many organizations have already moved or are moving from a closed form of innovation process to an open-oriented innovation

processes, having the need to enhance their innovative capabilities involving other technologies, knowledges, and talents outside in-house departments.

Without any doubts, the first reason why, an organization would set up a hackathon, is represented by the need to innovate.

According to Rosell, Kumar and Shepherd (2014), the most important attributes that characterize hackathons and contribute to their ability to foster innovations are *focused-intensity*, *novelty*, *collaborative* and *incentive-based*. In the following table, the reader can find the validity of these attributes.

HACKATHONS' ATTRIBUTES	WHY HACKATHONS CAN BE GOOD IN FOSTERING INNOVATION?
Focused intensity	Time and space limitations can drive participants in maintaining a strong focus and dedication during the process
Novelty	People not always involved in innovation activities can be enthusiasts and energised to be involved in an invention design process
Collaborative	Participants with various backgrounds can be a very powerful source of new ideas
Incentive-based	The reward structure, that is almost always present in hackathons, can attract a variety of participants

Table 4- Hackathons attributes based on Rosell et al., 2014

These kinds of events are able to initiate a bottom-up and an externally collaborative ideation path since the very beginning of the development process of a new product or service, or just to add some features to existing products. However, innovation is not the only reason, but the hackathon method can also be effective as an *educational or social* event or can enable the promoter to *build community* with powerful external networks. (Komssi et al., 2015)

Another interesting observation comes from the study of Rys (2021). In his research about hackathons, he confirms the idea about how hackathons are evolving throughout time and are always more addicted to several contexts and application fields, as it is also stated previously. More than a comprehensive method that can generate the whole innovation process, including its development and diffusion, that is highly dependent on the type and the difficulty of the challenge, the hackathon method can be a good

tool to generate very powerful ideas. This is in line with his research and studies on some hackathons in which very few have requested the total implementation with functional and working solutions. Instead, organizers accepted mock-ups or something that can efficiently demonstrate the ideas. So, as idea generation method the hackathon can enhance a “*divergent and convergent creative thinking process*” that can give a lot of freedom in the idea proposals. However, according to Rys (2021), the hackathon method does not have to be just compared to a *brainstorming session*. Instead, hackathon, even if is open and flexible, is a well-structured process and can overcome some negative aspects related with brainstorming such as *free-riding, regression to the mean, evaluation apprehension* and *creativity blockage*.

Frey & Lucks (2016) focused on describing the organizer’s perspective in the choice to run hackathons. In their research they mentioned different driving purposes such as: *find new partners for business, get feedback on existing solutions, increase the awareness of the brand, the recruitment of new talents, the provision of new knowledges* and *the engagement of the community* in the innovation process.

So, the main reasons for the promoter side can be summarized in these following macro themes:

- **Innovation capabilities:** it is clear that hackathons can be short time frame processes to provide new product or service solutions in the forms of prototypes or concepts,
- **Education:** the promoter can improve creativity and learn new methodologies and skills that foster cooperation between different disciplines,
- **Image and community building:** use hackathons to promote your brand in the sector and to create a powerful network with external partners.

2.3.2 Participants’ reasons of being involved

Participants are the real fuel for generating very powerful solutions to the purpose of the hackathons. With the right amount of incentive and motivation, participants are a very key success factor when organizing hackathons events. (Rosell et al., 2014) (Soltani et al.,2014)

In the following figure there is the output from the research by Briscoe & Mulligan (2014), where the authors highlighted the main elements of a survey, conducted in 2012, on 150 hackathons’ participants from across the United States of America.

One important result is represented by participants' reasons for attendance, summed up in the following figure.

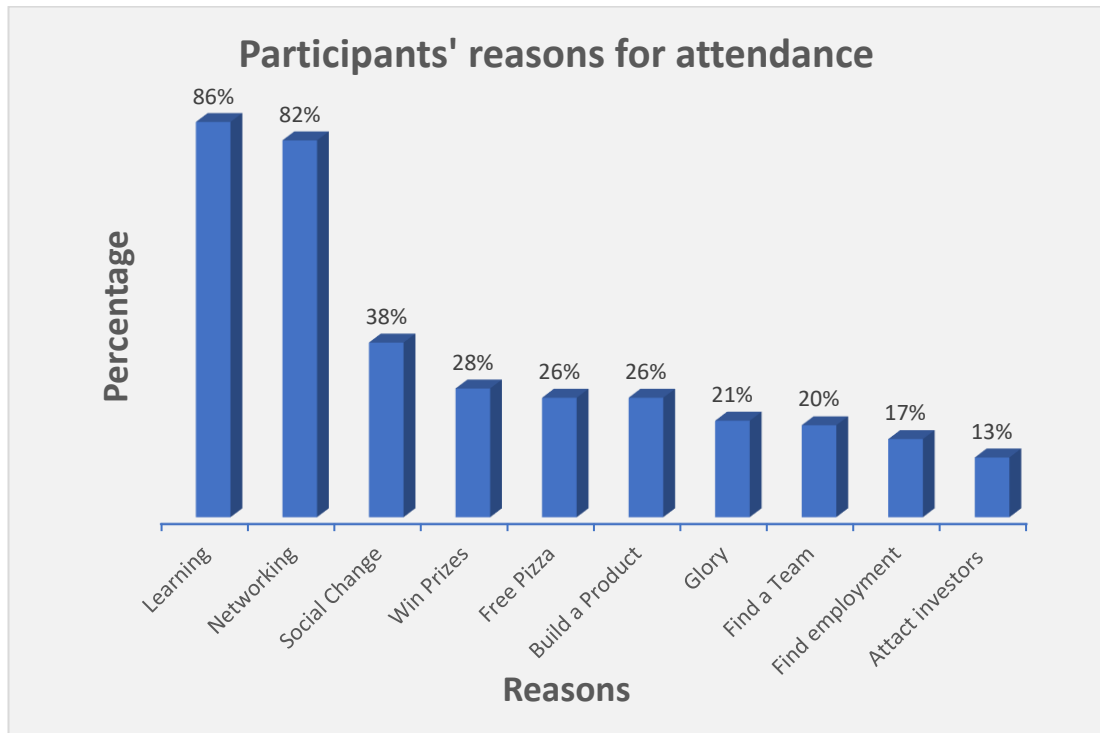


Figure 1- Participants' reasons for hackathon attendance based on Briscoe & Mulligan (2014)

From the figure above, it is easy to see there are two predominant reasons of attendance: *Learning* and *Networking*. These two reasons confirm the strength of hackathons in creating a flexible and empathic environment that can enhance new knowledge and powerful social ties, for the organizer but also for participants. The authors mentioned their idea of “hackathon circuit” that, in a way, can be interpreted as the power to be able to generate networks between passionate people and the creation of many possible further reunions and events. As a third reason, there is *Social Change* that is a very good point for the purpose of this thesis project. People want to achieve “social betterment through hacking”. It is clear how learning new things, social networking and trying to change the world, are the reasons that go ahead with the respect to *winning prizes* or *the implementation and the building of a final product*. Participants, during hackathons, can also achieve a personal development and sense of achievement that come from working with new methodologies and technologies but also, can have fun and create new post-event collaborations and relationships. (Komssi et al., 2015)

It is obvious that the general satisfaction of participants is highly dependent on the organizer ability in setting down a well-defined hackathon process, and in supporting them during the different activities especially when a higher interdisciplinarity of the teams is present.

2.4 The Hackathon process and related success factors

Clarifying the main reasons that can involve promoter and participants in gathering for a brief time, concentrating their creative efforts for a particular purpose, it is important to say that hackathons are contests with a well-structured process and particular tasks to be followed.

Most of the literature is focused on industry-specific events and mainly software developments contests, but most steps can be transversal to different purposes. (Flores et al., 2018)

According to Flores et al., (2018) these kinds of events, that usually have a duration from 1 to 3 days, mostly fit with the earlier stages of the Lean Innovation method where the context is still not very well defined, and a deep exchange of ideas and solutions are so welcomed to be later tested using Lean Startup concepts.

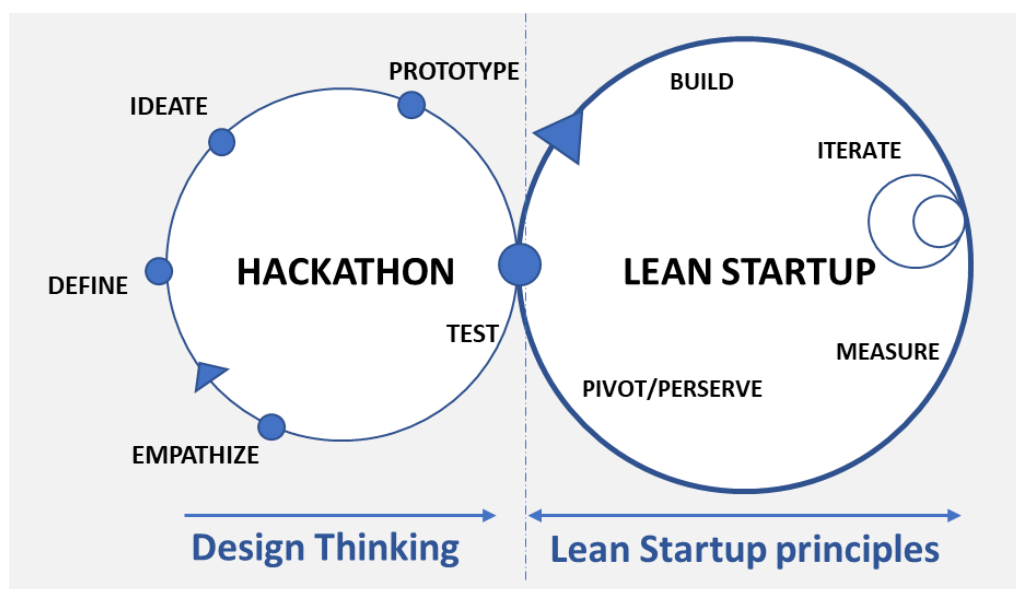


Figure 2 - Hackathon as a first step in the Lean Innovation model based on Flores et al., (2018)

Comparing closed innovation, open innovation and finally lean innovation models, and using also their experience in conducting and organizing hackathons, the authors

proposed the following methodology that covers the whole hackathon process. The methodology is based on three steps, and each phase is planned, organized and detailed.

1) **The pre-hackathon planning**

This stage is without any doubt the most important and it consists of nine steps. The very first step is *collecting and defining the core information* and so the main topic, the challenge and the expected outcome. The second and third steps are *defining a location* and *a core team* of organizers. The core team is important: hackathons need technical support, the support of facilitator during the execution, and some time also innovation experts that are more informed on the main theme and methodology of the event and can provide needed insights and answers. The core team goes through two main steps: *team alignment* and the creation of a *detailed agenda* to better identify the structure, the process, and the ad-hoc methodology to be set.

Then the core team, that organizes the event, has to **promote** and *get registrations* from participants. The last two steps of this pre hackathon stages require *final preparations* of all the materials needed in carrying out the event and alignment of the team on the event schedule, and *on-site preparations* that are the last adjustments made the same day of the hackathon.

2) **The Execution stage**

According to the authors the design process mostly used, that can describe what is mainly done during the event, refers to the Design Thinking approach. This approach is structured into five-phases that are: Empathize, Define, Ideate, Prototype and Test. Participants in each team firstly have to conduct their own general research on the topic and then can define and redefine the problem to tackle, by making a deep analysis of the critical elements. Only after doing so, the Ideation phase can start, with a huge brainstorming of ideas. The next two phases of prototyping and testing are intended to be in an iterative way until one final solution is selected.

3) **The Post-Hackathon stage**

This is another very significant insight coming from the research from the two authors cited above. “It is strongly recommended to invest time in this last phase”. Once the

hackathon is ended, the organising team has to set some activities to better analyse the outcomes generated and, if it is the case, to really advance the winning solution in the development process.

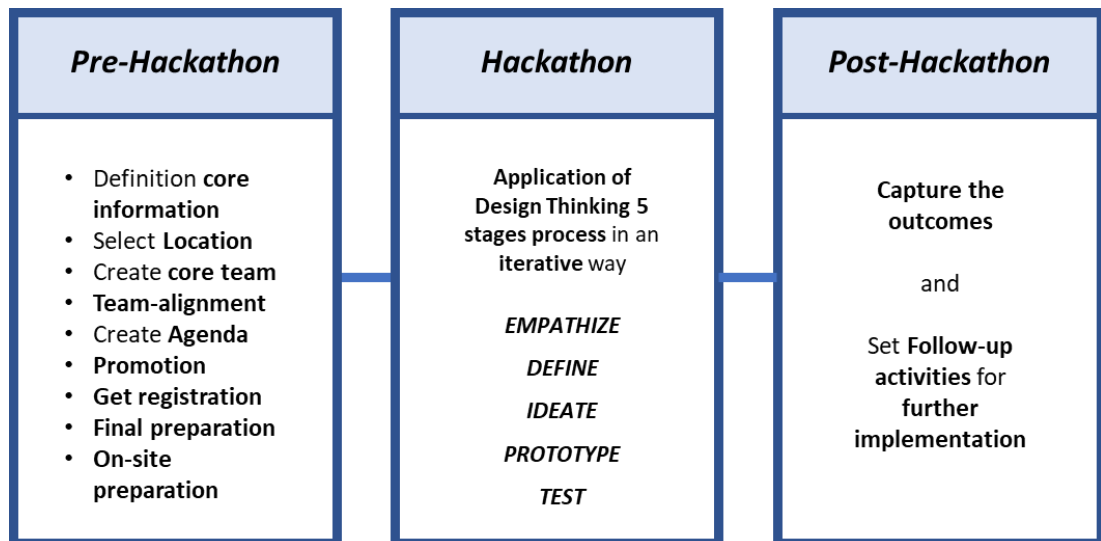


Figure 3 - The three-steps Hackathon methodology based on Flores et al., (2018)

Frey & Lucks (2016) also advocated hackathons especially indicated for the early phase of the innovation process, starting with creating and evaluating first prototypes. The two authors, in their study, provided the so called “Innovation-drive Hackathon” pattern, to address the organizational challenges behind the setting of these events.

This pattern also follows the Hackathon's setting in three main phases: *Preparation*, *the Hackathon*, and *the Follow-up activities*.

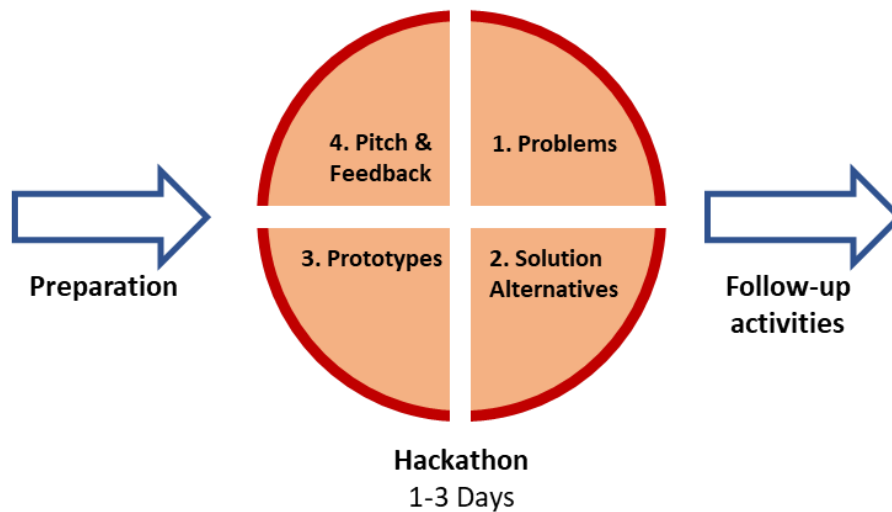


Figure 4 - The “Innovation-drive Hackathon” steps based on Frey & Lucks (2016)

Looking at the Hackathon stage, they proposed an event with a duration from 1 to 3 days conducted in an iterative manner within four main phases:

1. **the problem:** analyse needs, pain points and the general context,
2. **solution alternatives:** identify and define customer value proposition for each alternative solution identified,
3. **prototype:** create a basic prototype that shows the minimum set of features to get people understand the concept,
4. **pitch & feedback:** with each team presenting their solution to collect feedbacks.

Highlighting this process, in different steps, can be of help for the organization of any kind of hackathons, being it a private internal hackathon, within software development context or with other purposes, or, at the same time, an external hackathon addressed to an open network of participants. The literature does not underline a unique or a better way to conduct a hackathon but reveals that can different stages be needed in the setting of the event, highly related with the specific context and participants involved.

Having in mind a well-reasoned step by step process is however not enough. It can be difficult for instance to find and allocate the right people for a specific period of time,

mostly during weekends, and, as stated in previous sections, it can be also demanding to motivate and to assist them during the whole process. (Frey & Lucks,2016)
Hackathons can be a powerful innovation methodology only with a deep preparation and effective organization.

