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The analysis of innovative team
dynamics:
the case of H-acks at H-Farm

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Introduction

Nowadays, an increasing number of companies decide to no longer rely exclusively on traditional firm-centric innovation and to look beyond their boundaries for new ideas. This trend, called "open innovation", started in the 1990s and is based on the involvement of all stakeholders in the supply chain, both inside and outside the organization, in the innovation processes. To improve the efficiency and effectiveness of their innovation processes, companies increasingly cooperate with suppliers and competitors, or consult directly end-consumers to have ideas about new technologies and products.

Open innovation includes not only the "outside in" aspect, where external ideas and technologies are brought into the organization's own innovation process, although this is the most widespread case. The trend also comprises an "inside out" aspect, so ideas and technologies created within the company, but not suitable for that context, are allowed to go outside to be incorporated into other businesses.

The phenomenon of open innovation over time has taken on many different shades, depending on the key features of its different manifestations and on the degree of direct involvement of a company in the development of new products: the range of manifestations goes from crowdsourcing and open source, to communities of innovation, custom-fabricated, and Do It Yourself (DIY).

Among all different forms of open innovation, hackathons are the most eccentric ones. A hackathon is a highly engaging, continuous event, lasting between a day and a week, in which experts from different fields produce in small groups working software or hardware prototypes. Starting in the late 2000s, hackathons have become significantly widespread. These events developed from being an impromptu pizza party to becoming a professionally organized corporate event to find solutions, mainly digital, to problems of real companies.

Today more than ever it is necessary for the digital world and business industries to dialogue with each other, especially in the Italian context.

For this reason, H-Farm, a venture capitalist and start-up incubator in northern Italy, in the fall of 2013, designed the H-ack industry format, a series of events that represents a fast, but, at the same time, practical way to make a first and important step

in this direction. H-acks are 24-hour non-stop marathons during which developers, makers, designers and marketing specialists come together as a team and work together on the themes proposed by participating companies to create new solutions and products through technology and digital solutions.

These events are characterized by the development of unusual relationships between both team members, and groups and representatives of participating companies or mentors of H-Farm organization. Teams are composed of persons that did not know each other before and join only for the duration of the event, which obviously affects the relationship between teammates. During the 24 hours of the event, working groups are continually accompanied by mentors of H-Farm and representatives of companies who help them to better develop their project and with which participants interact informally.

Therefore, the aim of this dissertation is to analyze the dynamics within groups of participants in these events and to understand what are the most common behaviors and patterns behind them. In carrying out this type of analysis it was decided to focus on four elements, believed to be the most descriptive of the phenomenon: the formation of the team and its work; the birth of the idea; the leadership; and the overall experience of the event.

These aspects were observed through an ethnographic study of groups of participants in H-acks. Each observer joined a team for the whole duration of an H-ack recording the behavior of team members through field notes and photographs. Observers then concluded their work interviewing one or more team members. The material collected was studied through content analysis to extrapolate what were the most recurring issues and behaviors in each of the four identified themes of the research.

In the first chapter of the dissertation, the context of open innovation is introduced and hackathons, in particular, are described. Subsequently, I present in details the H-ack format, describing past events and drawing a general profile of participants in all H-acks held to date.

The second chapter is devoted to outlining the literature review on the four issues identified as more descriptive of the behavior of participants during H-acks (team

formation and team working; brainstorming and idea generation; leadership; event experience) and to describe the research methods used to collect data and analyze them. A general framework of the methods of ethnographic study and content analysis is provided, and it is also explained specifically how the methods were used for research purposes.

Finally, in the last chapter, I describe the results obtained from the research describing them in detail through the use of quotations from observers' field notes and recorded interviews to participants. In the last paragraph, outlines of long-term effects of H-acks on relations between participants, on the development of innovative projects, and on the job prospects of participants are supplied.

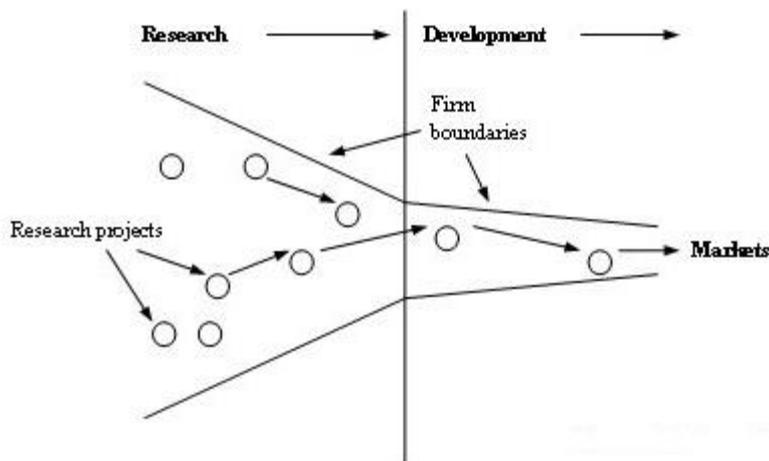
Chapter 1:

Hackathons and H-acks, as forms of open innovation: description and genesis of the events.

1.1 Distributed and open innovation

1.1.1 Closed innovation

In the past, the generation of ideas in every company, from new business development processes and new product creation, to marketing, took place exclusively within the firm boundaries (Picture 1.1). In particular, internal research and development (R&D) was considered an extremely valuable strategic asset, being sometimes also a formidable barrier to entry by competitors in many markets. In fact, only large corporations had enough resources to compete investing in R&D in their respective industries and subsequently reap most of the profits as well. Rivals who sought to cope with those powerhouses had to raise considerable amounts of resources to create their own labs, in order to have a chance of succeeding.



Picture1.1 Closed innovation, Source: Chesbrough, "Open Innovation: The New Imperative", 2003

Today, in many industries, the logic that supports an internally oriented, centralized approach to R&D has become obsolete and several factors have led to the erosion of what was defined as "closed innovation". First of all, knowledge has become widespread, crossing the borders of research laboratories of large companies, thanks to the fact that

the mobility and availability of highly educated people has increased over the years. Additionally, there are knowledge flows between companies, being that, when employees change jobs, they take their knowledge with them. Another aspect that has allowed to tackle the problem of scarce financial resources to innovate is the increasing availability of venture capital, which makes it possible for good and promising ideas and technologies to be further developed outside the firm, for instance in the form of entrepreneurial firms, spin-offs or through licensing agreements. Finally, other companies in the supply chain, for instance suppliers, as well as consumers, are now playing an increasingly important role in the innovation process (Chesbrough, Spring 2003; Chesbrough, 2003; Open Innovation.eu website).

Due to the changes described above, the leading industrial enterprises of the past have been encountering remarkably strong competition from many newcomers that, surprisingly, conduct little or no basic research on their own, but instead get new ideas through a different process.

1.1.2 The rise of open innovation

Starting in the 1990s, some companies decided to no longer rely exclusively on traditional firm-centric innovation and to look beyond their boundaries for new sources of innovation, which has really affected many parts of organizations in a pretty systemic way. As a result, companies have started to look for other ways to increase the efficiency and effectiveness of their innovation processes, for instance through active search for new technologies and ideas outside of the firm, but also through cooperation with suppliers and competitors, in order to create customer value.

Illustrious examples of companies that integrated new technologies found outside their boundaries are Cisco Systems and Google. These two companies have implemented open innovation through acquisitions: aware of the importance of looking around to find smart people with disruptive ideas, Cisco and Google acquired most innovative small firms and execute the commercialization and wide diffusion of the innovative product. Cisco's innovation strategy to expand into new markets and technology areas is primarily on acquisitions. This strategy is largely successful not only because of efficient deal making, but also post-acquisition integration which involves several cross-functional teams. The most studied and well-known acquisition of an high-technology

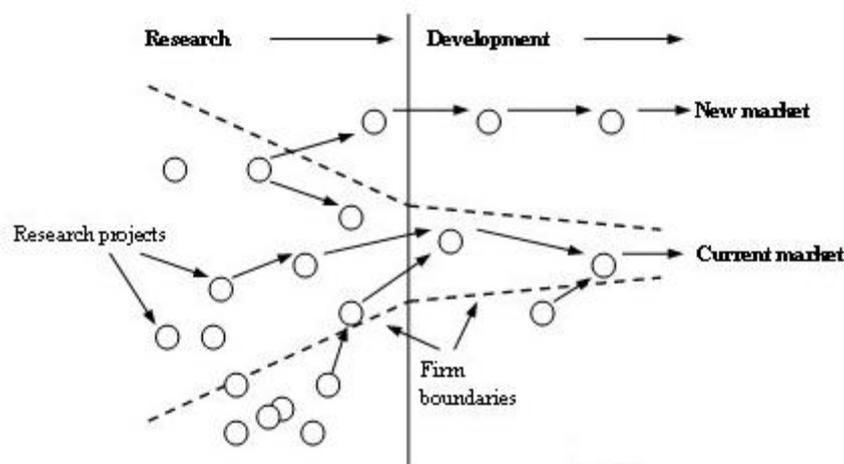
firm by Cisco is the one of Summa Four, a company headquartered in Manchester, New Hampshire, which produces open programmable switches that enabled telecommunications service providers to build and deploy wire line and wireless services (Alexy, 2011; Sivasankaran, 2012). On the other hand, Google has been acquiring, on average, more than one company per week since 2010. Among the new technologies acquired by Google there are the virtual globe map and geographical information program, Google Earth, created by Keyhole Corp. and originally called EarthViewer 3D (Google News, 2004), and the e-mail service provider Gmail, created by the acquisition of several small companies that developed independently different elements.

Another important aspect is the further development or out-licensing of ideas and technologies that do not fit the strategy of the company, such as the chip equipment maker ASML (Advanced Semiconductor Material Lithography), a Philips spin-off, which is now the global leader in the integrated circuit sector. This renovated approach led to ideas from a variety of sources, and proved to be more cost-effective compared to internal R&D. It also led to non-conformal, creative thinking, more relevant products, and consequently became a source of competitive advantage. Some companies have even introduced within their organization specific figures in charge of dealing with the aspects of the new trend, known as “open innovation”, creating job titles like Director, Manager, or Vice-President of Open Innovation (Mahajan, 2012; Chesbrough, Spring 2003; Open Innovation.eu website).

The term “open innovation” was coined by Henry Chesbrough, adjunct professor and faculty director of the Garwood Center for Corporate Innovation and of the Center for Open Innovation at the Haas School of Business at the University of California, in the book titled “Open Innovation: the New Imperative for Creating and Profiting from Technology”, that first dealt with this new phenomenon, published in 2003. Ever since, the open innovation movement has grown and for many companies it has become an integral part of their business model. The book both helped companies, like P&G, Lucent and innovation intermediary InnoCentive, which were already practicing open innovation in some way or the other, and companies that were not already aware of the trend (Mahajan, 2012).

Open innovation has been variously described as a process, a set of interfirm relationships, and a cognitive paradigm over time. As originally explained by Henry Chesbrough: «*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 the firms look to advance their technology. Open innovation combines internal and external ideas into architectures and systems whose requirements are defined by a business model*» (Chesbrough, 2003).

To underline the important novelty that the boundaries between a firm and its environment have become more permeable and innovations can easily transfer inward and outward (Picture 1.2), Chesbrough revised the given definition three years later in another book, in which he states: «*Open innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] 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*» (Chesbrough, 2006).



Picture 1.2 Open innovation, Source: Chesbrough, "Open Innovation: The New Imperative", 2003

As this last definition suggests, there are two facets to open innovation. One is the "outside in" aspect, where external ideas and technologies are brought into the firm's own innovation process. This is the most commonly recognized feature of open innovation. The other, less commonly recognized aspect is the "inside out" part, where un- and under-utilized ideas and technologies in the firm are allowed to go outside to be

incorporated into other businesses' innovation processes. The choice between the two aspects is determined by the business model of the company, an increasingly important element of the open innovation concept: companies should look outside for ideas and technologies that fit with their business model, and, on the other side, letting internal ideas and technologies that do not fit flow out of the corporation (Chesbrough, 2011).

A key consideration to be made, in fact, is that open innovation is the only innovation process that, contemplating more than one actor, allows to share risk and reward and to produce mutual benefits for each organization, creating new products, processes, or ideas that could not otherwise have been achieved alone, or enabling them to be achieved more quickly, cheaply or efficiently.

From these aspects emerges the importance of creating an open platform around innovations so that customers, employees and even competitors can build upon it, because only by that companies can create an ongoing, evolving community of users, doers and creators.

An illustrious example of a company that took in a positive way the challenge of open innovation is Procter and Gamble. P&G, as mentioned above, was one of those companies that, even before the codification of open innovation by Chesbrough, put in practice some elements of this new trend. In fact, in 2001 it launched the "Connect + Develop" (C+D) program, an open innovation platform created to help external innovators and companies learn how to submit ideas to the company. P&G shares R&D, consumer understanding, marketing expertise, and brand equity with its partners, bringing great innovations to market and into the lives of consumers faster, being that this open innovation strategy has enabled the corporation to establish more than 2,000 successful agreements with innovation partners around the world (P&G Connect + Develop website).

The phenomenon of open innovation over time has taken on many different shades, depending on the key features of its different manifestations and on the degree of direct involvement of a company in the development of new products: the range of manifestations that will be described goes from co-creation to consumer Do It Yourself (DIY).

1.1.3 Crowdsourcing

The first and easiest way to answer to what in the high-tech industry is known as Joy's Law "*no matter who you are, most of the smartest people work for someone else*", attributed to Sun Microsystems cofounder Bill Joy, is co-creation or crowdsourcing.