Trainer et al., (2016) made a multiple-case analysis of three hackathons trying to understand the technical and social trade-offs that can arise, and how different activities in the organization of this event can foster their success. They asked themselves if the effectiveness of *radical collocation* and of the *co-worker familiarity* theories can be found also within the hackathon methods. *Radical collocation* theory is a strategy where an entire team is put in a single room, while *co-worker familiarity* is the understanding of how other workers, with other skills and expertise, can perform a specific task. These two theories, that as stated, are more related with the social effects of working in teams, have general powerful benefits that come from proximity between participants and the following *overhearing*, *face-to-face collaboration* with a follow-up general *familiarity* that enhance innovation capabilities.

It is important to think about social relations and to create a flexible environment that can facilitate participation and willingness to work in an intensive creation context.

Soltani et al., (2014) have argued that the “success of hackathon” highly depends on what is the aim, or the purpose generally stated by the organizer. These authors analysed six different hackathons and, as mentors or jury members, they have participated in five of them. Taking part at the events, facilitated their understanding of the context and allowed for very informal interviews with participants and organizers. From this study they listed down the following leading success factors:

- **the effectiveness in defining the problem,**
- **the rewarding aspect,**
- **the amount of diversification of competences** within teams,
- **the presence of mentors** during the creative process,
- **the efficiency in the judging process,** and
- **the setting of entry requirement,** if needed.

In their discussion about the success or the unsuccess of the six followed hackathons, they stated how all factors are in relation to one another and are highly dependent on the main hackathon’s context. Nevertheless, the most important factor, witnessed in

all cases, was the effectiveness in the definition of the problem area to participants. This creates the setting of the problem area, and its definition and comprehension can create a win-win solutions both for organizers and participants. Other essential aspect can be the presence of mentors, that are increasingly present especially in some kind of contexts, guiding and inspiring solutions. (Soltani et al., 2014)

2.5 Hackathons' limits

It has been already affirmed that hackathons can be a complex process to handle, and much of the time, organizations, their culture, and the whole context, have to be ready to this kind of openness, rapidness and flexibility. In this specific section, are analysed some of the main limitations related to these events.

One of the challenges, within this open innovation method, is about **the management of the Intellectual-property rights**. It is important to understand who is going to have the property of the solutions developed and to agree, before the event, on all the terms. This, sometime, can cause a restriction in the independence of participants in proposing their own solution and the cancellation of further development due to property rights. (Komssi et al., 2015)

The main downside is that these events depend on a **time-limited work** between people that most of the time only know each other's name at the beginning of the event. The most used formats for the timeline structure of hackathons, indeed, go from one to three days, usually during the weekends involving participants half-day or full day. The resulting brevity of time at disposal is the most critical limit, and especially virtual organized hackathons can create some downsides.

Again, referring to the research of Trainer et al., (2016), this time limitation can create troubles in fostering collaboration and the needed familiarity between participants, causing a worsening in the whole innovation process, with resulting superficial solutions. So, the authors stressed the importance of creating hackathons' preparatory activities also engaging participants in order to foster their familiarization since the very beginning, and the importance to set what they have called "follow-through activities" that can generate stronger willingness to work appropriately during the event, having in mind that something can continue even after the end.

In this line, another linked challenge of hackathons, is the **communication between different disciplines**. (Komssi et al., 2015) Indeed, when participants from different backgrounds, different culture and specialization participate to the same event, it could be difficult to share ideas, information and materials throughout the different steps of this brief event.

The time limitation can create a kind of urgency that on the one hand, can make people working in a “condensed manner”, but on the other hand, can also cause a difficulty in providing useful results from the hackathon process itself. (Frey & Lucks, 2016)

Therefore, the critic is that hackathons can create and develop solutions that are actually the results of a very short development process with consequent short-term and superficial solutions.

Another limit is about the **abandoning of solutions** developed within the event. All prototypes will likely become abandoned if a good plan for the post-event actions is not carried out, trying to effectively initiate a new business bringing together investors and developers. (Komssi et al., 2015)

HACKATHONS' LIMITS	CONSEQUENCES
Management of IP rights	Sometimes it can cause limitation in the participants' willingness to propose solution or restriction for further development due to property rights
Communication between different disciplines	Difficulty in sharing information, ideas and modus operandi
Time	This can cause superficial solutions not effectively responding to the problem
Abandoning	Sometimes, hackathons solutions end with the event itself, this can cause absence of commitment by participants

Table 5 - Focus on the main hackathons' limits

3 Hackathons for Social Innovation

Social Hackathons are a specific class of hackathons in which the objective is finding a solution to massive societal problems. The aim of this section is to provide the main specifications and approaches to structure a Social Hackathon, after defining the emerging principles of designing for Social Innovation, which include theories of co-creation and participatory design.

3.1 Introduction to Social Innovation

In its comprehensive definition, an innovation, to be considered as such, cannot be only a new idea or invention, but it must be adopted and diffused in the society. Therefore, innovation is a social process more than just an outcome or an artifact. It requires interactions, networking, discussions, change and diffusion among people.

This specific section is of fundamental importance to have a clear view of the theoretical elements and concepts that characterize social innovations and the processes behind them.

Ziegler (2017), in his study about the concept of social innovation, raised the attention on understanding the different characteristics of social innovations with respect to the “mainstream” or “economic” innovations related to the market and the profit achievement. He tried to study innovations not covered by a focus on the market, or even market innovations that can be oriented towards social goals, such as sustainability. In his study, he stated how “*innovation as we know it neither contributes optimally to the economic wellbeing, nor is our innovative capacity optimally used to meet the most pressing needs worldwide*”. (Ziegler, 2017)

“Social innovation is a term that almost everyone likes, but nobody is quite sure of what it means”. (Pol & Ville, 2009)

There are several definitions of social innovation within literature materials, and several are the ways people use the adjective “social” with respect to different contexts. As a general belief, the term *social* is used to describe societal problems that comprehend a general issue for the entire community, or just to think about a social value that is different from the merely economic or individualistic value but can be, instead, shared within the entire community.

Part of the difficulties encountered in defining social innovation refer to the fact that, within literature, the “social” focus can be on the output, and so on the pressing social needs, or on the use of new social processes to deliver products and services. Some said, for instance, that social innovations are social in both their means and their ends. (Grimm et al., 2013)

The Stanford Social Innovation Review defines social innovation as “*a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals.*” (Phills, Deiglmeier & Miller, 2008)

Here, there is a first important point that is underlined in the words “*value created accrues primarily to society as a whole*”. Every kind of innovations in a way create value for people, otherwise they won’t be accepted or used, but here, the end is addressed to the community, to society as a whole and not referred to a specific portion of the market.

Mulgan (2006) stated how Social Innovation “*refers to innovative activities and services that are motivated by the goal of meeting a social need and are predominantly diffused through organizations whose primary purposes are social.*” Here, there is another important side in the definition of social innovations focusing on the social goal-oriented output.

Another definition, that focuses on process and output, is provided by The Young Foundation in the paper “Overview of Social Innovation”, where the authors tried to state a core definition based on both previous research and practices perspective: “*Social Innovations are new solutions (product, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources. In other words, social innovations are both good for society and enhance society’s capacity to act*”. In their studies, they also tried to list down what they call “core elements of social innovation” that are:

- **novelty**: and so, bring something not already present in the market,
- **from ideas to implementation**: in the sense that social innovations must be adopted and financially sustainable in the long term,
- **meet a social need**,

- *effectiveness*: in the sense that they must create a measurable improvement in terms of outcomes
- *enhancement of society's capacity to act*.

From these elements, the most distinguishing features are the “meet of a social need” that, here, is defined as things that “can cause serious harm or socially recognisable suffering” and “the enhancement of society’s capacity to act” that means creating new social relationships and empowering beneficiaries to better meet their own needs. (The Young Foundation, 2012)

The OECD LEED Forum on Social Innovations provided a definition of social innovations considering these kinds of innovations as separate from “business” or technological innovations, because they focus on satisfying needs not provided by the market. According to the definition adopted by the Forum, “social innovation deals with improving the welfare of individuals and community through employment, consumption or participation, seeks new answers to social problems by identifying and delivering new services, new competencies, new jobs and new forms of participation”. In a way they proposed a strong link between social innovation and local development to improve the quality of life. (Pol & Ville, 2009)

Osburg & Schmidpeter (2013) gave their contribution in defining the concept of Social Innovation pointing it out as a *process* driven by innovation and adding a goal and a value that can create *sustainability*, defined as the capacity to go through environmental, economic, and social dimensions. A process to provide a Sustainable Development that “meet the needs of the present without compromising the ability of future generations”.

Many elements of difference can be mentioned between the several definitions provided by academics on the concepts of social innovations, but it is clear how they strictly depend on the context they are referred to and, most of the time, several definitions are referred to broad contexts, so that several activities and approaches can fall under the name of Social Innovation.

The overall concept can be thought as vague but, in a way, it can be accepted that social innovations are addressed to solving complex societal problems and can take place within governments, the profit and non-profit sectors and in spaces between them. (Osburg & Schmidpeter, 2013)

Social Innovation is increasingly taking a central point of discussion during last years, in which the society is dealing more and more with pressing problems such as climate change, worldwide chronic diseases, or inequality. Murray, Caulier-Grice & Mulgan (2010) classified them as “intractable problems” which, at the same time, cannot be tackled autonomously by government or civil society, due to lack in the right skills, incentives and approaches. According to the authors, indeed, social innovation points to a new kind of economy described as *Social Economy* that is different from economies based on productions and consumption of commodities. This new economy is based on:

- the intensive use of distributed networks to sustain and manage relationships,
- blurred boundaries between production and consumption,
- an emphasis on collaboration and on repeated interactions, care, and maintenance rather than one-off consumption,
- a strong role for value and missions.

In the list above, it is shown how it is present a double dimension, that is of critical importance when referring to the spread of social innovations. On one side, the importance of technology to be able to have “distributed networks” and the right tools, and, on the other side, the growing emphasis on collaboration, care, the human dimension, all leading to “putting people first”. (Murray et al., 2010)

Following this direction, more than focusing on a general accepted definition of Social Innovation, that is very challenging, an important insight coming from the literature review is about the approaches and the processes that arise within an innovation with a complex social purpose. This, in a way, is also more important for the purpose of this thesis work, trying to analyse the theoretical aspects behind these kinds of processes and somehow be able to define some important elements that can be applied in the organization of the case study of this thesis project.

3.2 Social Innovation process

According to Murray et al., (2010) Social innovation is distinctive with respect to other innovation in the new forms of cooperation and collaboration that brings with it. “*As a result, the processes, metrics, models and methods used in innovation in the commercial or technological fields, for example, are not always directly transferrable to the social economy. Coalitions and networks are increasingly turning out to be the key to successful change. Whereas in business the firm is the key agent of innovation, in the social field the drive is more likely to come from a wider network*”. (Murray et al., 2010)

It is clear that there is a shift to a more *open and distributed* innovation process in assessing complex and massive changes in societies, creating “new organisational forms” with ideas and problem-solution processes involving users, experts and other stakeholders included in the same project teams or in virtual organizations. (Murray et al, 2010)

Osburg & Schmidpeter (2013) stated “Open Innovation is a must for Social Innovation”. This is because to solve societal problems there is the need to have a deep and constant collaboration between different actors and stakeholders belonging to different sectors. Again, the authors, in listing some of the main elements to bring into action, to have successful Social Innovations, underlined the importance of *Building coalitions and cross-sectorial partnership* with a close collaboration and sharing of knowledge inside and outside their specific domain of interest.

Phills et al., (2008) agreed on the importance of recognizing the intersection and the needed convergence between different sectors, highlighting *exchange of ideas and values, the shift in roles and responsibilities* of the actors in the process and *the integration of private with public and philanthropic support*, as fundamental elements to have successful social innovations processes.

Ziegler (2017) stated how the social innovation processes cannot be just reduced to contestation between stakeholders having different focus on their relative own discipline of interest, but instead, it should create the right balance of discussion and cooperation to have more valued solutions. In his description of the transition from development to sustainable development and to innovation to a more specific social innovation, he stated how “social innovation creates spaces for disciplines and perspectives beyond established innovation studies”.

Yun et al., (2017) refers to social innovation considering it in a sharing and collaborative economy so that it is defined as Open Social Innovation. According to the authors, indeed, the success of social innovation processes is in the openness of relationships between four categories: *social value*, *start-ups* including SMEs (Small and Medium Enterprises), *big businesses* and *government*. Furthermore, social innovations are the interaction among opportunities, capital and people within different contexts like environmental, political, economic, regulatory and cultural.

The Young Foundation (2012) proposed their list of common features of Social Innovation mentioning how the related processes are *cross-sectoral* and *open* oriented and can involve different actors from businesses, third sector organizations, the state or social enterprises. Another important element to highlight, from the Young Foundation's study is that the social innovation process cannot be linked with the old, centralized innovation process but are usually "*bottom-up*", fostering ideas and solutions coming from a dispersed network.

Hence, Social Innovation is mostly agreed to be a "*collaborative concept*" as it is translated into the huge collaboration and openness needed within their processes. Apart from some differences with the traditional innovation processes in businesses, it is clear that Social Innovation has also different triggering values and motives that are, in a way, the starting point of the innovation process. From a material, tangible and economic trigger to more incentives like voluntary labour, humanitarian engagement and care.

In the following, as a way to have some important reflections on how to define a well-structured process, are outlined the two main Linear process of Social Innovation founded in the literature review: the first in six stages from Murray et al., (2010) and the second as a four-steps process from Mulgan (2006).

The Six stages of Social Innovation

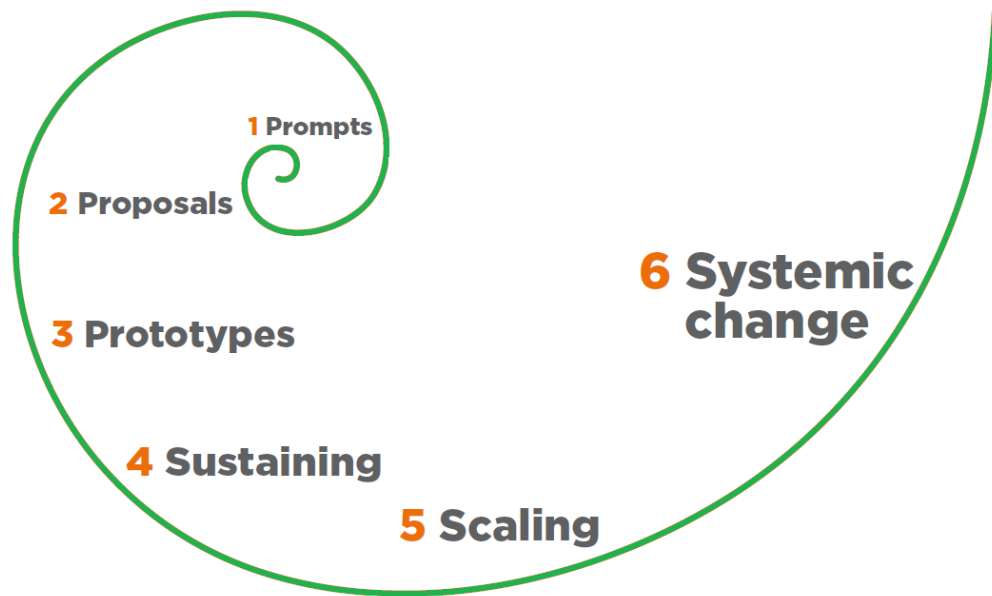


Figure 5 - The six stages of Social Innovation process based on Murray et al., (2010)

In defining their Social Innovation process in six stages, Murray et al., (2010) stated that, even if it can be thought as a lineal process, there can be loops between the different steps.

- 1) **Prompts, inspirations, and diagnoses.** This is the first step of the process and maybe the most important one to be able to tackle the problem in the right direction, starting from its radical causes. Innovations start with creativity and the creativity process needs a trigger, that in this case is a social issue that need to be studied and analysed. The authors mention some Research and Mapping method to better recognise problems: such as *Mapping Needs* through survey, open data or social indicators, or *Participatory Rural Appraisal (PRA)* that involves techniques like direct interviews, focus groups or events to understand particular issues directly from the community, and *Action Research* that confirms an emphasis on making research on the problem directly with people involved in the field.
- 2) **Proposals and ideas.** This is the step of the idea generation, the process to find solutions to the problem set in the previous stage. Here, the point is about how to involve the right stakeholders and what are the methods to facilitate their participation in the design process. Here, several different methods are listed such as: *imaging solutions with users, engaging citizens through media, creative*

thinking methods and open innovation methods like *Calls for Ideas, Competitions and challenges or platform to involve citizens* in the discussion, *Webinars, Dialogue Caf , events and conferences for networking and learning*.

- 3) **Prototyping and pilots.** Once a promising idea or a set of ideas are selected, they should be brought to a process of testing with continuous refinement.
- 4) **Sustaining.** This is the step in which the idea that comes out from previous stages needs to be secured. It has to be done to secure its financial future. Without any doubts an effective social innovation needs to be scalable and sustainable also from the economic point of view. This step is more about creating a sustainable business model that can bring the social innovation to reality and to the sphere of the financing methods.
- 5) **Scaling and Diffusion.** Being primarily oriented to social purposes, the aim with the social innovation is about funding methods for its rapid diffusion through collaborative networks, as a way to share innovations as much as possible. The methods listed tend to increase the demand of the social innovation through campaigning and raising awareness, and to increase the supply and the effective availability of the new product or service constituting the output of the innovation process. Use collaborations, conferences, diffusion through web and intermediaries, or refer to public procurement with governments that can play an important role in the initiation and escalation phase.
- 6) **Systemic change.** This is the last step of the process that underlines another important difference when referring to a social innovation process. Now the innovation provided brings a systemic change, a very massive change in how people behave and think. The authors in this section call them “systemic innovations” and involve a slow process of change in infrastructures, laws, behaviours and cultures. Some elements for supporting this systemic change are listed such as: *the formation of coalitions that bring different partners and create a critical mass, training professionals with new skills and attitudes* related to new systems, *implement legal and regulatory devices* to embed change, empowering beneficiaries of the new system.

To sum up, the Six Stages Process of Social Innovation described, highlights the steps and several methods that can bring real success in the development of powerful and

effective social innovations process. An important insight is again in the collaborative nature needed in these processes and in the methods described, involving not only innovation or technical development experts, but public institutions, private organizations, and also citizens in a distributed network. This is linked with what they call “Connecting People, Ideas and Resources” with the help of figures as Social Entrepreneurs and the institution of teams and hubs that can effectively drive innovation on the right line.

The 4-stages of Social Innovation process

Here, it is described the model of Mulgan (2006) in his study titled “The Process of Social Innovation”, another important reference to go deeper in the understanding of the characteristic elements of social innovation processes. The author before going in the description of the model and its four stages, confirm his belief that “*social change depends on many people being persuaded to abandon old habits*” and that “*every successful social innovator or movement has succeeded because it has planted the seeds of an idea into many minds*”. This model is quite similar with the Six Stages proposed above, at least in seeing the entire process as a collaborative network between many stakeholders. However, here are highlighted some important points that may lead to interesting follow up reflections.

1) Generating Ideas by Understanding needs and Identifying Potential Solutions. This is the starting point. Find a need that is not met efficiently by previously solutions. In the explanation of this step the author wants to underline how social needs can be less obvious and difficult to be recognized. In understanding the problem and the relative needs, personal motivations can play a critical role and social innovators, more than only take into account statistics analyses, have to tap into the problem with “*empathy*”. Then, needs have to be translated in solutions that can be technological, like a new product or a new service implemented, they can be new organizational forms that will work on the problem, or just new knowledge on the theme.

- 2) **Developing, Prototyping and Piloting ideas.** This is the period in which possible solutions are implemented and tested in a long phase of adjustments and experiments to put solutions in practice.
- 3) **Assessing, Scaling Up, and Diffusing Good Ideas.** This phase is again needed, as expressed in the previous model in the points 4 and 5, to have an effective process in which the social innovation can be replicated and scaled up. For the author this means to find the right floor to expand and to use the proper *communication*, that is essential in this phase. Social innovators, after the designing of the solutions, need to capture the community as a whole. Here, the author mentions the critical role played by governments in this phase, due to their ability in passing laws or in allocating public expenditure.
- 4) **Learning and evolving.** This last step highlights how innovations continue to change when start to be adopted, pointing out even some unexpected consequences that can generate a learning process. If best practises arise, the organizations involved in the innovation process have to align their solutions in a phase of continuous consolidation.

Finally, after having seen some characteristic elements in the Social Innovation process, it is a common belief that Social Innovation is increasingly becoming a widespread concept in many discussions in public and private contexts. Innovations, considering both outputs and whole process of adoption and diffusion, are shaping the world in which we are living, but now the key challenge is to use the proper innovative capacity to support sustainability in the direction of massive and complex societal problems such as poverty, justice, human rights, and wellbeing. (Westley et al., 2011) This can require a change also in the institutions and a cultural and political transaction. It is needed an effective support to innovation hubs and to social entrepreneurs in a way that can lead them to have the right amount of financial and motivational incentives, so that social innovations can be durable and scalable. Westley et al. (2011) agreed on the fact that “expert driven, centralized and top-down approaches to problem solving are not nimble enough to address global challenges

characterized by high levels of complexity and uncertainty”. Some new processes are required, new methods in the innovation process that are able to actively involve as many ideas and viewpoints as possible.

It can be confirmed that, in literature, social innovation processes are generally accepted to be collaborative paths. Phillips et al., (2008) stated that people involved in solving world’s most challenging social problems need to abandon the traditional way of thought and methods and, instead, leverage cross-sectorial dynamism and new methods of generating social value.

A final consideration that needs to be mentioned is what Osburg & Schmidpeter (2013) call “Social Innovation by Giving a Voice”. According to the authors social innovations are highly based on the voice of society/community/people/stakeholders. And in saying that, they also stated how there is the need to “re-learn” to listen people. It is important “the identification of the relevant society/stakeholders” as a first step on the way to social innovations. Be able to make the right questions and to create an open and flexible context of trust between different people within the whole innovation process. (Osburg & Schmidpeter, 2013)

3.3 Design for Social Innovation: co-creation and participatory design

An overview on the main characteristics that define and differentiate innovation processes addressed to social purposes has been provided. From literature review, it is also acknowledged that in setting social innovation processes, it is important to create a flexible environment fostering collaboration and the shifting of roles and responsibilities, creating a process of sharing and contestation of ideas among different stakeholders with different expertise.

This section will highlight the designing theories developments towards the sphere of designing for social innovations, aiming to a more sustainable future. Here, it is possible to find the emerging principles that drive Design Thinking approaches to *participatory design* and *co-creation* theories, and the characteristic elements relative to *design for social innovations*. This theoretical review has been important to set the right approaches during the phase of selection of the participants and in the setting of the methodology for the organization of the case study.

Throughout the 20th century, the term *design* was initially associated with the creation of a physical object or a space, then it was referred to all the activities that can facilitate a problem-solving process. It started to deal with Design Thinking methods and approaches described as ways to face and solve complex problems based on the iteration of five main stages: *empathise – define – ideate – prototype – test*, fostering a user-centred vision that can optimize the intersection between desirability, viability and feasibility.

Then, from the beginning of 2000's, some well-known designers started to see at design activities as ways to talk about massive change and social problems. (Westley et al., 2012)

Sanders & Stappers (2008) in their timeline snapshot about design principles' developments, focused on describing the more traditional disciplines and how these disciplines are moving towards new emerging contexts. In particular, it can be seen a shift from a more traditional design focused on products, architecture and planning, towards design disciplines that are increasingly focusing on designing for a "*purpose, for people, for emotion and for sustainability*".

It is increasingly recognized that there are new forms of design practices that in a way go outside the usual consumer and market culture, addressing their objectives to designing for social innovation projects. Designer professionals are expressing an increasing interest in being involved in projects that are concerning "sustainable development agendas". (Chick, 2012)

There is a strong belief that designing for social innovation is linked to theories of co-design, involving co-creation and open participation activities.

It is known, that in past decades, designers have increasingly moved to the user engagement to effectively align their activities with users' main requirements. Time by time, there was a shift in the design landscape with the promotion of co-design and co-creation activities especially in the "pre-design" phase to better explore the users' requirements and the problem context. (Sanders & Stappers, 2008)

These two authors also stated how Participatory Design principles are a must when dealing with social problems. In saying that, they mentioned the words of Nigel Cross that wrote: "*There is certainly a need for new approaches to design if we are to arrest*

escalating problems of the man-made world and citizen participation in decision making could possibly provide a necessary reorientation”.

Due to the complexity of many social problems, there is the need to push towards new design processes that can enhance the human creativity in the direction of scalable solutions that can be acknowledged as feasible and sustainable.

Also, according to Britton (2017) there is a strong link between co-design theories and social innovation. In his book he focused the attention on describing co-design principles for social innovations as ways to enable participant’s voice in the process, so that co-design becomes a process of mutual learning and collective analysis on what is needed and what can be done. The author underlined his view of co-design as the creation of on-going relationships between people working around the same problem-solution process, going through adjustments, reflective assessments, and provisional solutions. (Britton, 2017)

Sanders & Stappers (2008) stated how “participatory design has the potential to arrest pressing societal problems” involving, in the designing process, both design-experts and other people not familiar with designing. The authors, also, stressed the importance to have users and citizens participation in the decision stage but also in the moment of idea generation about the new product or service to be implemented. What can be difficult in fostering and implementing powerful co-design activities is the fact that people must be aware that can actively be involved in the process and can act with their own creativity.

According to Chick (2012) a shared visions with several stakeholders are most likely to be effective when dealing with such pressing social problems. The author has stated how “citizens and users are moving from passive consumption of design to a more active participation in the process and maintenance of the outcome”. Further, Chick (2012) underlined how designer professionals and other interested in social design should be aware of some changes in the methods and tools for the investigation, as well as the fact that the design, about social field, is still in a fluid phase and so constantly evolving. Design schools are trying to understand and enhance specific processes and design practises that better fit with the research of a solution to social massive issues. For instance, the Italian designer Ezio Manzini formed the DESIS Network, that stands for “Design for Social Innovation and Sustainability”, and concentrated their studies in understanding the most important elements when

designing for social. Two important elements are highlighted from the DESIS Network. Also here, it is found that the engagement of a variety of actors is central to the whole process, and this has to lead to the active participation of users, technicians, entrepreneurs, civil society and local institutions. The second important element is about the role of the designer that shifts to a supporter for the development of new concepts, so going from generators to facilitators of ideas. (Chick, 2012)

What is sure is that bringing co-creation and co-designing theories in the design practices affects the tools and the methods to be used during the activities. (Sanders & Stappers, 2008)

As, stated before, the design principles related to social innovation purposes are still in a fluid phase, but it is clear how designers and related innovation processes are continuously evolving, with an increasing engagement of very different stakeholders in the requested activities.

According to Chick (2012), the main principles that characterize Design for social innovation are:

- **Participatory design:** the whole design process cannot be just based on the consultation of citizens or users but on their active participation,
- **Designing network:** by creating a powerful network of stakeholders that are directly affected by the problem and have interest in proposing solutions,
- create a **human-centred and emphatic environment** fostering a right “hands-on” participating mind, using mock-ups, sketching or design games.

Other important insights came from the studies of Westley et al., (2012) about Change Labs or Design Labs for Social Innovation, that are defined as processes that bring together several stakeholders to develop a deep and common understanding of a problem space. The authors tried to define some important elements that particularly differentiate these innovation processes from the traditional ones used in technical environments. In doing so, basing on theories about group dynamics and psychology from the social scientist Eric Trist, they advocated that to address massive problems there is the need to put “the whole system in the room”. This is the way to create a “robust process” that can effectively provide good solutions to the problem. Following,

are listed the main important successful elements for these kind of Labs for social innovation:

- the need of a **broad-based research of the context** to initiate a workshop with a fundamental general base of understanding of the problem,
- the necessity to foster **co-creation of solutions** between different stakeholders' sectors, promoting a balanced amount of diversity in opinions and expertise,
- the necessity to create a **specialized environment** that brings participants outside from their routines,
- the need to provide to all participants in the designing process a **detailed explanation** of what they are doing, **highlighting the requested tasks, the objectives** of the workshops and how their work can be useful,
- the need to have, during workshops, a **multidisciplinary support staff** that can support participants in providing the requested information or a more technical support in the designing activities.

These designing emerging principles linked with Social Innovation processes have highlighted how a well-diversified group with the right competences and experiences can direct their innovative capabilities and creativity even to very tough social challenges. All the main elements and design methodologies described above were of substantial importance and were kept in mind during the organization and the actual management of the different phases of the case study, described in the following chapter.

3.4 Characteristics and specifications of Social Hackathon events

It has been clearly marked how the concept of co-creation designing process has become increasingly important in determining the success in the development of a new service or product that address complicated social needs. In this direction, Social Hackathons are a powerful innovation strategy that can create the right co-creation process, actively involving different stakeholders in the innovation process within a brief-time space.

Social Hackathon events are relatively different from IT and business hackathons since they are more connected to the public sector, embedding different methods and logics. These events can involve local municipalities, NGOs organizations, social entities and citizens that can work around a specific social issue in the interest of the community. Sometimes Social Hackathons events are also associated with the terms “civic hackathon”, identifying short competitions, often organized with the help of governments, that put together a heterogeneous expertise of participants to prototype solutions to social challenges. (Ermoshina, 2018) The author, in his paper, advocated that now the gathering of different people, with the possible inclusion of citizens in the innovation process, has the aim of developing a “direct participation” that can create “a better world” or can “improve life conditions”.

It is important to say, that often social hackathons’ purpose goes outside the resolution of “tiny” and civic “wants”, but rather, they are more referred to solving “first world problems” helping vulnerable people who cannot respond to their problems by themselves. (Ermoshina, 2018)

The most important elements and specifications that characterize these Social Hackathons events are outlined as follow.

The pre-organization phase of social hackathon events is a very fundamental step. Once the specific social challenge to work on is identified, and the project scope is outlined, social hackathons are then based on a **deep analysis of the state-of-the-art of the problem**. When dealing with social needs, it is more difficult to have a clearer view of the situation because of all deeply rooted elements to interpret, most of them not tangible.

When considering hackathon events related to business and consumerist concepts, needs and goals to achieve are more perceptible and calculable, easier to identify. Hackathon events related to social concepts instead, have abstract and indefinite needs and targets.

For this specific characteristic, it is important that the organizing team, promoter of the event, is composed also by people that are closer to the specific social context, experts that can better support the development of the project in all its phases. The powerful contribute from these experts is in the clarification of the specific dynamics of the social area, setting the best guidelines for the hackathon.

Once, the main social context is established, it is important to analyse it in order to define and illustrate precise challenges. (Ermoshina, 2018)

Social Hackathons are represented by a strong component of *interdisciplinarity*. This aspect is required in the core organizing team, for the development of an accurate agenda and structure, but also in the participants and stakeholder selection phase.

This recruitment stage is particularly important due to the need to have several skills that can foster the innovation process and the generation of ideas from various perspectives, increasing the quality of concepts and services ideated. (Toros et al., 2020).

For Social Hackathons the **role of mentors**, that is mentioned also in the section about hackathons' related success factors, is highly recommended. It is important to have mentors from the business and technology contexts together with professionals already working with vulnerable groups. (Bugarszki et al., 2021)

It is important, during social hackathons, to have the possibility to deal, with *subject experts* with more expertise and knowledge about the contest, so that they can facilitate the whole ideation development process.

Even Chowdhury (2012), in his research about the bottom-up innovation processes to hacking health issues, stated that the key, in these types of events, is to break down the barriers between technical experts and practitioners who already know which solutions better fit the context.

Toros et al., (2020) in their study of about 14 different social hackathons, stated how for these events there is the development of the aspect of “**seriousness of engaging**”. According to the authors, the right engagement process and the motivational aspect are critical in social hackathons. People involved in the hackathon process need to

effectively feel themselves involved in the activities promoting a “**joint contribution**” and a “**common understanding**”. These latter aspects are promoted when the right interdisciplinarity in hackathons’ participants is present and when the “principle of equality” in the related teams is encouraged. Different backgrounds and visions can ensure a deep analysis of the context, fostering discussion and contestation on the specific social issue, while non-hierarchical relationships between participants create the proper flexible and open environment.