To access the knowledge outside the organizational boundaries the company open information about problems they are trying to solve to the community at large to solicit new ideas. By drawing on a larger pool of ideas, it is possible to get insights from a rich diversity of people. From end-consumers with first-hand knowledge of the limitations, to experts in other disciplines unrelated to our products, the crowd has a unique and valuable perspective on the problems to be solved and on how to make improvements to internal processes or products.

The crowdsourcing (from "crowd" and "outsourcing") is a business model in which a company or an institution relies on an undefined group of people for the design, the construction, or the development of a project, object or idea. This model is based on the ease of global communication, made possible by recent technological developments facilitated by tools provided by the web (Lakhani & Panetta, 2007). Usually the open call, in fact, is made available through the portals on the Internet. For example, the crowd may be required to develop new technology, carry forward a design activity, define or develop an algorithm, or help record, systematize or analyze large amounts of data.

Crowdsourcing was initially based on the work of volunteers and enthusiasts, who dedicated their free time to create content and solve problems, benefit mainly the open source community, while today it is a new model for companies to open enterprise and an occasion for freelances to get the chance to offer their services on a global market (Lakhani & Panetta, 2007).

Open enterprises, that have a business model based on the collaboration of external resources and internal resources, in order to gain advantage in terms of specific expertise, competitive costs and release times of innovative products, could implement crowdsourcing in different ways.

An approach could be product platforming, in which the company develops a partially completed product and provides contributors with a framework or tool-kit to access, customize, and exploit. The aim is to extend the product's capabilities, increasing this way its overall value for every actor involved. Common examples of this type of open

innovation procedure are readily available software frameworks such as a software development kit (SDK), or an application programming interface (API), that are characterized by strong network effects where demand for the product implementing the framework increases with the number of developers that are attracted to use the platform tool-kit (Schutte & Marais, 2010).

Idea competitions are a model of crowdsourcing quite easy and straightforward, a model proposed by different companies that foster competition among contributors by rewarding successful submissions. The key element of this method is that it provides organizations with both inexpensive access to a large quantity of innovative ideas and a deeper insight into their customers' needs (Schutte & Marais, 2010). An interesting example of the power of this type of crowdsourcing is Threadless, the open-design T-shirt. This Chicago-based online company has a business model that revolves around an ongoing competition to which anyone, professional graphic designers and amateurs alike, can submit designs for new t-shirts. The community is polled on both the designs (which are rated using a scale of zero to five) and willingness to buy. Threadless uses this information to select for production six to ten new designs each week. Winning designs' creators receive cash and prizes worth \$2,500, are recognized for their accomplishment on the company's website, and have their screen name printed on the t-shirt label. Community members also critique submitted designs and provide feedback to help designers improve their ideas going forward. Threadless has become both a commercial and community success story, with an average of more than 800 new design submissions per week, \$ 17,000,000 in annual sales with a 35% profit margin and a still growing community (Menichinelli, 2011).

In some cases, companies might be more oriented towards the end of the product development cycle and might want to be more closely involved in the design process and product management through a process known as customer immersion. A crowdsourcing technique whereby customers' inputs as to product requirements and expectations are exploited through intense customer interaction and the involvement of and study by employees in the customer-product interaction process with the assistance of new technologies (Schutte & Marais, 2010). Examples of this are Microsoft's beta apps for Lumia, giving the opportunity to try out beta versions of apps before they are commercially released and give feedback to the teams working on them; Google Gmail,

which is in a continuous beta-status; and Google Wave, that is currently in preview period.

Other organizations might also integrate their contributors not only in a collaborative product design, but also into the development of the product. This model differs from platforming because the company still finalizes and has the control on the product eventually developed (Schutte & Marais, 2010). This way the right product is developed as fast as possible and maintaining a certain level of quality, while reducing the overall costs, as certain parts thereof are produced and provided by the prosumer (producers or consumers). A well-known examples of this method is the previously described P&G's "Connect + Develop" (C+D) program.

Finally, a more decentralized crowdsourcing model are innovation networks, in which a company leverages a network of contributors offering them an incentive to assist in solving costly, or unsolvable, but well defined problems that the organization might face during the product development phase (Schutte & Marais, 2010). Networks are disrupting the way to solve the toughest science-based R&D problems of traditionally closed enterprises in the pharmaceutical, biotechnology, consumer goods, and high-technology industries: InnoCentive.com. This innovation network, now including more than 170,000 scientists from around the world, was spun off from the global pharmaceutical company Eli Lilly and company's internet incubator in 2000. InnoCentive offers firms that encounter difficult science problems an alternative to devoting laboratory time and resources to the search for a solution: firms can post such problems, together with a designated cash prize (typically ranging from \$5,000 to \$100,000) for an acceptable solution. Problem posters and prospective solvers, who self select to the attempt to devise or formulate a solution, remain anonymous to one another throughout the process. InnoCentive's role is that of knowledge broker, providing the seeker firms that post problems with solutions solvers. The posting firm chooses the most appropriate solution, if any, and receives from the solver, in return for the prize money, all rights to the intellectual property related to the solution. About one-third of the posted problems have been solved and the associated prizes awarded. Solutions could arrive from unexpected sources and are typically not what the originating problem holder scientists had envisioned as possible (Howe, 2006; Lakhani & Panetta, 2007).

These four models of crowdsourcing create a new logic of open innovation that embraces external ideas and knowledge in conjunction with internal R&D, creating novel ways to create value. However, in these cases, companies must still perform the difficult and arduous work necessary to convert promising research results into products and services that satisfy customers' needs.

1.1.4 Communities of innovation

Besides crowdsourcing in all its different manifestation, another more distributed, more participatory, more decentralized approach to open innovation are communities of innovation.

Communities of innovation (CoI), also referred as Communities of Creation, Communities for Innovation, Innovation Communities, or Open Innovation Communities, are self-organizing groups of people who share a concern, a set of problems, or a passion about innovation, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (Coakes & Smith, 2007). The group can evolve naturally because of the members' common interest in supporting innovation, or can be created specifically with the goal of gaining knowledge related to the field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally. Communities of innovation are made up of motivated individuals working together towards a common goal because they truly believe in the common cause, not because of orders from superiors, making them safe places for the creation and support of innovatory ideas. These realities can be seen as a new governance mechanism for managing knowledge, being that intellectual property rights are considered to be owned by the entire community, even though there could be a central firm which acts as sponsor defining the ground rules for participation (Coakes & Smith, 2007).

The successful development of the Linux operating system and numerous other open source software (OSS) projects provides an example of the efficiency of CoI model of open innovation.

Linux inevitably comes to mind when open source software communities are mentioned due to its astonishing and unforeseen success under both an organizational and

commercial point of view. Linus started in 1991, in the pre-Web era of the Internet, from a series of announcements and requests for help posted by a 22-year-old Linus Torvalds on a message board for computer operating systems. These announcements set in motion a loose, informal collaboration that led to the establishment of a framework for interaction among the global community of software developers that created the Linux kernel (the core of a computer operating system). Linux's growth from just over 10 thousand lines of code at its inception to about four million lines of code as of the latest version reflects the contributions of thousands of individuals. Despite the huge success obtained and the interest aroused in a large number of people and in some companies, Linux model of participation has not changed and is still based on user need or curiosity and on contributors' willingness to have fun coding. To participate one only need to sign up for the Linux kernel mailing list (LKML) and be competent to modify source code. LKML, in fact, is the meeting point for technical discussions of the features being developed by contributors, where participants report and fix bugs, contribute and modify code, and discuss the technical evolution of the product (Lakhani & Panetta, 2007).

Researches on open source software communities has shown that the motivations to participate in this type of innovation are various, the main one is a direct need for a particular software functionality that is not available from commercial sources leading programmers to invest time, effort, and intellect on improving the open source software. Among contributors there are also a percentage of them paid to participate by their employers, because software that addresses needs of the organization might result through community development. It has also to be noted that communities of innovation provide a relatively open and transparent platform for exhibiting skills and talents to prospective employers, offering opportunities for job market signaling and skill and reputation building. Lastly, many community members simple enjoy the coding challenges and the programming task sufficiently to want to devote their incremental free time to it, being it a source of significant satisfaction that derives from the pure joy of engagement in the work, or with the group or community, or both. In fact, researches show that in this case a strong sense of identity and community belonging also motivates participation (Lakhani & Panetta, 2007).

In conclusion, successful communities increase innovations within an organization, having therefore the potential to contribute to organizational ambidexterity, the organization's dual capabilities of managing current business and being flexible and adaptable to meet future changes and demands. Largest software companies and the biggest holders of intellectual property (e.g. IBM, Sun, Apple, and Oracle), aware of the potential of this type of open innovation, have embraced open source software communities encouraging the participation of their own personnel, donating copyrighted software and patents, and integrating open source software among their offerings (Coakes & Smith, 2007). The achievements of open source software communities have brought the distributed innovation model to general attention, but it is rapidly taking hold in industries as diverse as apparel and clothing, encyclopedias, biotechnology and pharmaceuticals, and music and entertainment.

1.1.5 The maker culture

In relation to the movement of open source, in recent years, a new subculture is born: the maker culture. Proponents believe that the maker culture can lay the foundations for new processes of technological and production innovation, emerging from the bottom and on a small scale. The re-use of results, thanks to the adoption of free software licenses, could trigger a virtuous circle, in which the growing community of makers experimenting with new approaches to production based on low-cost technologies, even on a tiny scale or for a single copy, might prefigure a new industrial revolution (Sharpley et al., 2013).

The term "maker" is of doubtful origin, but it is thought that it makes reference to the two media outlets associated with the subculture: MAKE, a magazine published since 2005, and the blog Boing Boing. The blog editor Cory Doctorow, in fact, wrote a novel, "Makers", which he describes as being "*a book about people who hack hardware, business-models, and living arrangements to discover ways of staying alive and happy even when the economy is falling down the toilet*" (Doctorow, 2009).

The makers form a contemporary cultural or sub cultural movement, which can be seen as a technology-based extension of the traditional Do It Yourself world. In fact, typical interests of makers include engineering-oriented pursuits such as electronics, robotics, 3D printing, and the use of use of computer numerical control

tools, as well as more traditional activities such as woodworking, metalworking, and traditional arts and crafts. A key element of maker culture is an informal, networked, peer led, and shared learning motivated by fun and self-fulfillment. The subculture emphasizes the learning-through-doing and fosters to apply learned practical skills creatively tinkering, prototyping, applying technologies in new and unique ways, and exploring intersections between traditionally separate domains and ways of working including metal-working, calligraphy, film making, and computer programming. Social interaction is seen as central, with local groups and larger meetings in shared spaces, such as hackspaces, providing a locus for activities. Community interaction and knowledge sharing are often mediated through networked technologies, with websites and social media tools forming the basis of knowledge repositories and a central channel for information sharing and exchange of ideas. "Maker spaces" (workshop spaces equipped for collaborative innovation), informal gathering of friends, organized events ("Maker Faires") and online spaces enable cooperative construction, peer feedback, and validation (Sharpley et al., 2013).

The rise of the maker culture is closely associated with the rise of hackerspaces, Fab Labs and other "maker spaces", of which there are now many around the world. People who identify themselves with the subculture can be found at more traditional universities with a technical orientation, such as MIT and Carnegie Mellon (specifically around "shop" areas like the MIT Hobby Shop and CMU Robotics Club). As this subculture starts being widespread, "maker spaces" are becoming more frequent in universities (Swan, 2014).

A fab lab (from "fabrication laboratory") is a production space that offers personalized services for digital fabrication of physical objects on local or personal scale. A fab lab is generally equipped with a series of computerized tools able to realize, in a flexible and semi-automatic way, wide range of objects, including technological products generally considered to be an exclusive of mass production. While it can not compete with the mass production, and the related economies of scale in the production of consumer goods, the fab lab have shown great potential in providing their users with the tools to create their own technological devices. These devices can in fact be adapted to local or personal needs in ways still not accessible to large-scale productions (Gershenfeld, 2006).

The Fab Lab concept appears at the beginning of the 2000s at the Center for Bits and Atoms (CBA) at the Massachusetts Institute of Technology (MIT) whose director was already at that time Neil Gershenfeld. The Fab labs are spaces for experimentation in the field of production that are integrated within local contexts where they are located. Therefore, there is great diversity among the goals, projects and achievements, business models and structure in each Fab Lab. Digital fabrication labs open the way to personal and individualized manufacturing production, causing a relocation of production to middle or individual scale. Socially, fab labs allow to easily empower people so that they can learn production techniques and solve real problems in their daily life or simply produce something that does not exist or that they want to produce (Gershenfeld, 2006). Since 2006 the subculture has held regular events around the world. These meetings are called Maker Faire and became over time the largest event in the world of innovation. A Maker Faire is an exhibition that focuses on creativity and inventiveness, in addition to being the celebration of the "Maker Movement". During this event, the innovators of the third millennium show the projects they are working on and share technological and craftsmanship knowledge (Maker Faire website; Maker Faire Rome website).

Maker culture emphasizes the production of tangible artifacts that solve a need in their makers' everyday lives, and this explicitly includes playful or aesthetic 'needs'. The creative process emphasizes immediate feedback, testing and building of multiple prototypes, through a continuing and informal peer feedback and a shared creation. Moreover, a key role in creation is played by risk taking that is actively encouraged in the form of pushing one's skills to their limits and exploring novel solutions and production methods, with mistakes and failures celebrated as positive learning outcomes, identified as offering opportunities for personal reflection and skills progression (Sharples et al., 2013).