This common understanding aspect is what also gives the proper engagement of participants in the process, so that all stakeholders come together to analyse what is wrong with the current system and what must be improved. (Bugarszki et al., 2021)

Hackathons can have a great potential in the setting of co-creation activities, but social types need to be “**flexible, sensitive and humanistic**”. The typical competitive aspect of hackathon projects has been replaced by empathic and humanistic vision, promoting the creation of new relationship patterns between designers, vulnerable users and other participants. (Toros et al., 2020)

When hacking for social good, developers need to abandon the contention aspect and promote concrete solutions just “to help in create a better world or improve life conditions of people in the nearest future”. The motivational inputs are not about money but the desire to create all together something socially significant. (Ermoshina, 2018)

The problems faced in social hackathons are massive societal and community problems and it can be difficult to deal with them during the limited time of hackathons. In this direction, another key characteristic is **the focus on the follow-up activities** after the end of hackathons. *“It is important to capture the values and the knowledge created in social hackathon. Otherwise, if openness, involvement and equal participation end with the social hackathon, then the ideas might not be kept alive and implemented in practice.”* (Toros et al., 2020)

These types of hackathons can involve the provision of a different set of activities that can facilitate the connection between participants of these events and the most promising solutions to an ecosystem of incubators and accelerators that can support the early stages of the development process, causing a longer-term benefit from the event itself. (Chowdhury, 2012)

SOCIAL HACKATHONS' SPECIFICATIONS	EXPLANATION
Deep analysis of the state-of-the art of the problem	The organizing team and participants should firstly focus on understanding the problem-related root causes
Interdisciplinarity	It is suggested to have multidisciplinary both in the organising team and participants. Relevance of the role of mentors and subject experts
Seriousness of engaging participants	It is important to foster an active collaboration, enhancing “ joint contribution ” and “ common understanding ”
Flexible, sensitive and humanistic environment	In social hackathons there is a shift from a competitive dimension to a humanistic and empathic one
Focus on follow-up activities	Due to the difficulty in approaching massive social issues, post hackathon's steps have greater relevance

Table 6 - Social Hackathons' specifications

4 Ethic Jobs in Agriculture – (EJA)

This chapter is focused on the description of the case study of this thesis project. The aim is to provide all the elements and the steps that have characterized the organization and the development of the social hackathon “Ethic Jobs in Agriculture”. In this chapter, the project scope of the event, the selection of the core team, and the phase of recruitment of participants will be outlined. Furthermore, there will be a focus on the specific methodology and timeline structure chosen for the development of the hackathon in line with the objective to overcome the main limits usually linked with those kinds of events - mainly related to the brief duration and the resulting superficial short-term solutions. Finally, the different phases, the preparatory activities, and the results of the two workshops that have characterized the entire event will also be presented in detail.

4.1 The project scope

The event “Ethic Jobs in Agriculture – (EJA)” can be described as a Social Hackathon to find a scalable solution to tackle labour exploitation and “caporalato” in the agricultural sector.

This project has been selected by “SmartAgriHubs” (SAH) among the winners of the “SmartAgriHubs Hackathons and Challenges – RESTART Open Call”, an open call that received funding from the European Union’s Horizon 2020 program. The results from the challenges and the hackathons, within this SAH’s open call, can be either conceptual solutions or Minimum Viable Products that can be used as a baseline for a follow-up real implementation and introduction into the market. The SAH project aims to realise the digitalisation of the European agricultural sector in a way that can foster excellence and sustainability.

In line with these requirements, this Hackathon was intended, since the beginning, as a first step in the whole innovation process, without the requirement of dwelling too much on the prototyping phase. So, the main scope of the event was to set a conceptual development process through a deep exchange of ideas and concepts within a group of different stakeholders representing distinct experiences and knowledges. The expected

result was actually the definition of a well-defined concept solution that can leverage technology and collaborations among different agricultural companies to provide more secure and fair jobs in agriculture.

Among the different classification of hackathons, it is important to state that this Social Hackathon has been intended as a non-competitive hackathon where participants gather to work around a common social goal, with a determined set of actions to be followed during each phase of the entire process, as will be also described in the following sections.

4.2 The core team

The organizer and promoter of the event was Social Innovation Teams (SIT). Since the very initial pre-organization phase, it was defined a core-team of 10 people to assure the right alignment for the development of the agenda and the selection of the ad-hoc methodology. The selection of the core-team members was based primarily on the willingness to create a team with different backgrounds and competences to cover all the necessary tasks. Indeed, the core team was composed around three main roles:

- **Coordinating** (a Coordinator and a Vice coordinator)
- **Scientific** (a Scientific director and a Vice director plus three members as Scientific Support)
- **Organizational** (an Organizational director plus two members as Organizational support)

The right competences and the division of roles was of substantial importance to better define responsibilities and to perform all the tasks. The coordinator and organizational roles have contributed to set the right internal alignment about the different deadlines throughout the duration of the project and have offered an operating support in promoting the event and in finding the right stakeholders to be involved. Further, these roles have been important for the technical support during the workshops to manage videos, presentations and difficulties emerged.

The scientific support was critical in the definition of the methodology and of the detailed time planning structure of the hackathon. Studying the emerging designing

principles linked to social innovation contexts and analysing the main positive elements and gaps characterizing hackathons, the scientific members have structured a distinct methodology trying to overcome the temporal limits and to provide a better engagement of participants. In doing so, they developed the required introductory materials to engage participants, and they have provided the methodological support during the live sessions acting as moderator and subject experts. This latter aspect was important because they acted as a powerful guide during the ideation and designing process, solving doubts and explaining theoretical principles to people that were not so familiar with them.

The core team of SIT had also the support from different partner organizations such as “Biova Project”, “Impact Skill” and “Biorfarm”. In particular, this latter partner, that is already working in the agri-food sector, have provided an important support especially in facilitating the engagement of farmers and of laborers’ representatives. Another fundamental support has been received from “Humus Job” that can be defined as the main partner in the development of the Hackathon. This innovative startup with a significant social impact, is already working to fight labour exploitation and “caporalato” in agriculture with a well-defined service offering a platform of ethical job search for laborers and a system known as “Humus Contract Network” with the aim of building an ethical network for the regularization of work based on sharing and collaborative economy. Humus Job’s founders have acted both as mentors and partners during the organizational phase and as participants during the live workshops, offering their past experiences in the context. They answered to several questions from participants and have contributed to the effective development of concept solutions.

4.3 Definition and recruitment of participants

This has been a very crucial phase in the preliminary activities for the event. This recruitment and selection have started during the month of December 2021, and they have been carefully addressed especially by the organizational roles with the help of partners. As a very important hackathon’s success factors, the right number of competences in the group of participants can actually define the success of the project to achieve or not its goals.

Participants are the ones who are actually going to share opinions and ideas trying to propose solutions, so the resulting concept solutions highly depend on this preliminary phase of selection.

The core team firstly worked on the:

- definition of the right stakeholder’s group to have a good balance in the composition of participants,
- the definition of the means to reach each stakeholder’s group,
- engagement of stakeholders,
- creation of a final list of participants.

The first point was a key step in the organization of the event. Based on the context, the main project scope and the specific sector, the organizational team tried to reach various stakeholder groups, and in particular: students, innovation experts, entrepreneurs, farmers and farmhands’ representatives. This was important to create a powerful connection between people experienced in the technical and innovation field with frontline people, already working every day in the agricultural sector. This approach allowed the correct development of the hackathon process, in terms of methodology and designing approaches to be followed and, at the same time, it allowed a clear analysis of needs and objectives of farmers with a well definition of the criticalities related to the whole agri-food supply chain.

About the means and the channels to reach stakeholders groups selected, the core team directly contacted students, entrepreneurs, and innovation experts, while the link with different farmers and laborers’ representatives was supported by the main partners. In particular, participants were reached through:

- submission on landing page of the event,
- direct mailing to university students,
- direct mailing, phone calls and WhatsApp messages to selected experts,
- direct mailing, phone calls and WhatsApp messages to selected SMEs,
- newsletter and social media,

- direct mailing to partners asking for support in reaching farmers and laborers’ representatives.

In fact, due to partner’s experiences and direct contact with laborers, it was easier to reach also these stakeholders and create an internal link with the core team through the creation of a dedicated email inbox for being able to easily communicate.

The landing page was a very good mean and an easy way to maximize the diffusion and the awareness about the event, so that participants could easily read about the project objectives and download the dedicated Brochure. This was a very first step in the engagement of participants, communicating an overview of the problem, the main project objectives and the hackathon timeline. Regarding social media, in particular LinkedIn, Facebook, Twitter and Instagram platforms were used as a public call to share the opportunity with a various target of people. This allowed the participation of people, not directly selected and contacted by SIT, that have signed up expressing their interest on the theme.

At the end, a list of interested people was created, pointing out emails and their specialization. This was useful to further analyse if the needed heterogeneity of participants had been achieved. The very first list was about 65 participants interested on the project, that had confirmed a balanced composition about age, gender and expertise that effectively enabled the right engagement and the desired active participation during the entire hackathon process.

4.4 The chosen methodology and the resulting EJA timeline

In this section, it is described the specific methodology chosen for the development and management of the hackathon, highlighting the reasons that have driven the SIT core team in setting the EJA – timeline.

In setting this ad-hoc methodology, SIT started to analyse all the specific theoretical elements linked with the *design for social innovations*, and all the main specifications related to Social Hackathon events. Important elements were stressed, such as the need to foster co-creation activities within the whole ideation process and the need of putting efforts in the recruitment stage to have balanced and multidisciplinary teams. SIT core team reasoned on the best fit approach for the management of the event,

thinking about which specific hackathon’s features to set. It was decided, since the first time, to organize a social hackathon without any level of competition between participants but with a *flexible and empathic environment*, to have a continuous sharing of ideas and reflections towards a common desire. In addition, about the type of conduction, it was decided to provide a *dedicated approach* (see this classification in the section 2.2) in order to guide all participants in a pre-determined numbers of tasks within the process. This last element was seen as appropriate due to the difficulty in approaching the massive social issue of “caporalato” in agriculture and because of the desired multidisciplinary within participants, including both innovation experts and people already working in the agricultural sector, as also specified in the previous section.

Another crucial consideration that led to the chosen time-line structure for EJA, was about the main critical limitation of hackathons – the time. As stated in the dedicated section, the brief time frame usually used for these events – from one to three days during the weekends – can lead to superficial results that, often, are not effective solutions to the problem. This may be even more prevalent when the goal of the hackathon is finding a solution to very serious social issues, with deep and difficult criticalities to be analysed.

For this reason, it was set a new structure, completely different from the usual hackathon’s formats – thinking about this event as a longer ideation process. In the following figure, it is represented the EJA – timeline.

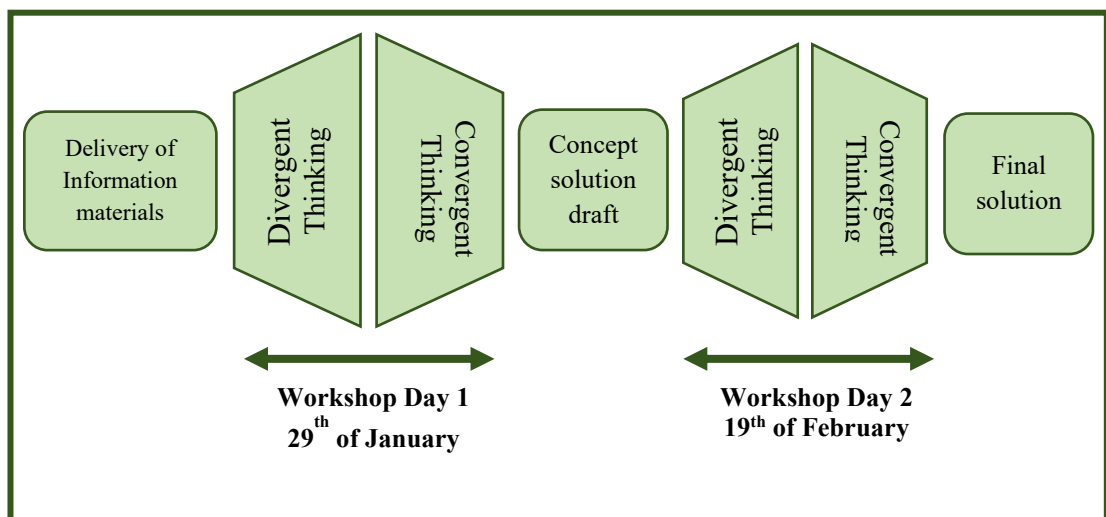


Figure 6 – EJA timeline

This timeline was the very strategical element used by SIT in the organization of this event. The pre-activation phase, with the delivery of informative materials, and two virtual workshops spaced out by a period of three weeks, were intended to give more time for reflection to participants, in order to be more empowered during the two workshops. This empowerment comes from the possibility, for participants, to develop their own knowledge about the context and to be aware of the needed activities of the workshops already before their start. This can maximize their active contribution during the ideation process within the workshops and led to a more efficient use of the time.

The delivery of informative materials has constituted an important inspiration and stimulation step with a very first “call to action” for participants, invited to arrive at the first workshop with their own proposed solution, based on their individual knowledge and experience but also on the main elements derived from the reading of informative documents.

This strategical element was repeated also before the second workshop. In fact, all participants received a report, highlighting the main results of the first workshop, a brief where the core team indicated the next activities and the challenges related to the figure of agricultural laborers, and a template to propose their idea.

This was in line with two already mentioned critical elements of Social Hackathons, the setting of a “common understanding” and a “joint contribution” that, here, were achieved since before the beginning of virtual workshops, having the possibility to use more efficiently the restricted time of the virtual sessions.

To draft the methodology, SIT combined concepts derived from Design Thinking techniques and Service Design, systemizing the development of ideas and solutions in a *divergent* and a *convergent* phase. This approach, as it is showed in the picture above, was used both for the first and the second workshop, starting with a divergent approach to create an open and continuous generation and sharing of ideas, and to move afterwards to a convergent approach to select the more preferred concept-solution.

Following the Design Thinking principles, the main objective was to define the three main iterative steps: ***Inspiration*** – with the preparation of informative materials, ***Ideation*** – with the process of the first workshop, and ***Implementation*** – with the service ideation process developed during the second workshop.

Finally, to assure a more active collaboration and facilitate the right development of the process, the tool “Mural – Online Collaboration Whiteboard” was used in both the virtual workshops. This allowed, on the one hand, a time-by-time representation of the progress in the ideation activities, and on the other hand, a more “hands-on” oriented mind for participants that could see, use, and share sketches and comments directly on the virtual whiteboard.

In the next page, a more detailed representation of the EJA – methodology and timeline is provided.

Ethic Jobs in Agriculture – (EJA)

TIMELINE

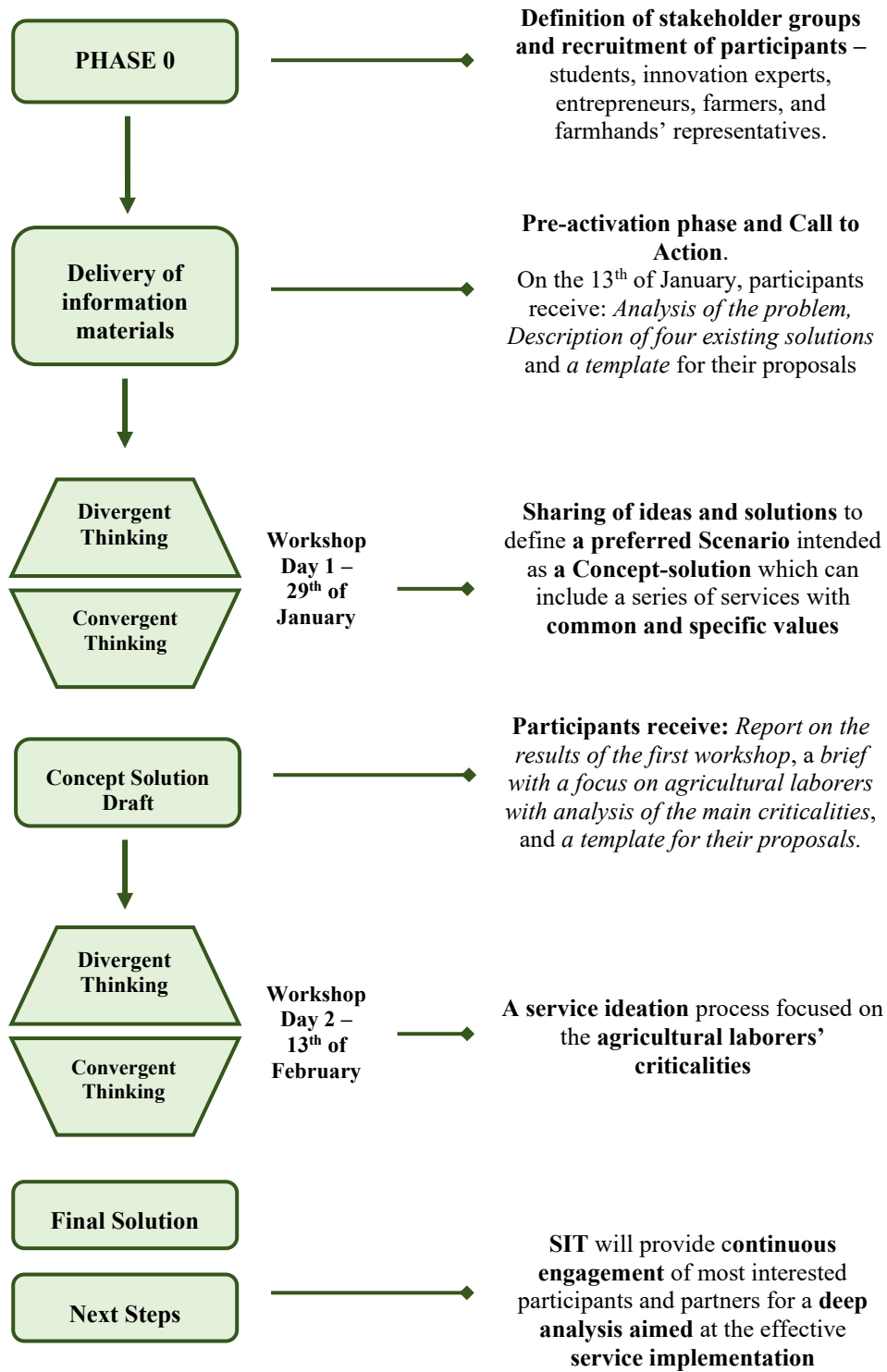


Figure 7 – Detailed EJA methodology and timeline

4.5 Delivering informative materials to participants – Call to action

After having defined the list of desired participants, the SIT core team, concentrated their effort on the first phase of the EJA event: the delivery of information materials to participants.

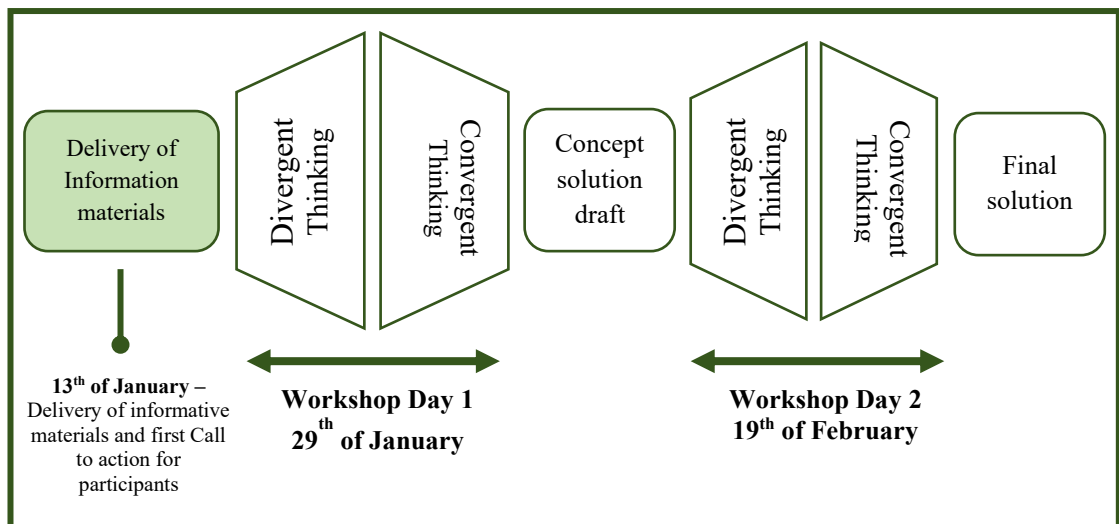


Figure 8 - EJA timeline: Delivery of Information materials to participants

This preliminary phase, conducted by the working team since the beginning of December 2021, allowed a deep analysis of the state of the art of the problem to have the proper understanding of the context and to be aware of the already existing solutions. In doing so, it was possible to define the several root causes of the problem of “caporalato” in the agricultural sector and understand which directions can be taken during the concept solution development process. In particular, the core team have prepared and drafted three documents:

- a dossier analysing the problem of labour exploitation in agriculture in Italy
- a description of four existing models proposing a solution to the problem
- a presentation summarizing these two documents

In order to draft these three documents, the core team started a literature review on the theme together with an analysis of some publications of specific organizations whose work is reporting data on the problem of labour exploitation in the agricultural sector

in Italy. In addition, articles, websites, some reports of parliamentary sessions and data from ISTAT (the Italian national institute of statistics) have been used. For the analysis of the four entrepreneurial models described, firstly their websites have been consulted. Later, for two of these models, some interviews with representatives were conducted to better understand all the dynamics of the proposed solution.

These three documents have been sent to all stakeholders on the 13 of January 2022, about two weeks before the first live workshop, together with a blank template to be filled by participants with their own proposed solution.

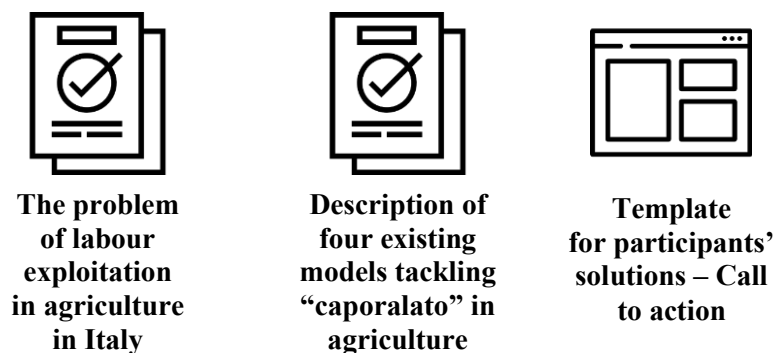


Figure 9 - Informative documents and Call to action

This was a very strategical point, because all participants have had the time to read the materials, investigate the main topic and arrive more prepared to the first workshop. In fact, delivering informative materials, allowed to use more efficiently the time during the live session in the first workshop, without having to delineate all the aspects of the addressed social issue. Also, the delivery of the document about existing models as solutions against "caporalato" in agriculture represented a way to stimulate ideas creation in the participants' minds.

In the following, are introduced the key elements presented in the two main documents listed above: *the analysis of the problem of labour exploitation and caporalato in agriculture in Italy* and *the description of four existing models of solutions*.

4.5.1 The problem of labour exploitation in agriculture in Italy

The main elements presented in the document about the analysis of the problem are delineated in this section. Participants have been able to investigate the topic starting from the definition of irregular or “black” work, characterized by the employment of workers in absence of any notification to the “Centro per l’Impiego”, with evasions of taxes and contribution payments. In addition, in many economic sectors, such as transport, construction, logistics and care service, irregular work practises are linked with forms of labour exploitation and illegal recruitment, a phenomenon known with the term “caporalato”. Violations of working time, health and safety regulations, degrading housing and working conditions are the main critical elements characterizing the phenomenon. The focus, later, shifted to the analysis of the main causes that make irregular work and labour exploitation particularly widespread in the agricultural sector. As stated in the “*Piano Triennale di contrasto allo sfruttamento lavorativo e al caporalato in agricoltura (2020-2022)*”, promoted by the Italian government at the end of 2019, the factors leading to a high incidence of exploitation in the agricultural sector are:

- massive short-term employment in isolated locations, often leading to the creation of informal housing settlements,
- housing and transport systems that are inadequate to meet the needs of workers in the sector,
- the precarious legal status of migrant workers.

This last element is the one on which the “caporalato” system is mostly based. Migrant workers are, indeed, the most exploited due their social and legal precariousness that allows employers to take advantage of their situation of vulnerability and need. Another risk factor, that affirmed labour exploitation especially in this sector, is the long value chain of the agri-food industry composed by several intermediaries between the small producer and the final consumer with a consequent high dispersion of value along the supply chain. Farmers, especially the “small” farmers, can achieve very low margins from their activities and this can lead them to look for irregular and underpaid workforce, as a way to reduce their production costs. Therefore, participants could understand how the issue to be tackled is also based on economic aspects, and there is

the need to find instruments to allow farmers to be both economically efficient and to act legally towards regular employments.

In this document, the core team tried to provide also the consequences of the pandemic on the issue. *“The Covid-19 pandemic has dramatically highlighted the systemic nature of the exploitation of seasonal workers, especially in the agricultural sector”*, says the section on the effects of the sanitary emergency in the “Documento conclusivo dell’indagine conoscitiva sul fenomeno del caporalato in agricoltura”, approved at the parliamentary session the 12th of May 2021. The pandemic has also revealed the substantial interconnection and dependence between the agricultural sector and foreign and often non-regular labour. In fact, the restrictions imposed by the pandemic generated workforce shortages during the first lockdown, causing damages especially for the activities supported by temporary employment of foreign laborers. (Cortignani et al., 2020)

Also, the pandemic has highlighted the problem related to migrant farmworkers. This happened because of two main reasons: the first is that migrant farmworkers have become essential workers to ensure food supplies during lockdown, and the second is because their precarious living conditions could have become risk of contagion for the society. (Tagliacozzo et al., 2021)

According to the data, provided by the “V Rapporto Agromafie e Caporalato” drafted by the Observatory Placido Rizzotto/Flai-Cgil, the Italian situation, regarding “caporalato” in the agri-food sector, counts about 180,000 particularly vulnerable workers in condition of marginality and labour exploitation – in the reference period from October 2018 to October 2020. Further evidence of the greater relevance of the problem in the agricultural sector is provided by the data from the “Ispettorato Nazionale del Lavoro (INL) presented both in the “Piano” and in the “Rapporto”, mentioned above. These data confirmed that out of five thousand verified irregular workers, the 74% were related to the agricultural sector.

Finally, in the document, are also presented the main law enforcement measures, represented by the Law. No. 199 of 2016, and by the already mentioned *“Piano Triennale di contrasto al fenomeno del caporalato e dello sfruttamento lavorativo in agricoltura (2020-2022)”*. The “Piano”, led by the Ministry of Labour and Social Policies, is the most important initiative in tackling the phenomenon and it was created to reach an agreement, with the political institutions and stakeholders, on a long-term

national strategy to protect and support victims in their inclusion in society and in their access to decent and regular employment systems.

The initiative is based on three main strategical steps: mapping of agricultural areas and their labour needs, urgent operations for emergency situations, systemic and long-term operations.

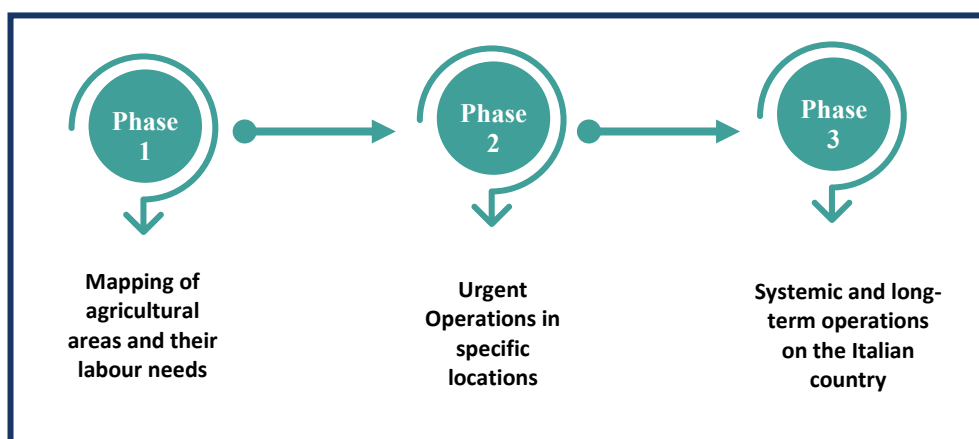


Figure 10 - The three strategic steps of the “Pano Triennale di contrasto al fenomeno del caporalato e dello sfruttamento lavorativo in agricoltura”

The plan also indicates 10 themes named as “Priority actions” listed in the following:

- Create an informatic system on the agricultural market’s needs
- Encourage innovation and development of farms
- Strengthen the “*Rete del lavoro agricolo di qualità*”
- Plan and improve services for matching supply and demand of work
- Plan new housing solutions
- Plan and implement new solutions to improve transport systems for agricultural workers
- Create a communication and sensibilisation campaign
- Strengthen surveillance and law enforcement activities
- Planning integrated services for the protection and initial care of labour exploitation’s victims
- Realization of a national system for social and occupational reintegration

The analysis of the strategies and the measures listed in the Piano, was an important starting point for the core team to further analyse the context, but it was especially important for participants that could understand the main criticalities and think about them as guidelines for their proposals.

4.5.2 The description of four existing models of solutions

As also stated before, this represented an initial phase of ideas stimulation and a starting point, for participants, to think about the scalable solutions to propose during the workshops. In the document, delivered to participants, four relevant entrepreneurial models have been listed and studied, one of them represented by the main external partner of the event: “Humus Job”. All the models presented propose an innovative solution with a strong social impact that considers new relationships between all the actors in the agri-food supply chain, trying to solve the massive issue of labour exploitation in the Italian agricultural sector. The models used as reference are:

- **Humus Job**
- **No Cap**
- **IN CAMPO! Senza Caporale – Associazione Terra!**
- **Resto in Campo**

To have an initial understanding of the services provided within these four models, the core team started a review of their respective websites. In addition, for “Humus Job” and “NoCap” some direct interviews were conducted to detail the main important elements of their solutions.

“**Humus Job**” launched, in 2020, **the platform of ethical job search** for agricultural workers and the system today known as the “**Humus Contract Network**”. The main objective of this innovative start-up is to create an ethical network of farms to foster the regularization of agricultural jobs through sharing and collaborative economy. Entering in the network, allows farms to share best practices, ethical values, production means and expand commercial lines. The strong point of Humus is the service “**Job & Sharing**”, which allows **the temporary secondment of employees** between farms belonging to the network. All the bureaucratic activities of the sharing are managed and supported by Humus Group and this service can ensure, on the one hand, the

optimization of recruitment costs for companies and, on the other hand, a longer continuity of employment for agricultural laborers. This can create a stronger economic sustainability for the agricultural companies promoting, at the same time, an important role in fighting labour exploitation.

“**No Cap**” association proposes to act on a global level on the entire agri-food supply chain by sharing a “**social project**” **between all actors**. The actions start with a direct contact with laborers on the fields, by offering them basic assistance and a support in finding safe accommodations. Furthermore, the association inserts them in a circuit of regular work within the farms of the “No Cap” chain. For the agricultural companies who decide to join this ethical chain, the association provides them legal assistance for the recruitment and compliance of workers. In addition, together with farms, the association makes an analysis of production costs to determine a fair sale price, guaranteeing the commercialization through specific distribution channels belonging to the chain. Producers who share the initiative are “awarded” with the **NOCAP label** on their products to make it visible to consumers and encourage them in making ethical choices. Here, the problem of consumer’s awareness, about the labour exploitation in agriculture, stands out. The greater the awareness, the greater will be in turn the demand for the purchase of these products, encouraging more and more farms to produce in a sustainable and ethical way.

The third reference model of solution is the project “**INCAMPO! Senza Caporale**” provided by the Association “Terra” in the Puglia region. This initiative is based on a project of social inclusion that sees **education and training as tools for the emancipation and valorisation of agricultural laborers**. The project, with annual recurrence, starts with the allocation of paid work grants for a group of workers in very vulnerable conditions, that become beneficiaries of the project. In this way, these workers start a period of traineeship, both in classes and on the fields of the partner farms, **acquiring specialized agricultural education and a more technical language for the sector** useful to find jobs after the traineeship period. This is the beginning of a path that can result, for beneficiaries, in the acquisition of autonomy and long-term social-work integration.

The last model proposed to participants is the application “**Resto in Campo**”, a software developed by “Anpal”– the Italian national agency for job policies. In this case, the model proposed aims to make an impact on an important critical aspect: foster

the matching between demand and supply of agricultural labour. The application allows farms to add job offers and check the applications received, while workers in turn can enter their application attaching skills and geographical availability.

So, it is clear, how the description of these models, made participants understand properly some of the main criticalities related to the labour exploitation in agriculture and which are the more practical needs of the different actors in the supply chain. The need to think about economic sustainability of farms, the importance of considering the whole agri-food supply chain to create partnerships and raise the awareness of all the actors, trying to foster more ethical choices from the producer to the final consumer.

4.6 Workshop Day 1 – Selection of a single Scenario

In this section all the elements and reflections that have characterized the first workshop of the hackathon EJA – Ethic Jobs in Agriculture are presented.

The first workshop was held online on Saturday, January 29th, 2002, via the Zoom platform, and involved about 30 participants, representing the main requested stakeholders: students, researchers, innovation experts, entrepreneurs, farmers and farmworker representatives. The main objective, as showed in the following figure, was to provide a general draft of a concept solution using **one divergent and one convergent phase**. In particular, the concept solution draft will be represented by a Scenario, intended as a set of possible services who share clear and common values.