A well-known example of artifacts produced by makers is the Rally Fighter car by Local Motors. Local Motors, based in Wareham, Massachusetts, is the first open source car company to reach production. In June 2010, in fact the company released the Rally Fighter, a \$50,000 off-road, but streetlegal, racer, with a crowdsourced design by Local Motors' community of volunteers. While the community crafted the exterior through a call to submit ideas for next-generation vehicles, Local Motors designed or selected the chassis, engine, and transmission thanks to relationships with companies like Penske

Automotive Group. Local motors sells kit cars that combine hand-welded steel tube chassis and fiberglass bodies with stock engines and accessories, and the revolutionary aspect is that customers themselves assemble the cars in local assembly centers as part of a “build experience” (Anderson, 2010).

Thus the new industrial organizational model is built around small pieces, loosely joined.

Companies are increasingly small, virtual, and informal. Most participants are not employees, but just individuals that share interests and needs. Communities form and re-form, driven by ability and need rather than affiliation and obligation. It does not matter who the best people work for, if the project is interesting enough, the best people will find it.

In conclusion, in an age of open enterprises, crowdsourcing, open source, communities of innovation, custom-fabricated, and DIY, all you need to conquer the world is a brilliant idea. And that is exactly what hackathons, an extreme form of crowdsourcing that in recent years is becoming more and more widespread, are based on.

1.2 Hackathons, where it all began

A hackathon (also known as a hack day, hackfest or codefest) is a highly engaging, continuous event in which experts from different fields of computer science, like software developers, programmers, graphic designers, interface designers and project managers, produce in small groups working software prototypes, in a limited amount of time. These meetings typically last between a day and a week and tend to have a specific focus, but, in some cases, there is no restriction on the type of product to create (Briscoe & Mulligan, 2014; Leckart, 2012).

The most common specific subjects, that determine also different typologies of hackathons, are: specific application types, such as mobile apps, a desktop operating system, web development or video game development; a particular programming language, application programming interface (API), or framework; a cause or purpose, like the ones devoted to improving government and, specifically, to open government, such as events hosted by the United States Congress or the British Government; a specific demographic group, like teenagers, college students, or women; or the improvement of a single application. Beside these typologies there are also internal company hackathons, that some companies, such as Facebook, Microsoft, Google, AT&T, Nokia, and even Unilever, held to promote new product innovation by the engineering staff; and hackathons with no restrictions on content or attendees, aiming just to generate interesting ideas or software applications quickly (Briscoe & Mulligan, 2014).

Each fall, for many years, Microsoft employees have traveled to Safeco Field in Seattle to listen to top executives who were trying to inspire them with a vision for the future of the company.

In 2014, the new CEO of Microsoft, Satya Nadella, tried to replace that with a new tradition: the idea was to stimulate innovation in the company hosting on July 29 and 30, on Redmont campus, a 38.5-hour hackathon bringing together more than 10,000 employees from all different divisions of the company to work on a wide variety of projects.



Microsoft CEO Satya Nadella addresses employees and cranks a siren to officially start a global employees hackathon in Redmond, part of oneweek, a weeklong series of events intended to inspire employees held on July 29 and 30, 2014.

The first global employees hackathon was part of "Oneweek," which Microsoft described in a corporate blog post as "CEO Satya Nadella's effort to reinvent the way the company does business and to encourage the rise of brilliant ideas no matter where they originate."

With Oneweek, Microsoft signaled that the company is further breaking with tradition as it seeks to turn the page on its PC-based past. "This is really new," Nadella said during his remarks to employees as the event began. "This is a new approach, a new idea, a new day for us."

Oneweek is part of Nadella's larger attempt to shifted company priorities from being a "devices and services" company toward being a "productivity and platforms" one and to reshape the company's culture into one that's more innovative and collaborative. At the hackathon presentation speech, Nadella encouraged employees to take a hard look at existing Microsoft products such as Windows, Office and Bing, to get a sense for how flexible the code could be. "I want you to push the core of our code bases," he said, "Each of us has the five hacks that we would love to do on the products that we love to use and criticize. This is the time to stop the criticism and do something about it."

Since June, employees could register their hackathon projects on a company website or sign up for one already listed. That resulted in people from different divisions, who may not have even known each other, working together. In one instance, employees from Surface, Xbox, Microsoft Research, the Cloud and Enterprise group, and the Applications and Services group were working together on accessibility issues.

The 2,700 projects covered a huge range. There was one, for instance, that could help responders working in disaster areas. Another allowed wheelchair users to control their chairs using eye movements to guide a joystick.



Microsoft employees at the company's hackathon on Tuesday July 29, 2014.

In addition to the teams in Redmond, employees from around the world were taking part in the event. In some cases, hackathon teams were distributed between Redmond and other parts of the country. "In almost all of the hacks, it's people from different teams and different businesses, sometimes different geographies," Scott Pitasky, Microsoft's Vice President of Ttalent said, "It's kind of cool to get those different perspectives together."

(Bishop, 2014; Tu, 2014; Hernandez , 2014)

United by the passion for digital innovation, programming and coding, the participants spend their time together not only to launch new ideas and to develop software, applications and, occasionally, hardware components, but also with the aim of meeting and networking with each other, often throwing the basics for the initiation of a start up or a project together. The term "hackathon" is a new word coming from the hackers' world and it is a portmanteau or blend word, a term invented by combining the beginning of one word and the end of another, which fuses both the sounds and the meanings of the words "hack", in the sense of playful, exploratory programming, and "marathon" (Briscoe & Mulligan, 2014). These events, indeed, are marathons for brains where passion is mixed with creativity, mental and physical exhaustion, due to the scarce sleep time, and the joy of seeing the birth of something that you could not even imagine to be that good just a few hours before. The word "hackathon" appeared for the first time in June 1999 and seems to have been coined independently for two different meetings which took place just a few days away from each other: a meeting of the developers of the OpenBSD operating system and a meeting organized by the marketing of the Sun Mycrosystem (Briscoe & Mulligan, 2014).

OpenBSD held the first hackathon from June 4 to June 6, 1999. In the months leading up to this, either Theo or Niels Provos had coined this new word "hackathon". Ten developers from around the world congregated into a house in Calgary, and within the week had the IPv6 (Internet Protocol version 6), a communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet, and the IPSEC (Internet Protocol Security), a protocol suite for securing internet protocol communications, completely integrated into an operating system, a true industry first commemorated by an accidental scrape in the hardwood floor.

In the following years, the OpenBSD development process has benefited greatly from holding more of these events. These hackathons do not have talks, nor a specific schedule. People arrive at a hackathon to work for a straight stretch of time on the projects they wish to, in the same room as the people who they need to talk to about their ideas. Hackathons are just about writing code. At hackathons there is an attempt to get new changes quickly. Since people from many different time zones are in the same room, development is almost around the clock.

Hackathons attendees come by invitation only. When some new people in the community show promise, they are sometimes invited to see if they have what it takes. However, hackathons are not developer training events.

(OpenBSD hackathons website)

The other event, that was called "the Hackathon", was organized by Sun Microsystems from June 15 to June 19, 1999, was an event at the JavaOne conference. In that occasion, John Gage, Chief Researcher and Vice President of the Science Office for Sun, challenged attendees to write a program in Java for the new Palm V, a personal digital assistant made by the Palm Computing division of 3Com, using the infrared port to communicate with other Palm users and register it on the Internet.

(Briscoe & Mulligan, 2014)

Starting in the late 2000s, hackathons have become significantly widespread. These events developed from being an improvised pizza party to becoming a professionally organized corporate sponsored bespoke event. These meetings, in fact, began to be increasingly viewed by venture capitalists and software companies, as well as cultural organizations and government agencies, as a way to quickly develop new software technologies, to encourage digital innovation with their assets and resources, and to detect new disruptive ideas and new areas for innovation and funding. As a matter of

fact, some major companies were born from these hackathons (Briscoe & Mulligan, 2014).

The effectiveness of the hackathon phenomenon for digital innovation results from invested participation and sustainable innovation, combined with the large number of events being held. In general, the focus on issues of significance to the participants in the hackathon and the provision of an award or prize, which adds a competitive element that encourages an individual investment for personal gain, make possible to change the participants' mindset from merely volunteerism to invested participation. In particular, the provision of a prize, which often is a sponsorship for further development of the idea, potentially achieves the application of more resources to a challenge than the prize could fund directly. While the relaxed organizational structure encourages participants to innovate, it also creates an environment that help improving the product continuously, according to companies' indications or market tests done in real time, and that can manage the failure necessary for innovation to emerge (Briscoe & Mulligan, 2014; Leckart, 2012).

While hackathons do not have explicit requirements to participate, there are some implicit characteristics that could help to take part effectively in the event: the more important ones are personalities comfortable with working informally with new people in small teams, as well as strong computer programming skills. Other important abilities are the ones to work intensely under time pressure and to present one's work to others in a compelling way in a short time, i.e. pitching to judges and potential investors (Briscoe & Mulligan, 2014).

1.2.1 Structure

Typically, the hackathon start with a presentation of the event and the subject at the center of the meeting, if any. Participants, then, proceed to propose ideas and form teams, based on individual interests and skills. Sometimes they will pitch their ideas to recruit additional team members, in order to have sufficient technologists and competences to have the project completed in every part. Then the main work of the hackathon begins. The working time coincides with the duration of the event. For meetings that last 24 hours or more, especially competitive ones, participants eat while working and subsist on fast food such as pizza and energy drinks. Sleeping use to be

informal as well, with participants sleeping on-site with sleeping bags, or in provided tents at larger events (Briscoe & Mulligan, 2014).

At the end of a hackathon, there is usually a series of presentations and demonstrations in which each group illustrates their obtained results. There might be also a contest element, with a panel of judges assessing outcomes and rewarding the most deserving teams. At hackathons that have a cash prize, the jury members often are companies that organized the event or sponsors, while BarCamp-style hackathons, that are organized by the development community, the judges are usually made up of peers and colleagues in the field (Briscoe & Mulligan, 2014; Leckart, 2012). Such prizes are sometimes a substantial amount of money and the value of awarded checks has increased strongly over time, having peaks of \$250,000 at a social gaming hackathon at the TechCrunch Disrupt conference, and of \$1 million at the 2013 hackathon run by Salesforce.com, the largest-ever prize yet (Williams, 2013; Biddle, 2013).

It should be noted that hackathons, from an organizational point of view, entail a horizontal and intensive dynamic where participants complement each other's individual skills and experiences in order to develop concrete solutions. Hence, to education specialists, hackathons possess certain characteristics of a pedagogical device, being that they promote peer collaborative work oriented to problem solving; focus on the process of working as a way of learning; and promote participants' intrinsic motivation. From holding large numbers of these events, hackathons have emerged as an effective approach to encouraging experimentation and creativity, therefore boosting innovation with digital technologies in a large range of different fields (Briscoe & Mulligan, 2014).

Hackathons originated in the world of startups as a way for employees to take time off from their everyday job to code and develop new ideas. The products of hackathons, the smart services and new ways of attacking a problem, that are produced, have until recently been the sole reason for their existence. In past Facebook hackathons were developed features like the “Like” button, “Timeline” and “Facebook Chat”, while TimeHop and My Next Trip were created during similar software coding sprints at FourSquare. But now companies are finding that these energy-drink-fueled all-nighters can have business purposes that have absolutely nothing to do with hacking.

1. Hackathon as recruiting event

There are companies, like Facebook, limiting its events to internal employees, while other companies, like bitly, Meetup, and Foursquare, prefer to open their offices to outside programmers and developers for weekend hackathons. The tech world’s most passionate people are attracted to companies’ hackathons by the chance to code alongside their peers, and, seeing the really cool offices and other perks, start daydreaming about what life could be like if they were hired from the hackathon host. Meanwhile, company recruiters can study how they work during the event: “You see what people can actually do, rather than what they are saying in an interview,” says Kathryn Fink, a Community Manager at Meetup.

2. Hackathon as ploy by non-engineering contexts to get some help from the tech community

In 2011 the City of New York sponsored a 48-hour hackathon to design a new website for the government to which only specially selected programmers, designers, and city officials were invited. Rachel Sterne, the city’s chief digital officer, underlined that the main goal was to build relationships with the private sector.

Similarly Bloomberg Ventures, the venture capitalism arm of Bloomberg, holds hackathons to nurture new ideas in which to invest. Bloomberg has always been a leader in data science, and it organizes community building to remain so.

3. Hackathon as the cheapest way to do massive research and development.

Having the possibility to invite programmers to work with your product for free, there is no mean in hiring groups to test out new products and ideas. For example, New York City could have hired expensive professionals to give them proposals on their new website, but instead, they held a hackathon where, according to Sterne, the government got to “see what the brightest minds in technology and design thought would be the right direction for the website.” Those ideas are being implemented now.

Similarly, startups such as bitly give outsider engineers early access to new and upcoming parts of their service to see what they will do, getting a breadth in ideas and feedbacks that they could never afford without a hackathon.

4. Hackathon as party

“Fun”, “exciting,” and “stimulating” are the most likely words used by participant when asked to describe hackathons. Tech companies, in fact, hold hackathons for their employees, instead of other expensive events, to ensure their employees do not want to change company.

Tech professionals love hackathons so much because it is challenging. “It’s problem solving but that’s too generic a description,” says Jared Lander, a New York-based data scientist and consultant. “The computer is doing something that you’re telling it to do. You’re figuring out how to tell a computer how to solve these problems, how to jump through the hoops to make it happen. It’s creating something. It’s very much like being an artist.” Moreover, the temporary absence of the normal business rules provides the thrilling sensation of being able to do whatever you want.