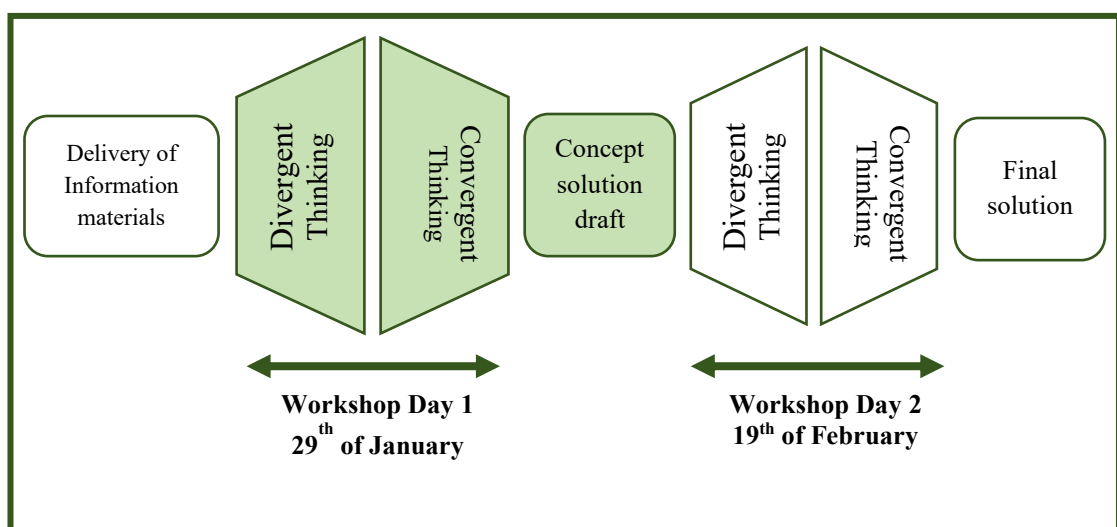


Figure 11 - EJA timeline: Workshop Day 1

After a brief presentation of the core team members, to align each participant on the different steps, the dedicated methodology and the EJA timeline was discussed and represented to all participants. This was important to give participants a clear view of the process, including the later stages, and to highlight the aim of each step together with the overall objective of the EJA event: the search for a scalable solution to tackle the phenomenon of “caporalato” and irregular work in agriculture.

During the first phase of divergent activities, all participants’ ideas as solutions to the problem were discussed and collected. The convergent phase was used to converge towards a shared direction of development, pointing out a first draft of the concept solution, represented with a Scenario. Within these two macro phases, the workshop was made by a succession of the following actions:

- **share:** all solutions have been presented and discussed in the plenary section,
- **collect:** during the presentation of ideas, there was the identification of a series of value pairs, interpreted as strategic direction representing the proposed ideas, and according to which the ideas were organized. A plenary discussion has later led to the selection of two preferred pairs of values, considering most promising, in order to generate four scenarios of services applicability,
- **select:** a single scenario was voted, commented, and chosen directly from participants on the basis of a list of criteria provided.

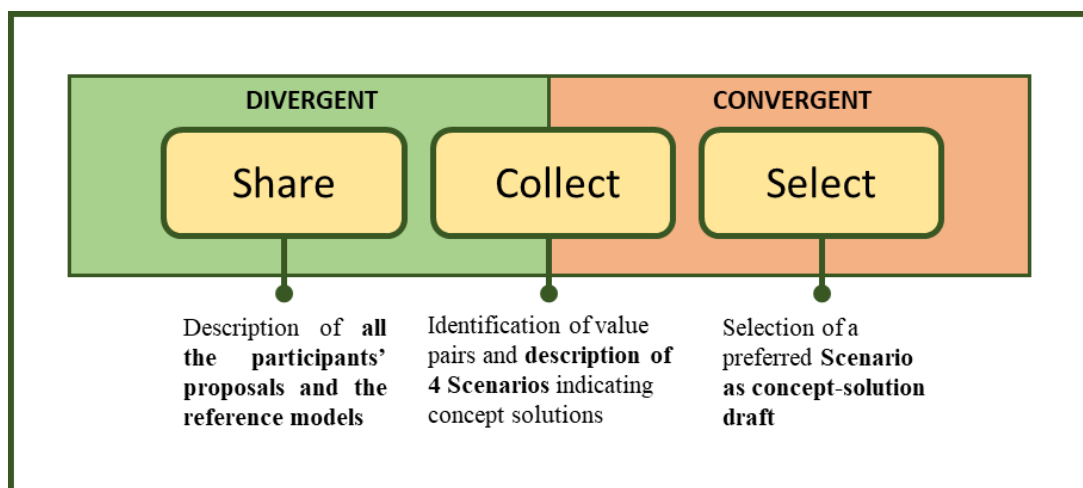


Figure 12 - Activities of the first Workshop: Share - Collect - Select

In the following, the activities that have characterized the divergent and the convergent phases of this first workshop are presented.

4.6.1 Divergent Phase

During this first stage, there was the presentation of all the reference models proposed in the informative materials. This was followed by the presentation, by the same proposer, of all the ideas resulting from the compilation of templates. At the same time, thanks to the activity of guided brainstorming, facilitated by the core team of SIT, there was **the identification of different value pairs**, giving space to participants' comments and evaluations.

The pairs of values have been defined as values whose include within themselves two opposite directions: on the one hand, the value towards which the idea is leading, and on the other hand, the value from which the idea is moving away in terms of concepts represented. It was not given a positive or a negative meaning to these values identified, but they have to be seen as diametrically opposed concepts that lead to clear and different choices.

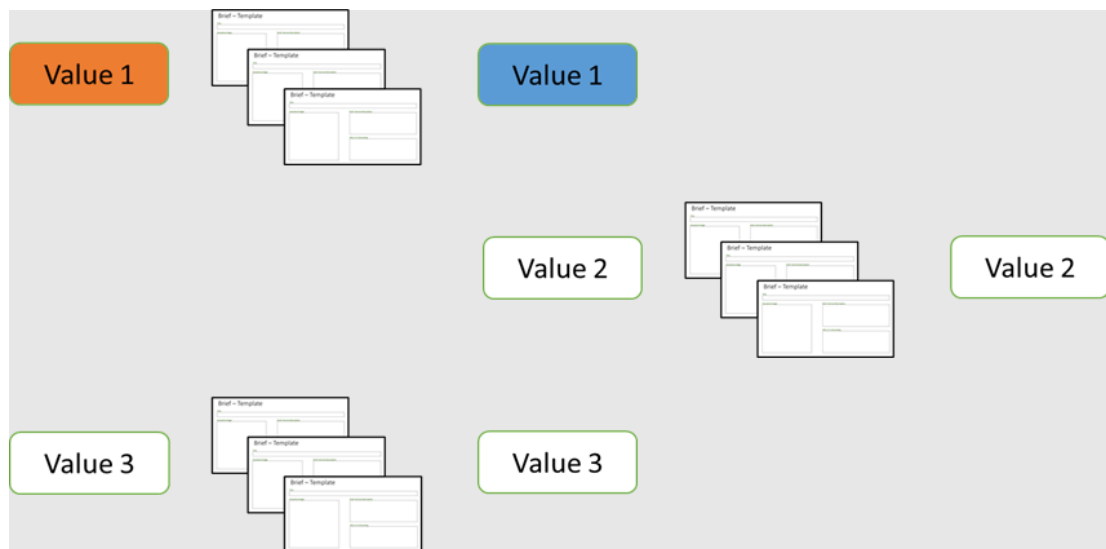


Figure 13 – Snapshot from the Mural - the identification of different value pairs based on ideas and solutions provided

Each idea, after the presentation, was either the starting point for the set of a new value pair, or it was classified based on value pairs already identified. In doing so, it was noted how different solutions, with different characteristics of implementations, fall

within the same value pair, and that some ideas were representatives of more than one value pairs.

This step allowed the identification of **five pair values** that were discussed and deeply analysed. In the following are presented the five pairs with all the considerations made in the plenary discussion.

1. The first value pair is made up by a first value that indicates a concept of agricultural enterprise that focuses on reaching a high economic profitability to have extra margins to dedicate to ethical practises. Instead, the second value, that indicates the preferred direction, represents an idea of farm that can benefit from an **ethical network of individuals**, through which fostering the sharing of ethical practises in the agricultural sectors and that can base its profitability on regular and properly paid workforce.



2. The second value pair is composed by a first value that indicates agricultural models that offer products that are socially, economically, and environmentally sustainable. There is a shift towards the second value that promotes the awareness about agricultural issues in the whole sector and considering all the actors. This second value points to the **valorisation of laborers** and the pursuit of their own autonomy.



3. Here, the first value focuses on the person's legal status as a worker. The second value, instead, points to a **process of valorisation of labourers' skills**

and availability. The objective is to develop models that can facilitate the matching between employer and labourers in the agri-sector.



4. This pair of values indicates the shift from a service that focuses on certifying the agricultural product in the eyes of the consumers, to a model that focuses on **the sustainability of the entire agri-food chain**, so that it can be certified.



5. This pair of values indicates the transition from finding housing for migrant laborers, only for housing needs, to a service that aims **to redevelop some places and buildings**, so that, from the collaboration between owners and laborers, **new business activities**, such as restaurant and hospitality services, can arise.



4.6.2 Convergent Phase

After the identification of the five pairs of values, the convergent phase of the workshop started.

Through the comparison and discussion within participants in the plenary session, two pairs of values, considered as most relevant, were selected. In particular, participants chose as concept directional values **the first and the second value pairs**.

Then, it was created the following Cartesian plane that defined four different scenarios indicating different ways to find solutions to the problem.

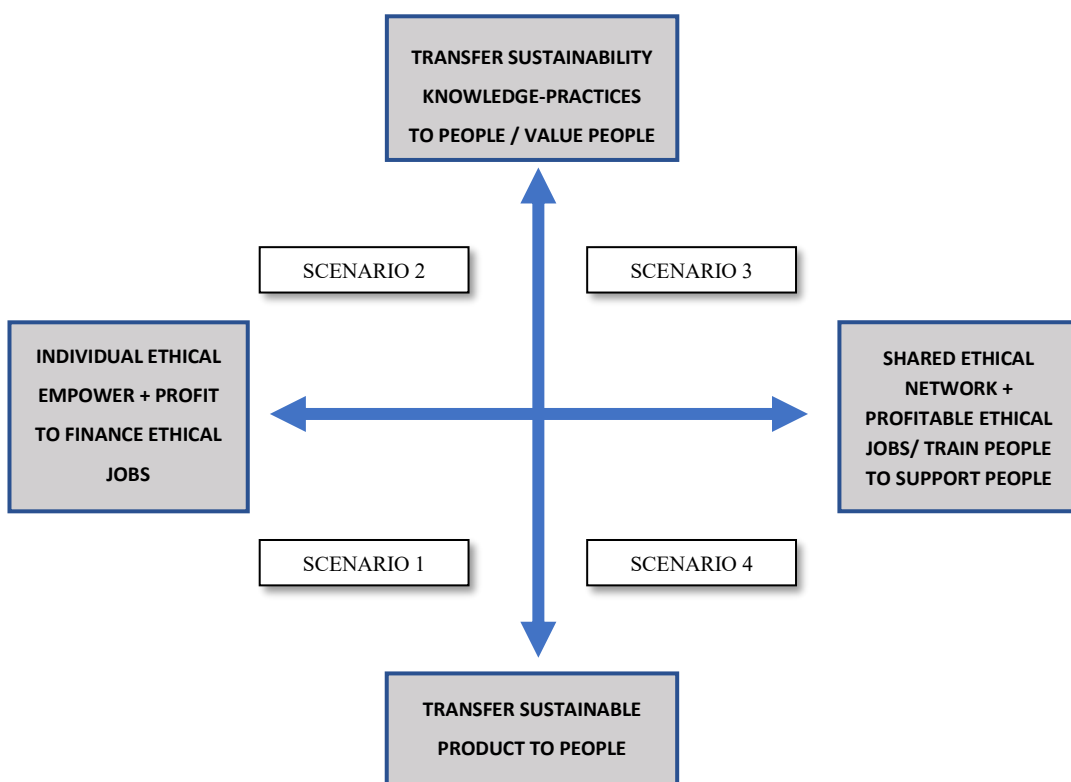


Figure 14 - Identification of four scenarios from the selection of two pairs of values

Scenario 1: can be considered as the “as-is” scenario, that is representing the agricultural sector today, its objectives and its working methods. In fact, the focus is on the production of sustainable products that meet the consumers’ needs (*transfer sustainable product to people*), and on the creation of individual profit, which surplus will be dedicated to ethical management of workforce (*individual ethical empower + profit to finance ethical jobs*).

Scenario 2: contains all the solutions that allow farms to use their surplus profit for the implementation of ethical practices (*individual ethical empower + profit to finance ethical jobs*), but, at the same time, promoting and transferring sustainable knowledge and good practices throughout the whole supply chain, involving companies, workers and consumers (*transfer sustainability knowledge – practice to people / value people*).

Scenario 3: solutions that fall within this scenario represent services based on an ethical network that can simultaneously promote social and economic sustainability through the valorisation of laborers. This can be done through training, social and working reintegration (*transfer sustainability knowledge – practices to people / value people*) and through collaborative systems between farmers, large distribution companies and consumers (*shared ethical networks + profitable ethical jobs / train people to support people*). Within this scenario, all the actors are involved in the process, and everyone contributes to creating value from a community perspective and not as single entity. Examples may be the network contracts between companies, services to train people who later transfer knowledge to agricultural workers, or services that allow consumers to acquire awareness about how the product was produced and which practices were adopted in the supply chain.

Scenario 4: this scenario includes solutions that see farms acting within an ethical network that valorise workers and that can activate virtuous mechanisms of learning and sharing of sustainable knowledges (*shared ethical network + profitable ethical jobs / train people to support people*). In this scenario, the focus is on providing to consumers a sustainable and organic final product without stressing all the other steps of the agri-food chain (*transfer sustainable product to people*).

Once all the Scenarios have been outlined and discussed, participants have been divided into five groups.

The aim of the work in groups was the selection of a single preferred Scenario based on some criteria provided by the core team:

- *degree of innovation*: reasoning on the elements of innovation that could be brought by a service relative to a specific scenario,
- *relevance* regarding the solution of the problem of labour exploitation in the agricultural sector,
- *economic and technological feasibility*,
- *scalability*: reasoning on the level of scalability of a possible entrepreneurial model relative to the specific scenario,
- *resilience*: how much the scenario can be reactive to the problem.

So, the “judging” process was directly assigned to participants confirming the empathic and non-competitive features of the event. Each group had available two votes, and at the end of the voting round, Scenario 3 was selected as the most promising.

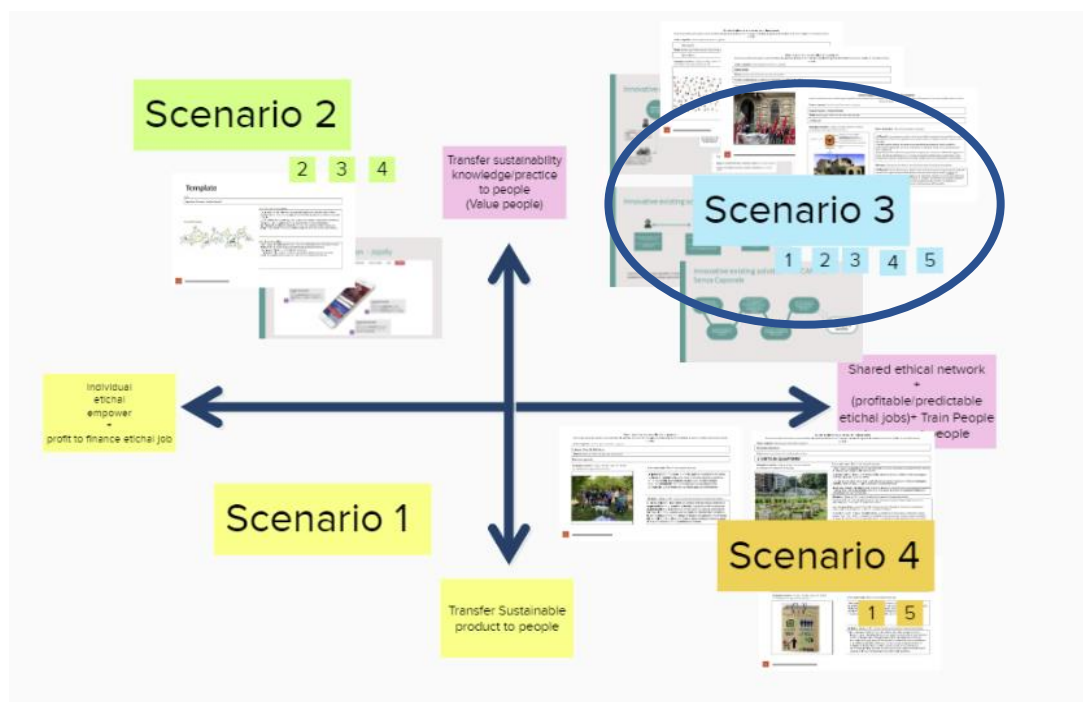


Figure 15 - Snapshot from the Mural of the event: first workshop's voting process

As it is showed in the figure above, the *Scenario 3* was preferred by all five groups that supported their choices with comments and considerations that were useful to furtherly redefine the main relating concepts. From the discussion it emerged that an ethical network between different farms is a possible key factor that can combine social and economic sustainability. Within this scenario, it will be possible to create a shared system that can involve all the actors of the supply chain, enhancing replicability and good practices. Additionally, the solutions that can arise from this scenario have to take into account, on the one hand, the importance of bringing together farmers and workers in a simplified bureaucratic process for compliant contracts, and, on the other hand, the need to raise awareness in consumers, in order to have more ethical choices.