(Kruger, 2012)

1.3 H-acks, the Italian evolution of hackathons

H-ack is the first hackathon format, created by H-Farm, dedicated to the diverse reality of Italian companies.

The context of H-Farm where this series of events was born is certainly of great importance in understanding the phenomenon of H-acks.

H-Farm is a venture incubator that invest and support innovative business ideas that can foster the transformation of Italian companies in a digital perspective. The “H” that form the name of the incubator means “human” and wants to emphasize the importance of the human dimension of the projects and the overall objective of creating initiatives that simplify the use of digital tools and services to people and companies, supporting the latter in transformation of their processes in a digital way. The human dimension is also reflected in the work environment: a place where you can enjoy a cozy atmosphere, that fosters contamination and sharing of knowledge. H-Farm, in fact, was born in the historic farmstead of Ca’ Tron, in the province of Treviso, which overlooks the Venice lagoon and that always looks abroad with the aim to affirm and validate its model by comparison with the global markets. Over the years, H-Farm has grown and has opened offices in Seattle, United States, in Mumbai, India, and London, United Kingdom, while maintaining an unbreakable bond with the land of origin, where there is the headquarter, real core of the whole ecosystem (H-Farm Ventures website).

H-Farm is a platform founded with the goal of helping young entrepreneurs in launching innovative small firms in the Internet sector through a business acceleration model, called H-Camp, that takes an average of 36 months, during which H-Farm invests in and supports the growth of these realities. In the first nine years, H-Farm has invested approximately 18.2 million euro in sixty startups, creating over 350 new jobs. The aggregate turnover of the companies exceeds 30 million euro. Between 2014-2018 it has been planned to invest a further 10 million euro (H-Farm Ventures website).

During H-Camp, H-Farm offers all the services and operational resources, such as consulting and logistics, useful for small innovative companies for development and acceleration of their business. It can also offer strategic advice, financial planning, meetings and training events on technical topics or digital entrepreneurship. The network developed by H-Farm allows to significantly increase contacts of the incubated small businesses giving them the chance to interact daily with entrepreneurs, potential

customers, managers, business partners, as well as business angels, private and institutional investors. This ecosystem created by H-Farm, in terms of human capital, dedicated events, opportunities for discussion and commercial offers, gives small innovative companies an ideal environment to test and accelerate their business.

H-Farm also plays the role of investor through financial resources that support the operational business of the company. It starts with a first round of investments, called "seed capital", which is required for the first expenses related to product validation and testing on the market, while following possible rounds are aimed at expanding the user and customer base of the small business. This process goes on until an industrial partner or financial investor interested in acquiring the shares of the company is found, allowing the creation of a positive "exit", a profitable sale of the part of the business owned by H-Farm (H-Farm Ventures website).

As a confirmation of the importance of the activities performed, in September 2014 H-Farm was ranked 2nd in the UBI Index 2014 Global Top 10 of the Associated University Business Incubators. UBI Index is a Swedish research organization that has developed a comprehensive sample of international incubators in order to analyze the performance of these incubators and help them become more efficient and competitive. Each year, UBI Index publishes three rankings of the best incubators globally that are respectively managed, associated, and not associated with universities. The second place of H-Farm refers to the ranking of incubators associated with the university, being it associated with the Ca' Foscari University of Venice.

The ranking takes into account three main categories: the value to the ecosystem, the value for the customer and the degree of attractiveness. These are further divided into seven subcategories and sixty-five performance indicators. H-Farm stood out for the value added generated in the economy by creating jobs, companies and networks of investors, having been chosen among more than 800 incubators in over 60 countries (Magnani, 2014; UBI Index website).

As you can also understand from the description above, H-Farm is the beating heart of a community of innovators, getting bigger every day, which meets periodically during innovation events such as Startup weekend (May 2010 and April 2013), Codemotion (November 2012), and Hackitaly camp (July 2013). H-Farm was the place where these events were held, but in 2013 it was decided to take it a step further and to try to bring

together the explosive creativity of the community of innovators with the Italian industrial excellence. First of all, it was decided to shift the focus of H-Camp investments to “Made in Italy”, with particular attention to market sectors of design, fashion, tourism, food and wine, and smart home. Subsequently, according to the chosen change and the idea of bringing together traditional businesses with the community of innovators, was created the H-ack industry format, a series of hackathons addressed to developers, makers, designers and marketing specialists to create together with firms new solutions and products through technology and digital solutions. All this with the aim to also identify interesting projects that could then be incubated within the platform of H-Farm and helped to take off as companies (Video Corriere, 2014).

Compared to the traditional format of hackathons the new distinctive element is the presence within the work groups of all typical professionals of a startup, i.e. developers, designers and marketing specialists, and the collaboration between participants and representatives of the companies involved.

The main characteristic and objective of this 24-hour non-stop marathon during which different professionals come together as a team and work together on themes proposed by participating companies is perfectly summed up by the headline used in video presentations and in the introductory slideshow at the event: "H-ack where industry meets innovation".

The first event, Hackindustry, took place on October 12 and 13, 2013 and, despite not having all the features of the final H-ack events, allowed to understand what were the potential of the new format. Hackindustry did not have a specific area of analysis, but attracted about 260 participants divided into 16 teams that worked for two days to find new solutions and redesign the processes of four companies: Brooks England, a well-known English bicycle saddle manufacturer; Sodexo, worldwide leader in quality of life services; Texa, specialists in auto diagnostics, air conditioning system maintenance, satellite tracking and training courses for vehicle mechanics; and Fizik, leader in the field of cycling saddles and performance shoes.

Thanks to the collaboration between hackers and companies, four new projects are born and, after Hackindustry, the H-ack industry format has been improved by dividing the events according to the market sector involved, including fashion, bank, wine, travel, automotive, online payments, and food.

From October 2013 to date, there have been eight more H-acks in H-Farm, which was attended by more than 1900 participants from all over the world and 28 companies, in which they were made 266 pitches of ideas, and were consumed countless liters of coffee and energy drinks and eaten countless meters of pizza.

1.3.1 Structure

Each H-ack opens with a presentation of the program and the brief launched by each company. After the presentation of the companies, participants join in team and work 24 hours no-stop to develop the project.

According to organizers' indications (H-ack official website), each team must consist of a minimum of 4 and maximum of 6 people and must include necessarily all profiles, i.e. developers, designers, and marketing specialists. Within groups, the work takes place in a very collaborative way: developers handling coding and web development; the marketing specialist dealing with market analysis, feasibility and sustainability of the idea; designers taking care of graphics, user interface and interaction design. Each team has the opportunity to interact personally with company representatives and an H-Farm mentor dedicated to them that provide participants the necessary equipment for a successful job, from application programming interfaces, technical documentation, media kit, market analysis market, and data, to comments, suggestions, and hints.

At the end of the 24 hours, teams should get to have a working prototype to be shown to the companies.

Throughout the night participants continue to work and develop the project, with the exception of the time devoted to night contest with prizes. There are three contests, one for each participant categories, that went on in the middle of the night to keep everyone wide-awake. Those who do not want to give up a few hours of sleep can bring their sleeping bag and place themselves wherever they prefer (there are no dormitories or beds in H-Farm).

In the late Sunday morning, each team presents its project in front of other participants, representatives of the companies and a jury that subsequently decreed the winning team (one per company), the "developer of the month", and the "designer of the month" that will be awarded a prize.

To participate in H-acks there are not special requirements, nor education or age limits (H-ack official website).

The typical program of the event is:

Saturday

09:00	Registration
10:00	Welcome & company brief presentation
10:30	Team Formation
11:00	H-ack kick-off
13:00	Lunch
19:00	Gym Pitch
20:00	Pizza

Sunday

01:00-03:00	Night Contests
08:00	Croissants and coffee
11:00	Closing and project delivery
12:00	Group presentations
13:00	Awarding ceremony
13:30	Goodbye BBQ

1.3.2 Past H-acks editions, brief description

November 23 and 24, 2013 - H-ack Fashion

H-ack Fashion was the second event of the H-ack industry format and involved four companies: Bottega Veneta, one of the world's leading brands of luxury; Lotto Sport Italy, a world leader in manufacture and distribution of sports clothing, footwear and accessories; Diesel, pioneer in denim and casual fashion, known for refusing the trend of the market and because it follows a personal style; and Mastrotto Group, the first European company in the production of leather. The event saw the participation of 256 people from all over Italy, students of fashion and design, developers, designers, and marketing specialists who were divided into 32 teams to respond to the needs of one of the four companies.

From this H-ack were born many good ideas and, among all, a team was chosen to enter in H-Camp to develop its idea. It was Moovi, a team consists of 6 young boys and girls, who had accepted the challenge of Lotto Sport, creating a bracelet that encourages children to do physical activity daily through a mobile app that uses the mechanisms of gamification. A wearable device able to monitor the movements of the child and the quality of the movement, sending everything to a game that, giving a punctuation to the physical activity done, allows the player to go through the various levels of the game. The startup entered the H-Camp with the name of Playwear, but is now facing some problems in developing the product.

February 8 and 9, 2014 - H-ack Bank

The first H-ack of 2014 was H-ack Bank, an event entirely dedicated to the banking world that involved large organizations such as UniCredit, Intesa Sanpaolo and Banca IFIS, to the needs of which approximately 192 participants have tried to answer with 23 projects.

The hackers' night was animated, besides usual contests, also with a speech via hangout given by David Orban from Singularity University, who talked about Bitcoin, an innovative payment network and an experimental, decentralized digital currency that enables instant payments to anyone, anywhere in the world.

March 1 and 2, 2014 - H-ack Wine

The first hackathon of H-FARM exclusively devoted to the world of wine, took place in H-Farm in March and saw among its illustrious protagonists: Vinitaly International, the true ambassador of Italian wine in the World; Allegrini, the leading manufacturer of Valpolicella Classica and one of the Italian wineries most awarded and recognized in the world; and Ferrari, the leading producer in Italy of sparkling wine made by the Metodo Classico.

In addition to the companies, there was the special participation of Simonit & Sirch, a team of 20 technicians who, since 2003, is dedicated to the recovery of the craft of pruner with training tools and collateral activities to raise awareness, and 33 Entrepreneurs, a French start-up accelerator, "*founded and funded by Entrepreneurs for Entrepreneurs*" (33 Entrepreneurs website).

33 Entrepreneurs offered a week at its headquarters in Bordeaux, where the winning team EXITE ("EXperience Italy Everywhere") had the opportunity to share seven days of debates, lectures and meetings with colleagues emerged from similar contest in Lisbon, Lausanne, London, and Monaco. Beside this, two teams, Gline and Drink Out, entered the H-Camp to develop their ideas, thanks to the incubation and acceleration program.

The enthusiasm of the 240 Participants who worked 24 hours non-stop and presented 29 projects to the three participating companies was so much, even in the social media, that the hashtag #hackwine was trending topic on Twitter for all the weekend.

April 5 and 6, 2014 - H-ack Travel

Over 360 people were challenged at H-ack Travel, the event with the greater number of participants to date, in the development of innovative digital solutions for the world of travel. In the afternoon there was also the pitch of Marco Stifanelli, Italy Country Manager at Airbnb, the world's largest community-driven hospitality company.

Divided into 47 teams, the participants worked for four companies: Bravofly Rumbo Group, a Swiss-based online travel agency; Costa Crociere, the leading cruise line in the Mediterranean Sea; Ve.la, which manages daily the numerous different tourist products and services in the city of Venice; and Wish Days, dealing with gift cards, gift packages, and online tourism.

In this H-ack were awarded one cruise trip, 30 gift packages, 20 Venice City passes, one gala dinner at the Doge's Palace in Venice, and 10 flight coupons, as well as the entrance to the H-Camp for some teams.

May 17 and 18, 2014 - H-ack Auto

In mid-May there was H-ack Auto, which brought together for a weekend four well-known companies: Smart, small car brand created by a joint venture partnership between Swatch and Mercedes-Benz; Mercedes-Benz FirstHand, the program that guarantees the used cars of the German brand; Jeep, a brand of off-road cars, now part of the FIAT Chrysler Automobiles (FCA) Group; and Texa, the company specialized in auto diagnostics, air conditioning system maintenance, satellite tracking and training courses for vehicle mechanics, that previously took part to Hackindustry. More than 200 people in 32 teams spent the weekend developing innovative digital solutions for the

automotive world and heard a presentation by Benedetta Arese Lucini, Italy Country Manager at Uber, which had developed an app that is evolving the way the world moves, connecting directly riders and drivers.

July 12 and 13, 2014 -H-ack Payment

The first H-ack completely dedicated to the world of payments took place on July, 12 and 13, and saw among its protagonists Banca Sella, one of banks that were also present at H-ack Bank, and RCH Group, leader in producing electronic cash registers and offering sales automation solutions. The participants, during 24 hours, have completed 12 projects, with the support of technical partner Spazio Dati.

During the event, Alberto Adorini and Amy Teer Haat intervened to share their stories of success. Mr. Adorini is founder and CEO at Payleven Italy, a global mobile payments solution provider operating with credit & debit cards in more than 25 countries around the world, while Ms. Haat is CEO at Flow inc, a reward-based marketplace, driven by social networks and powered by secure e-payment solutions.

October 18 and 19, 2014 – H-ack Food

The H-ack Food weekend was intense and full of energy, passion and a lot of effort on the side of team participants, who were able to produce interesting and good quality ideas in just 24 hours. 271 participants from all over Italy and Europe worked day and night to find digital solutions to briefs submitted by the participating companies, supported by mentors of H-Farm, which were available all night long to direct and advise them. To be aware of the variety of participants it is importance to know that the furthest ones were from Poland and the youngest one was 16 years old.