This Scenario has been used as a starting point for the second workshop of the Hackathon as will be discussed in the following section.

4.7 Workshop Day 2 – Selection of a service

The second workshop of the hackathon “Ethic Jobs in Agriculture” was held online on Saturday, February 19th, 2022, using the Zoom platform. As can also be seen in the figure in the section about the chosen methodology and timeline (Figure 7), the objective of this workshop was to propose an innovative, scalable, physical or digital service that could respond to the problem of labour exploitation in agriculture, by **focusing on the figure of the agricultural laborers.**

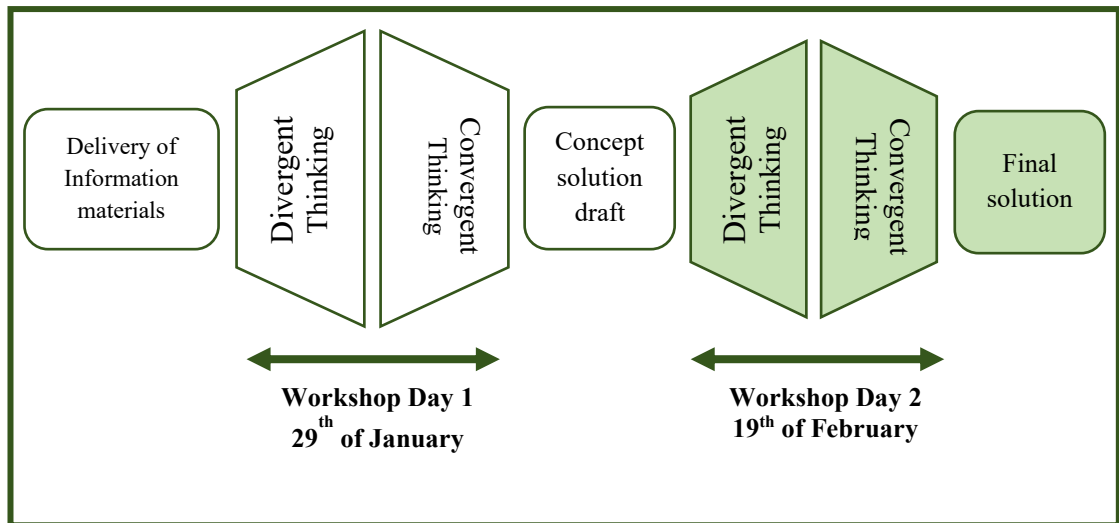


Figure 16 - EJA timeline: Workshop Day 2

This focus on the figure of the agricultural worker was communicated to participants in the days before the second workshop’s date. All those who showed their interest in participating have, in fact, received on the 10th of February:

- a report describing all the steps and the result of the first workshop
- a brief with a description of the selected Scenario, pointing out the following activities, with a focus on the agricultural worker and the related criticalities,
- a template to be filled with a service proposal aligned with the selected Scenario and in response to one or more critical issues related to laborers.

This corresponded to the second “Call to action” through which each participants had the possibility to initiate his own ideation process, arriving more prepared to this second workshop and with a well-stated focus.

Even this workshop consisted in a divergent and a convergent phase. In the first phase the groups exchanged reflections and ideas, and then the following discussion in groups had the objective to create a single service. The workshop, with the respect to the first one, had a more operative feature and the activities of comparison and choices within teams took most of the time. In particular, the main phases that have characterized the entire second workshop are as follows:

- description of the objectives and division into groups
- group work and plenary presentation of the ideated service
- voting of the presented services

4.7.1 Description of the objectives and division into groups

During this phase, the core team briefly represented and described to all participants the results from the first workshop. This was made to align the ones who were not present in the first workshop about the “directional values” to work with during this service ideation process. Then, the main criticalities about agricultural laborers were represented, as listed in the delivered brief, and furtherly discussed with participants in the plenary session.

The critical issues were presented as follows:

- the **problem of housing** in shantytowns or ghettos in isolated locations often mediated by “caporali”
- the **problem of transport**, which is one of the key levers of labour exploitation in agriculture as it is often directly controlled by the “caporalato” system
- **lack of a system of integrated protection and assistance** that can be easily accessed by laborers. Services ranging from health, legal assistance and basic necessities to the possibility to directly (or anonymously) notify situations of exploitation
- **lack of a training service** for laborers on human and worker rights, up to a more vertical training on the specific tasks related to the agricultural sector
- **the need for a long-term social and labour integration** with assistance to workers for the bureaucratic part of job placement. Focus on the worker and the bureaucratic process of insertion, fostering its fluidification by bringing workers closer to a regular working system.

Additionally, before dividing participants in teams for the dedicated ideation process, the working team of SIT described the tool that would have been used for the group activities. It was presented a template of a customer journey, through which each group would have to imagine the various phases and the different touchpoints of the designed service, trying to put themselves in the position of the person who would use it, as a way to better assess their needs.

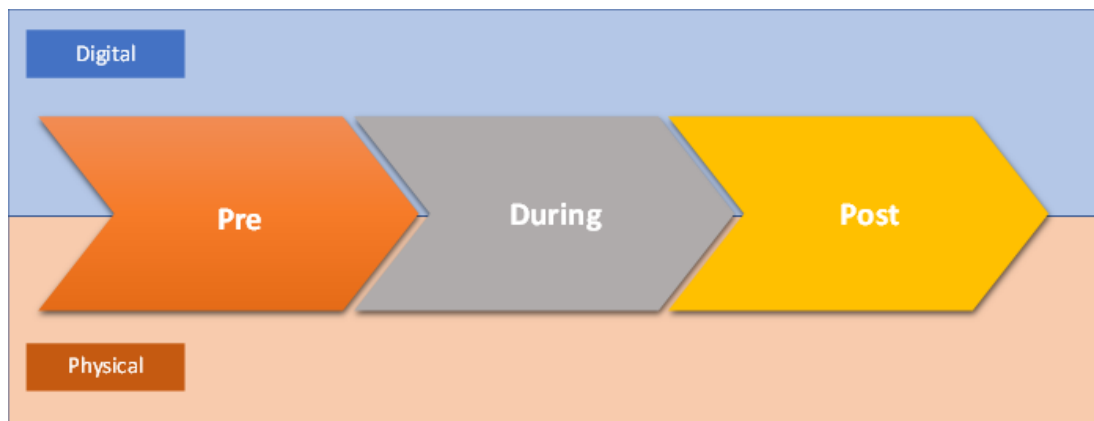


Figure 17 - Template of the Customer Journey tool for the activities of service ideation

Therefore, each group was asked to design a service by trying to imagine it in three different phases:

- PRE-PHASE, to explain how to reach the users, in this case represented by agricultural laborers, and then describe the service elements that can increase awareness and consideration towards the service itself,
- DURING-PHASE to describe the use experience of the service,
- POST-PHASE trying to describe what happen after the use of the service to keep users engaged or make them a means to promote the service itself.

In addition, as showed in the template, the ideated service could have been totally digital (an app, a website or based on a particular technology), totally physical (physical contact, events, meeting in the camps or in farms), or mixed features, thus having both moments of physical and digital contacts.

For the setting of the different teams, the core team made a methodological choice to concentrate the work of each group on a pre-determined number of issues from the list of criticalities, to narrow the working scope. In this way, on the basis of the number of participants, three groups were identified. To the **Team 1** was assigned “transport and housing”, to the **Team 2** “lack of integrated protection, assistance and training services” and to **Team 3** “need for a long-term social and labour integration”.

4.7.2 Group work and plenary presentation of the ideated service

Once all the themes and the specific tool to be used were clarified, each team had about 75 minutes to work on the ideation of the service related to the assigned issue. This phase was also supported by the core team members, who participated in the discussion in the virtual private rooms to guide the methodological approach in designing the service. Each group started its own ideation phase, and a group representative was selected to describe the idea in the plenary session. Following the three ideated services are outlined.

Team 1 – “Transport and Housing”

The team 1, in an initial brainstorming phase, reasoned on the strong interconnection between the two critical issues of reference, since the laborers’ housings, often in isolated and unsafe places, can trigger the problem of transport. In fact, given the lack of public services in the areas where laborers live, the resulting transportation to the workplaces is directly controlled by the “caporalato” system. It was then discussed whether it is necessary to intermeditate with the public sector for the requalification of buildings, so that unused spaces and buildings can be used as accommodations for laborers during the peak demand for agricultural workforce. In this line, the intervention of the public sector could facilitate a mapping of the available structures and could thus favour an initial action to solve the housing issues for laborers.

Afterwards, a service idea called “cAPPhouseE” was presented. This proposal was sent by two participants already in the days preceding the beginning of the second workshop, on the basis of the informative materials related to the results of the first workshop and in relation to the focus on laborers’ criticalities. The idea includes the creation of a platform that can facilitate the connection of different entities: lands and

properties owners, buildings workers, third sector, public administration and private individuals joined by the desire to propose a valuable solution against the labour exploitation in agriculture. The idea, directly described by the two authors, is to create a cAPPhouse, that is a redeveloped building structure, which can firstly provide a secure dwelling to agricultural workers and then be the place to train them on different tasks, from agricultural work to catering activities, maintenance, or front-office. This would allow the laborers to find a safe place, and the owners to start an entrepreneurial activity by providing restaurant and/or accommodation services, similar to the Airbnb model. This digital platform acts as a connector between various actors and facilitates the process to transform a property: the owner communicates directly through the app the willingness to sign up and requalify his structure. Then after a free assessment, it is offered, to the owner of the structure, a support service from the renovation phase until the final validation of the requirements needed for the creation of a cAPPhouseE.

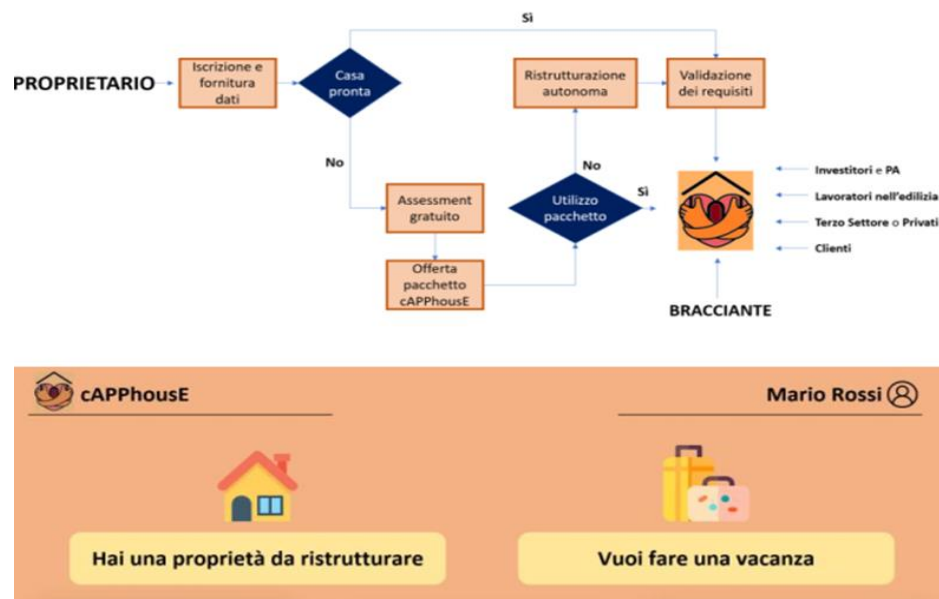


Figure 18 - Snapshot from the presentation of the idea "cAPPhouse"

Further, at the conclusion of any renovation works, the platform allows future guests to use the “Booking a Vacation” feature, to live a different holiday experience that can make its part against the labour exploitation problem.

On the basis of this idea, already well described in terms of use experience, the group began a phase of discussion to analyse the main critical elements, dwelling on how

laborers could be more directly involved in the service. The first critical element was identified in scalability, linked to the need for large sums of money for the renovation of buildings. This issue led to the idea of being able to rely also on existing and already functioning services, such as the wide circuit of Airbnb or similar, that in a way could be integrated within the offer. Consequently, both structures already used for hospitality and catering, and unused structures after the necessary renovation work, could be used as cAPPhouseE. This would allow, in a shorter period of time, laborers to move away from the camps into a more inclusive environment, staying in facilities located in the city or in small villages.

The first stage in the service development will be used to raise awareness among farms, organizations, associations and property owners to spread the service idea and encourage a targeted and joint action for the provision of facilities. Subsequently, the laborers will be directly informed of the existence of this service, relying especially on associations already in contact with groups of agricultural laborers and migrants.

The service will have to ensure, through the application, a direct connection between farms and property owners, with the option of relying on existing housing service networks. In this way, each farm will correspond to a number of houses or available rooms for its employees, at a relatively short distance from the workplace, so as not to determine a subsequent transportation problem. Once the farm worker has been regularly hired for a period of work within the farm, it will be the farm that will directly implement and facilitate the process of finding an affiliated accommodation for workers. To this end, it was considered important to carry out a mapping operation of farms with their relative need of seasonal workforce - and the number of available housing facilities. The service will also encourage the organization of socialization events and courses for the training of laborers of the companies belonging to the initiative, promoting, in this way, moments of leisure and inclusion for agricultural workers.

Team 2 – “Lack of integrated protection, assistance and training services”

The discussion of Team 2 was initially focused on the analysis of the linguistic barrier. This was considered one of the obstacles to getting to know the available services in the area – from basic necessities to language, legal, contractual or more vertical training courses on agriculture – together with the problem of the distance to where these services are offered. Therefore, it was found important to focus on the identification of strategic points that could encourage direct contact with farm workers, such as stations, schools, squares, employment centres or agricultural fields, in order to inform them directly about existing services.

The service idea, born as a result of this first discussion, is represented by a multilingual digital totem located in physical points, considered strategic because highly frequented by agricultural workers (or potential ones), who live in conditions of marginality and vulnerability. The laborers, through direct interaction with the digital totem, learn about all the training courses and services offered in the nearby, displaying, directly on a map, the place, the type of training, the duration, the related job opportunities and the list of virtuous services available to them. In addition, the companies, or more generally the providers of services and training courses, will be able to increase the offer of the initiative by directly entering their services, which will be filtered, selected and then catalogued directly on the user interface displayed on the totem.

Furthermore, a marketing strategy has been thought to guarantee an initial phase of awareness creation towards the effectiveness of the provided service. This strategy consists in inserting, on the digital totem, mini clips of true stories of laborers who, through training, have been able to acquire autonomy and professional experience. Once a sufficient diffusion has been reached, the next development thought for this service is the realization of a website or app that can optimize the interaction from remotely. This will promote a faster access to all the information and services offered on the totems distributed in the physical points.

From the plenary discussion, some interesting elements emerged, such as the intervention of the public administration and municipalities for the installation of totems in pre-established strategic places. There was also a discussion about the possibility of replacing digital totems directly with posters or through the use of trained and multilingual people, who could help spread and inform about services in the area.

This could encourage more direct and trusted communication and decrease the installation costs that come with digital totems.

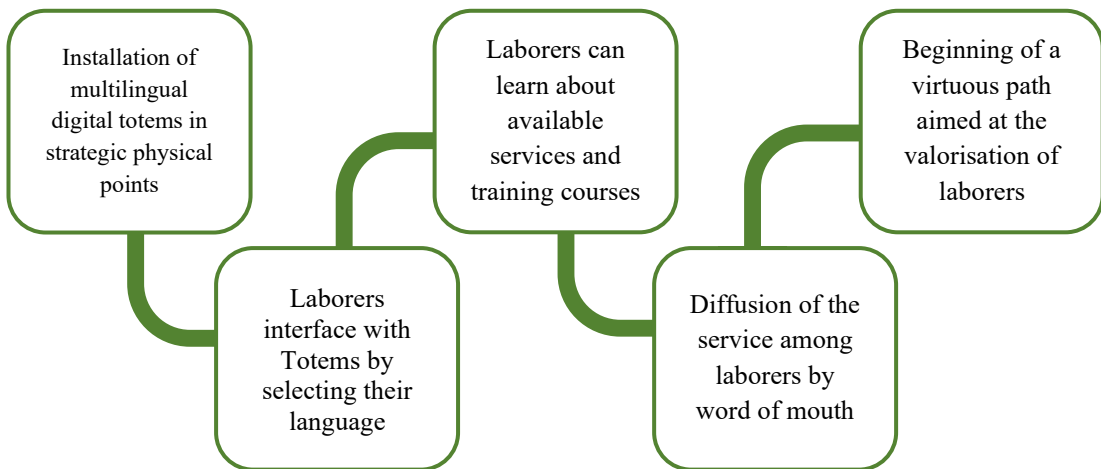


Figure 19 - Representative scheme of the ideated service about the issue “Lack of integrated protection, assistance and training services”

Team 3 – “Need for a long-term social and labour integration”

The team started with the analysis of the current situation regarding the presence of services whose aim is to foster the matching between supply and demand of labour in the agricultural sector. There was the identification of both solutions that provide a direct physical contact between workers and employers, and digital solutions that encourage and facilitate the match through a digital platform (app or website).