The involved companies were Danone Vitasnella, Kenwood, Rigoni di Asiago and Nescafé, each of them awarded the team that had been able to interpret and develop in the best way the proposed challenge. The teams that presented their ideas to the companies on Sunday morning were 39 (7 for Danone and Kenwood, 11 for Rigoni di Asiago, and 14 for Nescafé).

Many guests made the marathon even more exciting: Gnammo, the first Italian platform of social eating; Vizi di Gola, e-commerce of high quality food and wine products; ALMA Scuola Internazionale di Cucina Italiana, the world's leading international educational and

training center for Italian Cuisine; Carlo Vischi, publisher and writer of monographic books on Italian "starred" chef with over twenty monographs to his credit; and Paola Sucato, food blogger. There were also two technology partners, JoinPad and Epson Italy, both offering advice and making available smart glasses, wearable augmented reality solution, to teams in need.

November 22 and 23, 2014 – H-ack Fashion

Four companies participated in the second H-ack Fashion, held one year after the first. The challenges posed by Diesel, Miroglio Textile, RODA and Bonotto Editions were received from 327 participants, among them also two very young boys: a seventeen year old who regularly participates in the H-ack because it believes that the high school computer classes are boring and that there is nothing new to learn from them, and that consequently comes at H-Farm to increase his skills; and a sixteen-years-old, who is still a student, but has been developing websites for companies in his free time. The event was made possible also by the technical partners' contribution: Epson Italy and JoinPad, already present to past events; FOR.TEX, textile solution provider, PayPal and jusp, solution providers for online and digital payments.

The experience of the H-ack Fashion was completed with interesting interventions by Giulio Falasco, founder of Only T-Shirt, and Liz Bacelar, Founder & CEO of Decoded Fashion, and the presence of the organizers of the Milan Fashion Camp.

At the end of the event were presented a total of 52 projects to the participating companies.

Starting in April 2014, the H-ack industry format has exceeded the boundaries of H-Farm and reached other Italian cities.

The first meeting was on April, 12 and 13, 2014 at the Museum of Science and Technology in Milan, where was held H-ack City, organized by H-Farm, in collaboration with Wired Italy. It was a hacking marathon of "smart people and smart cities", dedicated to the city of the future, which was attended by about 100 people, developing 11 projects.

After this, on June, 13 and 14, 2014 in Perugia, H-ack Travel Umbria has revolutionized the tourism sector of the Umbria Region. On the occasion of the exhibition of Steve

McCurry, Perugia has hosted designers, coders and marketing specialists. The spaces in which the event took place were the former Fatebenefratelli properties, at the time hosting Steve McCurry's "Sensational Umbria" photo exhibition, and Palazzo della Penna, contemporary culture center of Perugia.

Later, the H-ack format arrived in Rome with H-ack Living held on September 27 and 28, 2014 in collaboration with The Innovation Week/Maker Faire Rome. The Innovation Week opened with this event designed to reinvent the home of the future and make its objects connected, focusing on digital technologies and innovation. The marathon was dedicated to the development of digital projects to create "smart" home environments and saw the participation of some of the most important Italian furniture and design companies: Elica, Slamp, and Valcucine. The hackers were hosted in the spaces of the MAXXI BASE museum in Rome.

1.3.3 Participants

The object of this dissertation will be the behavior of participants in H-acks and the dynamics between them within the team, for this purpose it is important to better understand what are the characteristics of participants and teams in the various events that took place and which were previously described.

The data collected over time by the organizers are incomplete for some H-acks, but still sufficient to get a brief overview on teams and participants.

The analyzed H-acks are only those that took place in H-Farm from November 2013 (H-ack Fashion 2013) to November 2014 (H-ack Fashion 2014), I chose not to consider the event Hackindustry held in October 2013, as not having all the characteristics of the H-ack format, being that it included companies from different sectors. I also excluded events not held at Ca' Tron, Treviso, in order to analyze only events as similar as possible to each other in features, differing just for the market sector of origin of the companies (Fashion, Bank, Wine, Travel, Auto, Payment, Food).

The elements that were investigated for each event are:

- Number of participants
- Number of men and women participants
- Number of total projects
- Number of teams per company

For some H-acks, there are additional data, such as number of members per team, average age of participants, region of origin, or role (marketing, designer, developer), while for H-ack Food and H-ack Fashion 2014 there are no precise information about teams, and the number of persons per team, in particular.

The number of participants in the events varies from a maximum of 367 people in H-ack Travel to a minimum of 56 people in H-ack Payment, being the average number of participants around 238 (Fashion 256, Bank 192, Wine 240, Auto 200, Food 271, Fashion 2014 327).

Depending on the number of participants, of course, also fluctuate the number of projects developed by teams: the projects delivered at the end of H-ack Travel were 47, 12 for Costa Cruises, 14 for Ve.la, 12 for Wish Days, and 9 for Rumbo Bravofly Group; while at H-ack Payment were 12, 6 for each of the two companies.

For the other events, however, the number of projects developed was around 30 (Fashion 2013 and Auto 32, Wine 29, Bank 23), and, despite the organizers always try to direct groups equally towards all companies, the distribution of the number of teams, and consequently projects, has not always been entirely uniform in the various H-acks: among the 32 projects of H-ack Fashion 2013, there were 9 projects for Lotto, for Diesel and for Bottega Veneta, while for Mastrotto Group were only 5; the same happened at H-ack Auto with 11 projects for Jeep, 9 for Texa, 8 for Mercedes-Benz FirstHand, and only 4 for Smart. At the H-ack Bank there were 11 teams for Unicredit, 9 for Banca IFIS 9, and only 3 for Intesa Sanpaolo, while, at H-ack Wine, the teams were distributed evenly among the different companies, having been developed 10 projects for both Allegrini and Vinitaly International, and 9 for Ferrari. Finally, at H-ack Food the 39 teams were 14 for Nescafé, 11 for Rigoni di Asiago, and 7 for both Danone and Kenwood. In the last two H-acks there was a total of 39 teams at H-ack Food (7 for Danone and Kenwood, 11 for Rigoni di Asiago, and 14 for Nescafé) and of 52 teams at H-ack Fashion (8 for Miroglio Textile, 11 for Roda, 15 for Bonotto, and 18 for Diesel), being that the number of members for each team was lower than in other events.

It is interesting to see that the number of persons for each team is fairly constant, despite the different number of participants in each H-ack, and that it is higher than that indicated as optimal by the organizers who indicate to form groups of 4 to 6 people. The teams that have been formed in the various H-acks, as can be seen in Table 1 below,

range from a minimum of 2 (Travel, Auto, Payment), 3 (Fashion 2013), or 5 persons (Bank, Wine) to a maximum of 6 (Payment), 9 (Car), 12 (Wine, Travel), 13 (Bank), or 14 (Fashion 2013). The average number of members per team was around 8 in the first H-acks (Fashion 2013 8; Wine and Bank 8.3; Travel 7.8), while it was lower in the following ones (at H-ack Food average of 6.9 persons, H-ack Auto 6.3, H-ack Payment 4.7, and H-ack Fashion 2014 6.3). The mode in the number of members is 6 for H-ack Auto and H-ack Payment, 7 for H-ack Fashion and H-ack Bank, and 8 for H-ack Wine and H-ack Travel. In Appendix 1.a you can find detailed data charts for each H-ack.

	Fashion13	Bank	Wine	Travel	Auto	Payment	Food	Fashion14
Max	14	13	12	12	9	6	-	
Min	3	5	5	2	2	2	-	
Mean	8	8.3	8.3	7.8	6.3	4.7	6.9	6.3
Mode	7	7	8	8	6	6	-	

Table 1. Persons per team in each H-ack.

Regarding the characteristics of participants in H-acks, it is easy to see the clear predominance of men over women: the male share ranges from a maximum of 91% at H-ack Payment and of 86% at H-ack Auto, to a minimum of 63% at H-ack Travel, 62% at H-ack Fashion, and 53% at H-ack Fashion 2, more feminine market sectors (see Appendix 1.b).

For H-ack Bank, H-ack Wine and H-ack Auto, we had the possibility to analyze also the age, noting with pleasure that the average age of participants is generally low, reaching 26.9 years for Bank, 26.4 for Wine, and even 24.3 for Auto.

Data on sex and age reflect what is described in the report "Mind The Bridge Survey 2012 - Startups in Italy facts and trends", written by Mind the Bridge (2012), a foundation who fosters a sustainable entrepreneurial ecosystem, spurs more innovative ideas, and reinvigorate the new venture economy, providing entrepreneurship

education and providing startups, investors and managers with direct exposure to the most experienced, entrepreneurial ecosystem in the world, the Silicon Valley.

In the report, completed with the scientific collaboration of CrESIT - Research Centre for Innovation and Life Sciences Management of University of Insubria in Varese, is outlined the profile of Italian startupper and is stated that startupper are, in the great majority of cases, between 26 and 30 years old (mean of 33 years) and male (89%). It should be noted that these data are similar to those on H-ack participants, because the latter are themselves startupper or would like to become one through the event.

The vast majority of participants in H-ack Bank, H-ack Wine and H-ack Auto, only events of which we have data about this aspect, are from Veneto (more than 60% of the total), the region in which H-acks take place, followed by the regions of Emilia Romagna, Lombardy, Friuli Venezia Giulia and Tuscany, represented in every H-ack (see Appendix 1.c). It has to be noticed that at H-ack Auto there was also a share of people from foreign countries (2% of the total).

Finally, with regard to the roles played by the participants, it can be noted that most of these are marketing specialists in each H-ack of which we have been given the details (Bank, Wine, Travel, Cars, Payment, Food), the second more present professionals are developers, and the third designers, except for H-ack Wine, H-ack Food, and H-ack Wine, in which the last two roles are reversed (see Appendix 1.d).

Chapter 2:

The dynamics during H-acks: Literature Review and Research Methodology.

2.1 Literature Review

This chapter, first of all, deals with the elements on which the analysis on the dynamics during the H-acks will focus. Further on, an overview of the literature about the different aspects being analyzed is presented, outlining a theoretical framework to guide this research.

The hackathon phenomenon, from which H-acks were created, is relatively new, and studies in this field are mainly concentrated on the effectiveness of the event as a tool for innovation and problem solving in various areas, taking advantage of creativity of young minds, and of points of view external to the company or to the context where the problem to be solved during hacking arose.

In this dissertation, however, I chose to analyze the phenomenon, not from the point of view of the effectiveness of the method, rather from that of the behavior of those who choose to participate in these events and the dynamics that occur within 24 hours between people working on the project, that were previously strangers to each other. In carrying out this type of analysis it was decided to focus on four elements, believed to be the most descriptive: the formation of the team and its work; the birth of the idea; the leadership; and the overall experience of the event.

2.1.1 Team formation and team working

Teams participating in H-acks are mostly temporary groups of people who joined for a short period of time in order to achieve a common goal in an innovative environment with a perspective of possibly becoming a startup, which is why the literature to which we refer is mainly that on temporary organizations, project organizations, start-up teams, and teams in general.

There is a substantial difference between permanent organizations and temporary organizations, four basic interrelated concepts can be identified that can help us to

distinguish the two contexts. Firstly, time is a critical element. In every temporary organization the concepts of time horizons and time limits are fundamental and both influence action in many ways, mainly due to the sense of urgency inherent in the deadline for the working group (Lundin & Soderholm, 1995).

Furthermore, the task itself plays a role in the group management. A temporary organization is dependent on one or a very limited number of tasks. Task definitions then provide the *raison d'etre* for the temporary organization (Lundin & Soderholm, 1995). The task may be regarded as a once-in-a-lifetime project, but could also have a more standardized character. The point is that the same task is not being attended by someone else in the same way at the same time. In the context of temporary organizations we can identify two fundamentally different types of task: unique and repetitive. Each of these comprehend a particular set of conceptions about how to act and why. The unique temporary organization is created for one single and specific situation that will not occur again, while the repetitive temporary organization is devoted to a task that will be repeated in the future. The different nature affects, consequently, the way to act. In fact, when a temporary organization is assigned a repetitive task, the actors already know how to organize themselves. Generally, their experiences are similar and they share a common interpretation of the situation. However, when the task is unique, nobody has immediate knowledge about how to act and visionary, flexible, and creative actions are consequently needed, in addition to experiences from other areas (Lundin & Soderholm, 1995).

Different resources are also needed to define a temporary organization. Both task and time are strictly linked to resource allocations, in particular to economic and material resources, while manpower resources, not being naturally covered by task and time, could be a useful tool in further defining the temporary organization. The team forms around the task at hand and the time available, thus focusing on individuals both as resources and as bearers of such things as conceptions and attitudes. Team members are brought together for example by a common interest in a specific task, by force or by coincidence. In any case, participation in the team is normally predefined as being time-limited, thus creating a specific set of expectations at the individual level. In the relation between the individual and the team, team members carry their own set of expectations and experiences with them into the team. These may resemble the expectations and

experiences of other team members to a greater or lesser extent. Teams may for instance be organized to mirror different sets of experiences and possibly even conflicting expectations (Lundin & Soderholm, 1995). The very fact that the temporary organization have a deadline, may be a condition for the acceptance of conflicting interest in the team. Every member, in fact, knows that there will be an end to the interaction in the team within a specified time. Moreover, individuals may also enter or exit the team at different times, so the "rules of the game" may change as new expectations or new experiences are introduced. However, generally speaking, the expectations and experiences gathered together in the team provide the basis for commitment within the team, and thus also a basis for motivation, communication and leadership.

Temporary organizations are normally created in order to fulfill a special scope, which usually incorporate an element of change. In fact, the temporary organization is generally the mean used when some change is needed. Consequently, there is an expectation that the temporary organization work should bring a transition, a difference in "before" and "after". Aspirations and accomplishments concerned with some sort of transition are of crucial importance to the temporary organization (Lundin & Soderholm, 1995).

These four concepts, time, task, team and transition, can be used in the description or classification of any organization, but in this contest they are used to clarify the general demarcation between temporary and permanent organizations. The four concepts also differ from the crucial concepts that define the permanent organization: the latter are more naturally defined by goals (rather than tasks), survival (rather than time), working organization (rather than team), and production processes and continual development (rather than transition) (Lundin & Soderholm, 1995).

The main aspect that distinguishes temporary organizations from traditional hierarchical organizations is that they are governed through networks of relationships rather than by lines of authority. In fact, coordination in these networks relies heavily on social mechanisms such as reciprocity, socialization, and reputation. Contrarily to what is thought, temporary organizations are not ephemeral, unstable systems that require swift trust, but are organized around enduring, structured role systems negotiated in situ, providing managerial flexibility and the opportunity to mobilize resources and

capabilities for the accomplishment of complex and partially unique tasks (Bechky, 2006).

Projects, by definition, are more or less unique endeavors with an “institutionalized ending”. In this context scholars have studied how project partners sustain and exploit on project relationships after each project, which is an element also important in H-acks, being that in some cases participants decide to participate a second time with the same team or to form a team with colleagues.

According to some recent studies, project-based relationships often do last. In fact, prior successful collaborative projects may lead to repeat partner selection and continuity in project-based relationships, because collaborative experience promotes trust or confidence in the ability of partners, which, under conditions of high uncertainty, is an important factor in partner selection leading to path dependencies. Path dependence means that certain events generate self-reinforcing processes leading to lock-in situations, meaning that successful collaborations may result in a continuous effort by project partners to repeat success and thereby avoiding search and transaction costs involved in finding new partners (Manning & Sydow, 2011). In addition, collaborating repeatedly can promote the development of collaborative capabilities, norms and routines, and other forms of relationship-specific qualities. This dynamic may prevent project partners from searching for new partners and eventually “lock” them into existing relationships. Research indicates that lock-in situations are partially desired by project partners. Coping with high uncertainty, project partners aim for “economies of repetition and recombination” by exploiting existing resources and capabilities. However, these positive effects are often coupled with significant risks, including decreasing flexibility and performance over time (Manning & Sydow, 2011).

The team interdependence, a balanced combination of dependence and independence that may develop between particular partners, increasing the likelihood of partner reselection and longevity of relationships, is a prerequisite for effective collaboration. Interdependence requires trust, trust implies connection, connection involves risk (Braxton, 2012). In fact, in order to break up patterns of dependency, members of a group or organization must build a culture of trust in themselves and others, and accept to risk to depend on each other. At the same time, they must be willing to hold themselves and others accountable for getting the job done on behalf of the group, team,

or organization. These indications apply to everyone across the organization. The balance between dependence and independence could lead to healthy interdependence and a collaborative environment (Braxton, 2012).

On the other hand, project researchers have emphasized that every project is, at least partially, unique and novel in terms of its goals, task structures, and team requirements. While projects contain routine elements, they are typically not repeatable as a whole. Consequently, the notion that prior project experience and success facilitates future collaboration requires much more thought. Partner selection based on past successes may lead to lower performance, if the same partners rejoined for significantly different project tasks. For this reason, it might be better to rely less on “economies of repetition” than on “economies of recombination”, derived from their ability to recombine, rather than simply reapply established skills and resources. To overcome this challenge researchers suggest that project partners apply “connecting practices”, recurrent activities to link team and task properties of particular projects to past and potential future collaborations, to initiate and pursue collaborative paths (Manning & Sydow, 2011).

Each H-ack has a peculiarity and each company has its particular needs, in the next chapter I will analyze how participants in the event face the team formation and the variability in team requirements.

Another important aspect to analyze in order to understand the behavior of groups of participants in H-acks is teamwork. *“Teamwork is a set of interrelated and flexible cognitions, behaviors, and attitudes that are used to achieve desired mutual goals”* (Day, Gronn, Salas, 2004). In a sense, teams “think”, “do” and “feel” as they perform their interdependent tasks. These cognitions, behaviors, and attitudes reflect the competencies (i.e. knowledge, skills, and abilities and other characteristics) that team members need to have in order to execute effective team functions and to achieve performance greater than the total independent efforts of all individual team members. In highly interdependent teams, five core components of teamwork emerged: mutual performance monitoring, back-up behaviors, adaptability, active leadership, and team orientation (Salas, Sims & Burke, 2005).

Interdependence is a crucial characteristic of a team, because if team members must depend on one another to complete the task, the team members' sense of responsibility for each others' behaviors and their motivation to perform teamwork behaviors increase significantly.

In a collaborative task, team members are interdependent because of their need to collaborate through all aspects of the team task. Conversely, team members engaged in a coordination task are interdependent with each other because a failure in earlier stages of the task will affect the ability for each subsequent team member to complete his or her portion of the task. Teamwork is a set of interrelated thoughts, actions, and feelings of each team member that are needed to function as a team and that combine to facilitate coordinated, adaptive performance and task objectives resulting in value-added outcomes. In order to facilitate the team's progression toward goal attainment, the use of shared mental models could create a framework to promotes common understanding and action, even though it is just a starting point, not a definitive solution (Salas, Sims & Burke, 2005).

First of all, team leadership is a key element in success because the team leader's failure to guide and structure team experiences to facilitate coordinative, adaptive actions can be a key factor in poor team performance.

Secondly, effective teams are comprised of members who maintain an awareness of team functioning by monitoring fellow members' work in an effort to catch mistakes, slips, or lapses prior to or shortly after they have occurred, so mutual performance monitoring is fundamental. To do so prerequisite are a shared understanding of the task and team responsibilities, and the creation of an open, trusting, and cohesive team environment. In order to do so, mutual performance monitoring must become an accepted norm intended to maximize team performance rather than an opportunity for team members to keep an eye on each other. Without this team climate, in fact, team members may view performance monitoring negatively and may react critically to feedback or assistance provided by a team member (Salas, Sims & Burke, 2005; Day, Gronn & Salas, 2004).

Moreover, research has shown that providing flexibility in how work is completed increases team effectiveness. For this reason is important for team to actuate back-up behaviors, providing feedback and coaching to improve performance, assisting team

members in performing a task, or completing a task for the team member when an overload is detected (Salas, Sims & Burke, 2005; Day, Gronn & Salas, 2004).

Another key element is adaptability, the ability to recognize deviations from expected action and readjust actions accordingly. The need for team adaptation is strictly related to the complexity of the environment within which the team operates. Adaptability assists teams to respond to unexpected demands. When the team identifies cues that the conditions have changed, adaptability helps to cope with the change, and to develop and successfully carry out a new action plan. If any step within this process is skipped or breaks down, the chance of team success decreases (Salas, Sims & Burke, 2005; Day, Gronn & Salas, 2004).

Finally, the last aspect to be considered is team orientation, which is not only a preference for working with others, but also a tendency to enhance individual performance through coordination, evaluation, and utilization of task inputs from other members, while performing group tasks. Team orientation has been found to facilitate overall team performance, increasing cooperation and coordination among team members, and this may facilitate team performance through increased task involvement, information sharing, strategizing, and goal setting (Salas, Sims & Burke, 2005; Day, Gronn & Salas, 2004).

These elements allow teams working more effectively, making them more successful. In fact, the real source of a great team's success lies in the fundamental conditions that allow effective task processes to emerge and that cause members to engage in them wholeheartedly. Other conditions that support a group's effectiveness are trust among members, a sense of group identity, and a sense of group efficacy (Urch Druskat & Wolff, 2001). In order to develop behaviors for building trust, group identity, and group efficacy, the team needs to create emotionally intelligent norms the attitudes and behaviors that eventually become habits.

A group must be mindful of the emotions of its members, its own group emotions or moods, and the emotions of other groups and individuals outside its boundaries. For example, in case of disagreement between team members on a decision, a more emotionally intelligent group would pause to hear out the objection and would also ask if everyone were completely behind the decision, even if there appeared to be consensus (Urch Druskat & Wolff, 2001).

Emotionally intelligent norms for both confrontation and caring help the group build trust and increase participation. Interpersonal understanding and perspective taking are two ways that groups can become more aware of their members' perspectives and feelings, but the ability to regulate those emotions to have a positive impact on how they are expressed and even on how individual team members feel is just as important as awareness. Some teams find that a little humor helps when pointing out errant behavior. In general a caring orientation includes displaying positive regard, appreciation, and respect for group members through behavior such as support, validation, and compassion (Urch Druskat & Wolff, 2001).

Teams gain emotional intelligence both through self-evaluation during formal events or constant activities, and by soliciting feedback from customers, peers, or the company.

The most effective teams generally establish norms that strengthen their ability to respond effectively to the kind of emotional challenges a group confronts on a daily basis, which favor to accomplish three main things: they create resources for working with emotions, foster an affirmative environment, and encourage proactive problem solving (Urch Druskat & Wolff, 2001). To do so teams need resources that all members can draw to deal with group emotions, in particular: a common vocabulary; an affirmative, optimistic environment; and a proactive, can-do attitude in problem solving. Norms that build trust, group identity, and group efficacy are the key to making teams click. They allow an otherwise highly skilled and resourced team to fulfill its potential, and they can help a team faced with substantial challenges achieve surprising successes. These types of norms can be introduced by formal leaders, by informal leaders, by courageous followers, through training, or from the organizational culture (Urch Druskat & Wolff, 2001).

In the next chapter, I will analyze if emotionally intelligent norms emerged also in teams observed at H-acks.

2.1.2 Brainstorming and idea generation

H-acks are events whose main purpose is the birth of an innovative and disruptive idea. Companies are turning to bright young people with the goal of understanding how to solve their problem or answer a need in a different form from those traditional that can emerge within the corporate boundaries. For this reason, in this research, I decided to see how the idea is generated, in order to understand if there is a common procedure adopted by groups and whether the methods used in brainstorming are different or not from those commonly used in businesses.

Many researchers and experts have written guidelines for running effective brainstorming sessions, but there are some most common pieces of advice in the field.

First of all, it is suggested to change environment. It is better to choose an environment that allows people to think and be creative without distraction. Being in a new context stimulates new ideas. This also implies unplugging from the rest of the world, not using phones, computers or tablets during group brainstorming sessions (Column Five, 2014).

Secondly, somebody should write down every idea, even those that do not seem appealing at first. It is important to try to develop each idea as much as possible before moving on. To do so it is fundamental also to postpone and withhold judgments on ideas and criticism. Most ideas are fragile and need time to incubate. All ideas are potentially good so it is better not only not to judge them until afterwards, but also avoid discussing ideas at all, as this will inevitably involve either criticizing or complimenting them. Moreover, the evaluation of ideas takes up valuable brain power which should be devoted to the creation of ideas. It is more effective to maximize brainstorming sessions by only spending time generating new ideas. Ideas should be put forward both as solutions and also as a basis to spark off solutions. It is important to build an inclusive environment where good ideas can blossom. Even seemingly foolish ideas can spark off better ones. For this reason, the team members should encourage wild and exaggerated ideas. As a matter of fact, it is much easier to come up with a wild idea than it is to think of an immediately valid one in the first place. The 'wilder' the idea the better. Bizarre and unworkable ideas can spark off great innovative ideas, so no idea is too ridiculous (Column Five, 2014; Infinite Innovations, "Rules of Brainstorming", 2014).

During brainstorming, what counts is quantity, not quality, the group could narrow down the list later. The more creative ideas a person or a group has to choose from, the

better. If the number of ideas at the end of the session is very large, there is a greater chance of finding a really good idea (Column Five, 2014; Infinite Innovations, “Rules of Brainstorming”, 2014; Sutton, 2006).

It is important to keep each idea short, capturing just the essence. Later the group can request clarification and go more in depth. Team members should build on ideas put forward by others, using other people's good ideas as inspiration for their own or combining several of the suggested ideas to explore new possibilities. In this phase, it is important not to get attached to each one's own ideas, egos are not conducive to collaboration. The best idea is the one that solves the problem for everyone. The power of group brainstorming comes from creating a safe place where people with different ideas can share, blend, and extend their diverse knowledge. Each idea presented belongs to the group, not to the person who said it. It is the group's responsibility and an indication of its ability to brainstorm if all participants feel able to contribute freely and confidently (Column Five, 2014; Infinite Innovations, “Rules of Brainstorming”, 2014).

To be able to conduct an effective brainstorming everyone should come with some ideas, so it is important to clearly define the objectives beforehand, reading relevant information in advance. Creativity comes from a blend of individual and collective ideation. That is why, individual brainstorming should be done both before and after group sessions (Column Five, 2014; Infinite Innovations, “Rules of Brainstorming”, 2014; Sutton, 2006).

Moreover, it is fundamental to stay focused during brainstorming. In fact, it is easy to stray off top and splinter into side conversations, but it is important to keep the group focused on the objectives at hand. To do so it is important to break sometimes when it make sense to (Column Five, 2014).