The group reasoned about designing a service that could combine and use both types of solutions, with both digital and physical contact elements.

The ideated service is based on several phases. There is a first phase of direct advertising to laborers in physical locations such as camps, asylum centres or shantytowns, in order to inform them about the existence of digital platforms for their job placement. This first phase also includes the release, among laborers, of instructions and advice on how to effectively use the platforms. The second phase involves a direct contact between the laborers and the farms that have uploaded their job positions on the platform. The meeting should take place through physical events, thanks to which laborers can get to know the companies where they could work and can establish trust and lasting relationships.

At this stage, loyalty can also be generated through the presentation, by farms, of previous positive experiences of some laborers who have used the service. In addition, it has been conceived a system of notifications for laborers registered on the platform to increase the effectiveness of the service, providing operational indications on labour rights, safety, administrative deadlines and the documentation to be filled for the final establishment of the employment relationship.

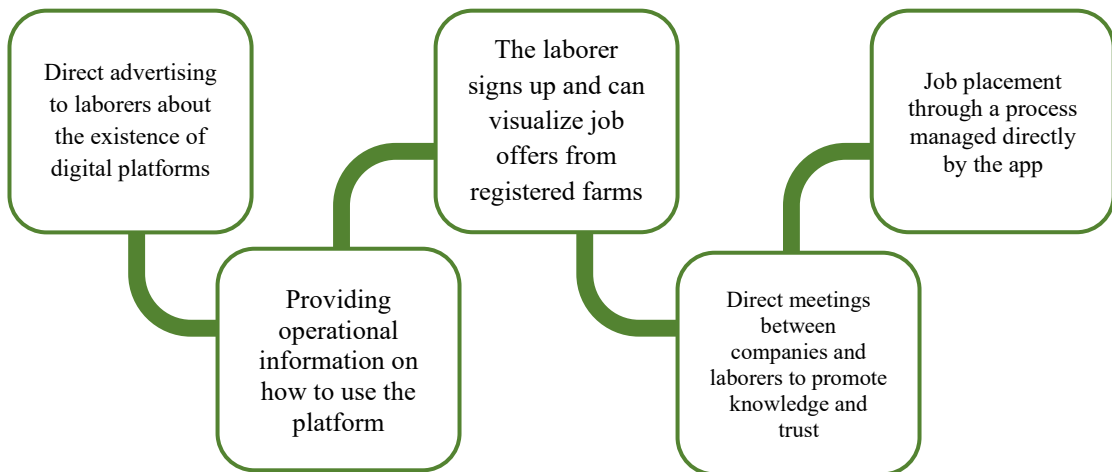


Figure 20 - Representative scheme of the ideated service about the issue "Need for a long-term social and labour integration"

4.7.3 Voting session

The voting stage, as with the first workshop, was totally committed to participants without the need of specific jury members. Each participant had a single vote to assign to one of the services described, considered as most valuable according to the following criteria:

- the implication of physical and digital interaction
- the easiness in the implementation
- the scalability
- the level of innovation

In addition, before starting with the voting tool on the Zoom platform, it was communicated that a symbolic prize would have been provided to the members of the winning team. This was especially done to be aligned with the hackathon

methodology, but the “symbolic” nature of this award was stressed to confirm how all services and ideas proposed represent the real output of the workshop, and all of them could represent useful elements for future implementation.

It was given a moment of self-reflection in which participants were able to use the dedicated Mural platform of the event. Here, the core team displayed the services and all the considerations and reflections made during their presentation in the plenary session.

The voting stage awarded the *Team 1* with their proposed service “cAPPhouseE”, which was ideated in response to the laborers’ criticality “Transport and Housing”.

4.8 Results and next steps

The result of the entire event can be considered to be overall in line with the targets. During both workshops, participants were very active and well involved into the project, generating ideas and considerations, valuable for the upcoming phases.

From the beginning, the project has been considered as a very first step in a long innovation process. In fact, the main goal was not concentrated in the prototyping phase, but it was more focused on the concepts’ development and progress. It was a good occasion to foster a sharing of experiences and ideas between different stakeholders, in order to produce the bases to create new services or new solutions for existing companies already active in tackling labour exploitation in agriculture.

From participants, we had many positive considerations related to the informative documents, which were considered, together with the continuous methodological support during the workshops, useful elements for the proper development of the ideation process.

During the second workshop, the ideation process of the service was focused on the agricultural laborers, trying to put the attention to the difficulties of this weaker part of the system. In this line, we need to consider that we had to work respecting the workshop time limit, and it was better to narrow the ideation scope and maintain concentration on concise and defined goals.

The final result, voted and chosen directly by the participants, responds to the vertical problem of the transportation and housing of agricultural laborers. This is surely one of the principal problems exploited by the “caporalato” system, but it has to be seen in

a bigger scenario with direct actions needed from several parts: companies, consumers, big distribution companies, and local and national institutional entities. It is very difficult to achieve and promote efficient solutions against the problems related to the “caporalato” system in agriculture without a good cooperation and support from all these actors in the supply chain.

In order to better involve and engage participants, who is interested the most to the next phases, the SIT group will send to all participants, an informative dossier to describe all the phases, the ideas and the results that came out from the entire event. This is a good point to succeed in the next phase, where it is necessary a very deep analysis for a real activation and implementation into the market.

The newsletter of the event will still be open to continue the sharing of considerations and ideas between participants, and the SIT group is already working on setting the next activities related to these upcoming results and the effective implementation, involving the main partners.

The success of the event has been also marked by the willingness of participants to maintain their engagement and give their support into the real development of the process. At the end of the workshop, in fact, they expressed their positive considerations and conclusions regarding the event, and they all shared personal emails and contacts to “save” the group even and the end of the project.

This positive result has confirmed how the hackathon methodology, even if brief, can be an opportunity to create new links and relations over the duration of the event itself.

5 Conclusions

The purpose of this thesis project was to study and validate the hackathon methodology when used in the social context and analyse the main specifications.

By the study conducted, it is clear how in the social innovation framework it is necessary to support and develop new “bottom-up” innovation processes, involving several stakeholders as well as the social community.

In this landscape, the Social Hackathon methodology can foster the proper level of co-creation assuring the possibility to engage in the “same room” different stakeholders and the community for a brief timeframe.

Analysing the emerging principles related to design for social innovations and the main characteristics of social hackathons, it is confirmed that these kinds of events, when applied to find a solution to massive social problems, need some organizational and managerial strategies. One of the most distinguished of these strategies, is to insert, within team participants of the ideation process, expert people related to the specific sector covered, with a deep knowledge and practical orientation in the problems they are called to fix and find solutions for. Further, it is crucial to activate a dynamic participation of all team members in the hackathon, avoiding any kind of hierarchical level within them, fostering an empathic and collaborative environment.

Considering the time limit imposed by the hackathon methodology, social hackathons can be considered an efficient method especially as a first step in the whole innovation process, generating an open and flexible sharing of ideas that can set a first solution basis for follow up activities.

Other challenges linked to the implementation of the hackathon methodology in social contexts are again related to the time factor. If, on the one hand, it is possible to organize an efficient hackathon to propose effective solutions, on the other hand it is necessary that these obtained results can be kept alive and actually be implemented in the market.

The case study of this thesis project – the EJA social hackathon, promoted and organized by SIT, provided some interesting elements especially regarding the specific methodology and the resulting timeline, which was different from the most commonly used formats. In particular, the used methodology confirmed its effectiveness in ensuring the right engagement of participants since the pre-activation phase and a best

use of the time during the virtual workshops. In addition, the importance of subject experts, already active in tackling “caporalato” in the agricultural sector, was highlighted. During the two workshops, in fact, the experience and the considerations from the main partner “Humus Job” have provided an important basis for the proper advancement of the concept design process.

The main limitation in the organization of EJA social hackathon was mainly related to the virtual setting of the event. An in-person experience would have achieved even a more powerful co-creation process fostered by proximity between participants and direct sharing of ideas, comments and design sketches.

A participant, during the EJA event, stated “*the business market wants fast things, while the social is completely different and does not ride at the same speed*”. In this direction, there is the need to accelerate social innovation pace, thinking about services that can assure both economic and social sustainability, finding ways to encourage their diffusion.

Concerning future studies, searches on the best methodologies to foster continuity between the end of hackathons and future developments are needed. There is a clear necessity to consider how to involve additional actors to stimulate a stable and fertile environment for upcoming developments, involving the support from innovation hubs, social entrepreneurs, public and private entities and the direct involvement of institutional bodies. Collaboration with local and national institutional actors can be fundamental to create administrative and legal conditions that can support the real development of the hackathons’ results.

Another future development could involve a study on how to actively engage the community and other stakeholders not related to the innovation sector. Social hackathons usually must foster an empathic environment where the competitive nature and the presence of monetary prize can be neglected. It is therefore necessary to understand which new incentive tools can determine the engagement of the necessary number of stakeholders to respond to social issues that require a deep analysis from multiple perspectives.

In conclusion, the organization and the participation in the EJA event have been an opportunity to increase interest about social innovations field. The project was intended to start a path of ideation to find a solution to the problem of labour exploitation and “caporalato” in the agricultural sector, which is a huge problem in

Italy and elsewhere. It was very interesting to see how a group of people, without ever having worked together, were able, in a short time, to make an effort and contribute to such a "complicated" cause. The results from which SIT can start for the next steps are encouraging and there is the possibility to direct the efforts towards the implementation of a service, new or integrated, to do the best against a problem that afflicts thousands of vulnerable people who have no way to voice their needs and to "fight" their situation.

References

- Briscoe, G., & Mulligan, C. (2014). The hackathon phenomenon.
- Britton, G. M. (2017). Co-design and social innovation: Connections, tensions and opportunities. Routledge.
- Bugarszki, Zsolt; Lepik, Katri-Liis; Kangro, Kadri; Medar, Marju; Amor, Kristina; Medar, Marko; Saia, Koidu. (2021). Guideline for Social Hackathon Events. Tallinn University: School of Governance, Law and Society.
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.
- Chesbrough, H., Vanhaverbeke, W., & West, J. (Eds.). (2006). *Open innovation: Researching a new paradigm*. Oxford University Press on Demand.
- Chiaroni, D., Chiesa, V., & Frattini, F. (2011). The Open Innovation Journey: How firms dynamically implement the emerging innovation management paradigm. *Technovation*, 31(1), 34-43.
- Chick, A. (2012). Design for social innovation: Emerging principles and approaches. *Iridescent*, 2(1), 78-90.
- Chowdhury, J. (2012). Hacking health: bottom-up innovation for healthcare. *Technology Innovation Management Review*, 2(7).
- Cortignani, R., Carulli, G., & Dono, G. (2020). COVID-19 and labour in agriculture: Economic and productive impacts in an agricultural area of the Mediterranean. *Italian Journal of Agronomy*, 15(2), 172-181.
- Dahlander, L., & Gann, D. M. (2010). How open is innovation?. *Research policy*, 39(6), 699-709.
- Dodgson, M., Gann, D., & Salter, A. (2006). The role of technology in the shift towards open innovation: the case of Procter & Gamble. *R&d Management*, 36(3), 333-346.
- Ermoshina, K. (2018). Civic hacking: redefining hacking and civic participation. *Tecnoscienza. Italian Journal of Science & Technology Studies*, 9(1), 79-101.
- Flores, M., Golob, M., Maklin, D., Herrera, M., Tucci, C., Al-Ashaab, A., ... & Pineda, K. F. (2018, August). How can hackathons accelerate corporate innovation?. In *IFIP International Conference on Advances in Production Management Systems* (pp. 167-175). Springer, Cham.
- Flus, M., & Hurst, A. (2021). Design at hackathons: new opportunities for design research. *Design Science*, 7.
- Frey, F. J., & Luks, M. (2016, July). The innovation-driven hackathon: one means for accelerating innovation. In *Proceedings of the 21st European Conference on Pattern Languages of Programs* (pp. 1-11).
- Gassman, O., & Enkel, E. (2004). Towards a Theory of Open Innovation: Three Core Process Archetypes. 2-18. Retrieved on July, 12, 2016.
- Grimm, R., Fox, C., Baines, S., & Albertson, K. (2013). Social innovation, an answer to contemporary societal challenges? Locating the concept in theory and practice. *Innovation: The European Journal of Social Science Research*, 26(4), 436-455.
- Hossain, M. (2013). Open innovation: so far and a way forward. *World Journal of Science, Technology and Sustainable Development*.

- Huizingh, E. K. (2011). Open innovation: State of the art and future perspectives. *Technovation*, 31(1), 2-9.
- Komssi, M., Pichlis, D., Raatikainen, M., Kindström, K., & Järvinen, J. (2015). What are hackathons for?. *IEEE Software*, 32(5), 60-67.
- Mulgan, G. (2006). The process of social innovation. *innovations*, 1(2), 145-162.
- Murray, R., Caulier-Grice, J., & Mulgan, G. (2010). *The open book of social innovation* (Vol. 24). London: Nesta.
- Osburg, T., & Schmidpeter, R. (2013). Social innovation. *Solutions for a sustainable future*.
- Phillips, J. A., Deiglmeier, K., & Miller, D. T. (2008). Rediscovering social innovation. *Stanford Social Innovation Review*, 6(4), 34-43.
- Pol, E., & Ville, S. (2009). Social innovation: Buzz word or enduring term?. *The Journal of socio-economics*, 38(6), 878-885.
- Rosell, B., Kumar, S., & Shepherd, J. (2014, May). Unleashing innovation through internal hackathons. In *2014 IEEE Innovations in Technology Conference* (pp. 1-8). IEEE.
- Rys, M. (2021). Invention Development. The Hackathon Method. *Knowledge Management Research & Practice*, 1-13.
- Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design*, 4(1), 5-18.
- Soltani, P. M., Pessi, K., Ahlin, K., & Wernerer, I. (2014, September). Hackathon: A method for digital innovative success: A comparative descriptive study. In *Proceedings of the 8th European Conference on IS Management and Evaluation* (pp. 367-373).
- Tagliacozzo, S., Pisacane, L., & Kilkey, M. (2021). The interplay between structural and systemic vulnerability during the COVID-19 pandemic: Migrant agricultural workers in informal settlements in Southern Italy. *Journal of Ethnic and Migration Studies*, 47(9), 1903-1921.
- The Young Foundation (2012) Social Innovation Overview: A deliverable of the project: “The theoretical, empirical and policy foundations for building social innovation in Europe” (TEPSIE), European Commission – 7th Framework Programme, Brussels: European Commission, DG Research.
- Toros, K., Kangro, K., Lepik, K. L., Bugarszki, Z., Sindi, I., Saia, K., & Medar, M. (2020). Co-creation of social services on the example of social hackathon: The case of Estonia. *International Social Work*, 0020872820904130.
- Trainer, E. H., Kalyanasundaram, A., Chaihirunkarn, C., & Herbsleb, J. D. (2016, February). How to hackathon: Socio-technical tradeoffs in brief, intensive collocation. In *proceedings of the 19th ACM conference on computer-supported cooperative work & social computing* (pp. 1118-1130).
- Westley, F., Olsson, P., Folke, C., Homer-Dixon, T., Vredenburg, H., Loorbach, D., ... & Van der Leeuw, S. (2011). Tipping toward sustainability: emerging pathways of transformation. *Ambio*, 40(7), 762-780.
- Westley, R., Gobey, S., & Robinson, K. (2012). *Change Lab/Design Lab for Social Innovation* (Draft). Waterloo, ON: Waterloo Institute of Social Innovation and Resilience.

- Yun, J. J., Park, K., Im, C., Shin, C., & Zhao, X. (2017). Dynamics of social enterprises—Shift from social innovation to open innovation. *Science, Technology and Society*, 22(3), 425-439.
- Ziegler, R. (2017). Social innovation as a collaborative concept. *Innovation: The European Journal of Social Science Research*, 30(4), 388-405.