Finally, it is important to notice that brainstorming is just one of many practices that make a company creative, and it is of little value if it is not combined with other practices, such as observing users, talking to experts, or building prototype products or experiences, that provide an outlet for the ideas generated (Column Five, 2014; Infinite Innovations, “Rules of Brainstorming”, 2014; Sutton, 2006).

After the brainstorming phase, it is important to analyze the ideas discussed to reach a single final idea. Brainstorming, in fact, is only the generation of the ideas. Analyzing the

generated ideas is not part of brainstorming. However, brainstorming without analysis is pointless, so I will point out the basics of this second important phase.

The analysis of the ideas can be done by the leader only or can be done in group. The group can be the same group who did the brainstorming or it can be the dedicated group of people who will eventually implement the chosen ideas (Infinite Innovations, "Running the session itself", 2014).

Even if the ideas are analyzed using a group, it is always helpful to do an initial sort-out to remove duplicates and remove ideas which are really are totally impractical. This removal should be based on valid physical criteria such as cost, time and physical laws, trying not to remove any remotely possible solutions too early (Infinite Innovations, "Running the session itself", 2014).

Once a long list of possible ideas is created, it is possible to work through them and arrange them into three lists: excellent idea that will definitely work and can be implemented immediately; interesting ideas that will possibly work in the future or may require further analysis to decide if it will work; useless ideas that will not work at all (Infinite Innovations, "Running the session itself", 2014). Subsequently, the excellent ideas are implemented and the interesting ones will be further investigated. This is where management and leadership skills are necessary.

In the case of H-acks it is important to be able to integrate different aspects of excellent and interesting ideas in one final idea that is as simple and complete as possible.

The key to success in an innovative environment, as the hackathon one, is to ideate the simplest possible thing to solve the problem encountered or posed by the company.

Startups always build the absolute smallest thing that can be considered a complete application and market it. In fact, doing something "simple" at first glance does not mean you are not doing something meaningful, defensible, or valuable (Graham, 2009).

Furthermore, during hackathons and H-acks, the time to present the solution at the end of the event is very limited. When there are just few minutes to summarize the work of one or more days is critical to have a simple, clear, succinct strategy statement that everyone can internalize and use a guiding light both for working and choosing the winner of the competition. The idea should be summarize in 35 words or less to summarize your strategy and should contain three critical components: the objective of the solution; the scope of the business, the part of the landscape in which the group will

operate; and the competitive advantage, what your final solution will do differently from or better than others, which also defines the means by which you will achieve your stated objective (Collis & Rukstad, 2008).

A clear strategy statement not only could help winning the idea competition at hackathons, but can also improve team working. The better team members understand the final idea and the more they believe in it, the more they are stimulated. In fact, in general, people are motivated by interesting work, challenge and increasing responsibility, because these intrinsic factors answer people's deep seated need for growth and achievement (Herzberg, 2003).

Teams at H-acks at H-Farm can be defined as open systems which can only exist by exchanging materials with their environment. They are a sort of organism that imports materials, transforms them by means of conversion processes, consumes some of the products of conversion of internal maintenance and exports the rest (Braxton, 2012). Ideas, in fact, arise mainly from an external stimulus, the company's brief, which is then integrated into the work of the team, reworked within the group, producing this way an output, as we will see in the next chapter.

In the context of innovation there are various methods to develop a disruptive product idea, but an interesting way to generate a new idea is the one adopted by IDEO, an award-winning global design firm that takes a human-centered, design-based approach to helping organizations in the public and private sectors innovate and grow (IDEO website).

IDEO's "design thinking" is "*a methodology that imbues the full spectrum of innovation activities with a human-centered design ethos*" (Brown, 2008). By this, it is meant that innovation is powered by a thorough understanding, through direct observation, of what people want and need in their lives and what they like or dislike about the way particular products are made, packaged, marketed, sold, and supported. Design projects must ultimately pass through three phases: "inspiration" for the circumstances (be they a problem, an opportunity, or both) that motivate the search for solutions; "ideation" for the process of generating, developing, and testing ideas that may lead to solutions; and "implementation" for the charting of a path to market. Projects will loop back through these phases, particularly the first two, more than once as ideas are refined and new directions taken (Brown, 2008).

A key aspect in design thinking is prototyping, which does not have to be complex and expensive, but should take only as much time, effort, and investment as are needed to generate useful feedback and evolve an idea. In fact, the more “finished” a prototype seems, the less likely its creators will be to pay attention to and profit from feedback. The goal of prototyping is not to finish the product, but to learn about the strengths and weaknesses of the idea and to identify new directions that further prototypes might take (Brown, 2008).

Beside the methodology used by IDEO, a method far more widespread and consolidated, especially in the context of startup is the lean startup method, created by Steve Blank.

This method goes beyond the classical business plan, *“a static document that describes the size of an opportunity, the problem to be solved, and the solution that the new venture will provide”*, which *“typically includes a five-year forecast for income, profits, and cash flow”*. A business plan is considered to be essentially *“a research exercise written in isolation at a desk before an entrepreneur has even begun to build a product, under the assumption that is possible to figure out most of the unknowns of a business in advance, before you raise money and actually execute the idea”* (Blank, 2013).

On the contrary, Blank’s lean method has three key principles: first, rather than engaging in months of planning and research, entrepreneurs accept that all they have on day one is a series of untested hypotheses, that can be summarize in a framework called a business model canvas, a diagram of how a company creates value for itself and its customers (Blank, 2013).

Second, lean startups use an approach called “customer development” to test their hypotheses, so they go out and ask potential users, purchasers, and partners for feedback on all elements of the business model, including product features, pricing, distribution channels, and affordable customer acquisition strategies. They do so assembling minimum viable products and immediately elicit customer feedback. Then, using customers’ input to revise their assumptions, they start the cycle over again, testing redesigned offerings and making further small adjustments or more substantive ones to ideas that are not working (Blank, 2013).

Third, lean startups practice something called “agile development”, which originated in the software industry. Agile development works hand-in-hand with customer development. Unlike typical yearlong product development cycles that presuppose

knowledge of customers' problems and product needs, agile development eliminates wasted time and resources by developing the product iteratively and incrementally. It is the process by which startups create the minimum viable products they test (Blank, 2013).

Teams at H-acks are half-way from startup and innovative groups, in the next chapter we will analyze if their behavior is more close to one context or the other.

2.1.3 Leadership

In every team, leadership is a key element in success because the team leader's failure to guide and structure team experiences to facilitate coordinative, adaptive actions can be a key factor in poor team performance (Salas, Sims, & Burke, 2005). In general, in fact, the team leader has a role in different aspects mentioned before, for example the creation, maintenance, and accuracy of the team's shared mental model. Moreover, during the initial formation of the team and throughout the team's lifespan, the leader usually establishes and maintains an accurate shared understanding of the team objectives, the team constraints, the roles of each team member, and the resources that are available to the team (Salas, Sims & Burke, 2005).

Monitoring the internal and external environment of the team, the leader should also facilitate team effectiveness and adaptability, and ensure that the team responds effectively when changes in their environment occur.

Finally, team leaders must set expectations for acceptable interaction patterns (e.g. promoting information exchange) and create a team climate that encourages behaviors such as mutual performance monitoring, backup behavior, and adaptability (Salas, Sims & Burke, 2005).

In a group context, where the leader is not defined by hierarchical rules or by external actors, a leader can emerge spontaneously.

For what concerns gender, past researches has showed that, even though barriers to female leader emergence are being lowered, men are still more likely to emerge as leaders in group situations than women. Women have more chances of emerging as leaders only when they are perceived as experts in the field (Kent & Moss, 1994).

It has to be noticed that it is not only a matter of actual gender, in fact, in general, group members high in masculinity will emerge as leaders more frequently than those low in masculinity (Kent & Moss, 1994). In this case masculinity comprises ambition, acquisition of wealth, and differentiated gender roles, while femininity encompasses caring and nurturing behaviors, relationship orientation, gender equality and environmental awareness. In leadership emergence gender identity will account for more variance in leader emergence than biological sex (Hofstede, 2001; Kent & Moss, 1994). Individuals classified as masculine or androgynous will emerge as leaders more frequently than individuals classified as feminine or undifferentiated.

On the contrary, there are non-significant effect of sex on self-perceptions of leadership emergence, which suggests that women were as likely as men to perceive themselves as leaders. Moreover, in general, it appears that those whom others perceive as leaders also perceive themselves as leaders (Kent & Moss, 1994).

Many managers mistakenly assume that leadership style is a function of personality rather than strategic choice. They should, instead, choose the style which best addresses the demands of a particular situation (Goleman, 2000). Research has shown that the most successful leaders have strengths in the following emotional intelligence competencies: self-awareness, self-regulation, motivation, empathy, and social skill (Goleman, 2000). Scholars identified six basic styles of leadership, each deriving from different emotional intelligence competencies, working best in particular situations, and affecting the organizational climate in different ways. The best leaders do not follow just one style of leadership, but are skilled at several, and have the flexibility to switch (Goleman, 2000).

The first leadership style is the coercive style which is identified by a demand for immediate compliance. This approach can be very affective in critical situation, but might inhibit the organization's flexibility and dampens employees' motivation (Goleman, 2000).

The authoritative style mobilizes people toward a vision, stating the overall goal but giving people the freedom to choose their own means of achieving it. This style works especially well when a business is adrift, but it is less effective when the leader is working with a team of experts who are more experienced than he or she is (Goleman, 2000).

The affiliative style is particularly useful for building team harmony or increasing morale, leveraging emotional bonds and harmony (Goleman, 2000).

The democratic style builds consensus through participation. Democratic leaders build organizational flexibility and responsibility, and help generate fresh ideas, but sometimes the price is endless meetings and confused employees who feel leaderless (Goleman, 2000).

The pacesetter style is characterized by a leader who sets high performance standards, exemplifies them himself and expects excellence and self-direction, having a very positive impact on employees who are self-motivated and highly competent. On the contrary, other employees tend to feel overwhelmed by such a leader's demands for excellence and to resent his tendency to take over a situation (Goleman, 2000).

Finally, the coaching style focuses more on personal development than on immediate work-related tasks, developing people for the future. It works well when employees are already aware of their weaknesses and want to improve, but not when they are resistant to changing their ways (Goleman, 2000).

In self-managing groups, like ones formed during H-acks, no member is formally appointed as the leader, instead, the group members can assume roles that are flexible and dynamic, so that any member can provide leadership on a specific task. It is possible that one member, several members, or no members of a group exhibit leadership emergence.

"Leadership emergence represents the degree to which a person who is not in a formal position of authority influences the other members of a group" (Côté et al., 2010).

Existing theory and research reveals that informal leaders are selected because they display constructive task and team management behavior and that the behaviors predicting one's emergence as an informal leader can be organized into two categories, task-focused and member-focused, and that task focused behaviors (e.g. task coordination) are the strongest predictors (Wolff, Pescosolido & Urch Druskat, 2002). Moreover, emotional intelligence is also positively associated with leadership emergence in small groups (Côté et al., 2010).

Emotional intelligence is the ability to manage ourselves and our relationships effectively. For a leader it consists of five fundamental capabilities: self-awareness, knowing one's strengths, weaknesses, drives, values, and impact on others; self-

regulation, controlling or redirecting disruptive impulses and moods; motivation, relishing achievement for its own sake), empathy, understanding other people's emotional makeup; and social skills, building rapport with others to move them in desired directions (Goleman, 1996).

The ability to understand emotions has been defined as the most consistent predictor of leadership emergence and scholars have codified emotional intelligence through a model named five-factor model of personality. This model could predict the emergence of a leader in a group and the leadership effectiveness through the observation of five personality traits, also known as "Big Five" personality traits.

The dimensions comprising the model are neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Neuroticism represents the tendency to exhibit poor emotional adjustment and experience negative effects, such as anxiety, insecurity, and hostility. Extraversion represents the tendency to be sociable, assertive, active, and to experience positive effects, such as energy and zeal. Openness to Experience is the disposition to be imaginative, nonconforming, unconventional, and autonomous. Agreeableness is the tendency to be trusting, compliant, caring, and gentle, while conscientiousness is the propensity to be organized and dependable, show self-discipline, act dutifully, aim for achievement, and prefer planned rather than spontaneous behavior (Judge et al., 2002).

Every trait is positively or negatively related to leadership emergence and effectiveness. Extraversion emerged as the most consistent correlate of leadership. After Extraversion, conscientiousness and openness to experience were the strongest and most consistent correlates of leadership. Finally, neuroticism is negative related to leadership effectiveness, while agreeableness could be both a positive or negative indicator of leadership (Judge et al., 2002).

Later studies by McCrae and Costa (1989) and other researches present correlations between the Big Five personality traits and the Myers-Briggs Type Indicator (MBTI) evaluation. This test is a psychometric questionnaire created to assess psychological preferences in how people perceive the world and make decisions (Myers-Briggs Type Indicator (MBTI) section on CPP website). The MBTI method is further described in the Research material section.

The MBTI is used in a wide variety of organizational applications: for example, for career guidance and personal development. The assessment seeks to measure four primary dimensions: extraversion-introversion (E-I), sensing-intuition (S-N), judging-perceiving (J-P), and thinking-feeling (T-F). The Myers–Briggs test produces continuous preference scores to measure each of these four dimensions, but in most cases individuals are assigned to one of 16 type categories based on their profile of dichotomized preference scores (e.g., an ISFJ would denote an Introverted, Sensing, Feeling, Judging type).

Scholars have noted that a strong similarity exists between the MBTI's scales and four of the five Big Five dimensions: specifically, MBTI's EI scale (on the 'E' pole) corresponds to the Big Five's extraversion, the SN scale ('N' pole) corresponds to openness to experience, the TF scale ('F' pole) corresponds to agreeableness, and the JP scale ('J' pole) corresponds to conscientiousness. McCrae and Costa found that none of the four main MBTI scales, exhibited any significant degree of correspondence to the Emotional Stability/Neuroticism dimension from the Big Five (Harvey, Murry & Markham, 1995).

To sum up, the Myers–Briggs Type Indicator assessment could be use as a tool to predict leadership emergence and leadership effectiveness, being that it spotted the traits related to these two aspects.

In some cases, teams may have more than one leader. Even when there is a formally assigned one, other can emerge (Mehra et al., 2006).

Researchers studying shared leadership have argued that for shared leadership to emerge, two sets of activities must occur. First, the members of a team must offer leadership and seek to influence the direction, motivation, and support of the group. Second, the team as a whole must be willing to rely on leadership by multiple team members (Carson et al., 2007). For these individual and collective behaviors to occur, team members must believe that offering influence to and accepting it from fellow team members are welcome and constructive actions. Shared leadership is likely to be more effective when team members have a high level of task competence, when a task is relatively complex, when task interdependence is high, and when the team life cycle allows for the development of shared leadership (Carson et al., 2007).

In the next chapter I will analyze how teams organize and if one or more leaders emerge.

2.1.4 Event experience

Nowadays, the experience made during an event, through a product, or in a place, is increasingly important. As described by Pine and Gilmore in 1998 in an article entitled "Welcome to the Experience Economy", we are witnessing the rise of experience economy, a new economy following the agrarian economy, the industrial economy, and the most recent service economy. Consumers seek to experience immersion into thematic settings in contrast to just consuming products and services and, consequently, businesses must orchestrate memorable events for their customers, transforming the memory itself, the "experience", in the product to sell. Pine and Gilmore (1998) give some examples of this increase importance of experience in the selling process, among those Hard Rock Cafe, Planet Hollywood, the Rainforest Café, Walt Disney and Starbucks, but another example might be the American retailer Abercrombie & Fitch (A&F).

Although the concept of the experience economy was born in the business field, it has been applied to many other fields over time. The experience economy is also considered to be the main foundation for customer experience management.

Despite the growing importance of experience in literature and its increased relevance in the context of events in recent years, little qualitative research has been conducted on how events are actually experienced. Scholars have studied different types of experiences, but there is not a clear definition of what experience actually stands for.

I will introduced below different points of view on consumer experience and what are its types, dimensions, and configurations. I chose to consider consumer experience as a benchmark to understand the H-ack experience, because participants are more than just people working on a project, they also are consumers of the service offered by the event organizers.

To better understand the concept of "experience" it is necessary to first consider its formation. In consumer experience, two approaches of consumer behavior can be identified: the first is the traditional information processing, i.e. decision-oriented perspective, dominated by cognition, while the other is the experiential perspective or hedonic approach. "*The hedonic consumption designates those facets of consumer behavior that relate to the multisensory, fantasy and emotive aspects of one's experience with products*" (Hirschman and Holbrook 1982). In other words, the experiential or

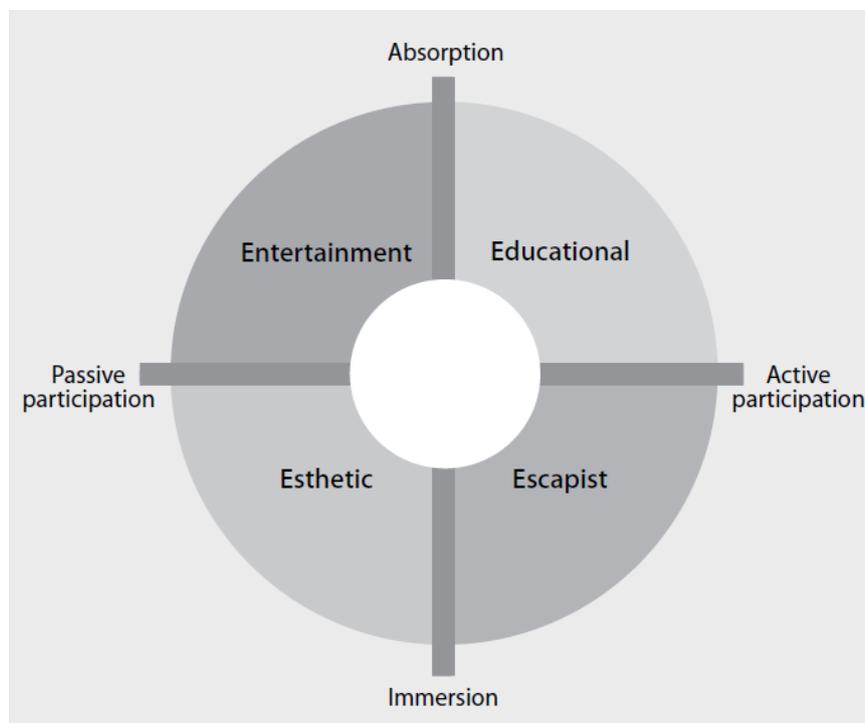
hedonic view emphasizes emotions, imagination, and symbolic and non-utilitarian aspects of consumption: consumers sense the environment, creating this way a bundle of emotions that lead to experience.

Hirschman and Holbrook introduced the concept of hedonic consumption, also referred to as experiential consumption, when talking about experiences—consuming for enjoyment, in an article in 1982. According to this definition, consumers attributes to a product a subjective meaning that complete the real attributes owned, using a multi sensory approach that involves all senses. Tastes, sounds, scents, tactile impressions, and visual images make the consumption experience unique and subjective, being that the emotive response is different for each consumer. Moreover, Hirschman and Holbrook (1982) also noted as individuals do not only perceive experiences in a multi sensory mode, but they also respond and react to the stimuli they are exposed to, hence putting interaction at the heart of experience.

In accordance with this observation, Poulsson and Kale (2004) identified some feelings or sensations that, if one or more of these elements are present, allow to label an event as an experience: personal relevance, novelty, surprise, learning, and engagement. Personal relevance refers to *“individual’s internal state of arousal, activation, and preparedness to engage in a specific experience”*, which is strictly related also to the level of engagement. The sensation of novelty requires a change in surrounding stimulus: putting something being different than before for the consumer. Surprise is the result of the difference between expectations and the event itself. An event arouse surprise when it exceeds consumers’ expectations. Thus, the event itself does not need to be new, but there must be an element of novelty in it. As personal relevance, also learning leads to engagement, being verified when there is a two-way interaction between consumers and companies or event organizers, made of input and feedback from both directions.

According to Pine and Gilmore (1999), in the era of experience economy is increasing important to aim not just to entertain consumers, but to engage them in the product or service. Following this idea, the two scholars define four types of experiences based on one of the core elements characterizing experiences: interactions, i.e. the consumer interaction and participation level with the environment. Hence, adding behavioral aspect to the consumer experience. They outlined a scheme named *“Four Realms of Experience”* (see Picture 2.1), the different types are formed based on individual’s

connection with the environment (y axis with absorption vs. immersion) and participation in the experience (x axis with passive vs. active). Absorption is limited to “occupying customers’ attention by bringing the experience into the mind”, so the consumer simply goes along with the experience, whereas in immersion the customer is “physically or virtually a part of the experience itself” (Pine & Gilmore, 1999). Hence, the realms move from mere listening and watching to immersing personally in the place. In passive participation, consumers do not affect or influence directly the event, but are just observers. On the contrary, in active participation, customers personally take part in the experience, and even produce or co-produce it.



Picture 2.1: The Four Realms of Experience,

Source: Pine and Gilmore, “Welcome to the Experience Economy”, 1998

The four realms formed by the intersection between the connection with the environment and the participation in the experience are entertainment, educational, escapist, and esthetic.

Active participation of customers in an event characterizes the educational and escapist experiences, while passive participation identifies entertainment and esthetic activities. Moreover, consumers usually are “immersed” in esthetic and escapist contexts, and just “absorb” entertainment and educational experiences (Pine & Gilmore, 1999; Pine &

Gilmore, 1998). The dimensions do not describe in detail the emotions provoked and triggered by the interactions with the environment, but classify them into themes based on the consumer participation in the experience.

Entertainment experiences are those where people actively absorb the happenings through their senses, as generally occurs when viewing a performance or a TV program, listening to music, or reading for pleasure.

Education involves active participation of individuals that absorb the events as they unfold, but are actively engaged with their minds to be informed and increase their knowledge and skills.

In escapist experiences, the customer is completely immersed in what is happening and actively participate in it, which makes this type of events memorable.

Finally, in esthetic experiences, individuals immerse themselves in an event or environment, but have little or no effect on it, leaving it untouched, but not themselves.

According to Pine and Gilmore (1999), the richest experience combines all types of experiences from entertainment to escapist, so the ideal spot is in the middle of the picture.

Besides sensations and feelings, Csikszentmihalyi (1990, 1997) defines experiences based on the consumer's mental state, and has introduced the concept of "flow" into the experience literature. The "flow state" is a mental state in which a person is completely absorbed in the activity he or she is doing. This might happen when there is an optimal balance between the challenge level of the task at hand and the individual's skill level. There are nine components characterizing this type of experience (Csikszentmihalyi, 1997):

1. Clear goals
2. Immediate feedback
3. Balance between challenges and skills (optimal fit between the two elements)
4. Intense and focused concentration
5. Merge of action and awareness that lead to no distractions
6. No worry of failure
7. Loss of self-consciousness
8. Distorted sense of time
9. "Autotelic" activity done for its own sake, because intrinsically rewarding.

To sum up, in order to reach a flow experience, an individual must be involved in an activity with a clear set of goals, and clear and immediate feedback during the process. The most crucial condition, however, is the balance between the perceived challenges of the task at hand and the individual's own perceived skills. In fact, it is important to reach an optimal fit: a task beyond an individual's skill provokes anxiety; a task beneath an individual's skill induces boredom (Lakhani & Panetta, 2007). In a state of flow, an individual is so intensely concentrated, focused on the task, and unworried about failure, that he or she does not feel distracted and his or her self-consciousness disappears. Moreover, due to intense concentration, the sense of time becomes to be distorted and the task starts being done just for its own sake. This way, in the "flow state" the consumer is completely engaged in the process of creating something or perceiving something new that he or she does not have enough attention left over to monitor how his or her body feels or other problems, he or she can not even feel hunger or tiredness, the body disappears, the identity disappears from consciousness, and the existence seems to be temporarily suspended (Csikszentmihalyi, 2004).

Research has shown that a "flow state" is frequently achieved by members of open source software communities. For them the work is a source of significant satisfaction that derives from the pure joy of engagement in the work, or with the group or community, or both (Lakhani & Panetta, 2007). Open source community members quite simply enjoy the programming task sufficiently to want to devote their incremental free time to it and when enjoyment of the task is maximized and intense and focused concentration is achieved, they are in a "flow state" (Lakhani & Panetta, 2007). Moreover, achieving a flow state also correlates with a personal sense of creativity. A majority of members of open source communities report their involvement in various software projects to be among the most creative work they have undertaken in their lives. Challenge, enjoyment, and creativity are hallmarks of "voluntary" participation in distributed innovation and of "flow state" as well. Similar findings have been reported in other open source contexts (Lakhani & Panetta, 2007).

Another interesting aspect of open source communities is the strong sense of identity and community belonging that motivates participation. For example, members who have benefited personally from using source code developed by many other members feel obliged to give back to their community. Contributors act spontaneously in a way

that benefit the community generally, free revealing their work and sharing codes, guided by a sense of self-identity (Lakhani & Panetta, 2007).

Research on open source software communities has shown motivation to participate to break out broadly into extrinsic, that is, direct or indirect rewards for performing a task, and intrinsic, that is, valuing a task for its own sake (Lakhani & Panetta, 2007). In fact, beside people participating because they have a direct need for a particular software functionality that is not available from commercial sources or because they are paid to participate, there are people taking part in open source communities for other reasons. Indirect extrinsic reasons for participation include job market signaling, and skill and reputation building (Lakhani & Panetta, 2007).

Teams at H-acks might have some similarities with open source communities, in the next chapter we will see how participants in these events at H-Farm live their experience.

2.2 Research methodology

In this chapter, the methodology for the empirical part of the study is introduced. First of all, the research approach guiding the design of this dissertation is presented and the characteristics of ethnography as a method and how it is applied in this study described. Further on, the context and main data sets of the study are described more in depth. Finally, the research process is illustrated and the validity and reliability of the study discussed.

2.2.1 Research approach

In the design of this dissertation, considering the subjective nature of some elements observed, it was decided to support the direct observation made by researchers with interviews to participants in order to confirm or verify information gathered with the former method. In fact, the researcher's values, beliefs or past experiences can act as lenses that distort the interpretation and, thus, affect the formation of findings. Moreover, in analyzing the characteristics of the leader and leadership emergence was chosen to associate the observation to the administration of a psychometric questionnaire to verify that they actually have the features observed. Lastly, in analyzing all the data I have chosen to adopt the content analysis method. This research technique, used since the early decades of the last century, has become more and more established and used, particularly in the social sciences and humanities, for the analysis of a variety of texts, including writing, images, recordings and cultural artifacts. It was decided to use this technique because it seemed the most appropriate for analyzing the content collected through ethnographic analysis of participants in the H-ack, without generating a large influence of the researcher on the interpretation of the information.

In sum, in this study I tried to limit the subjectivity typical of ethnographic studies through several tools that supported the mere direct observation.

2.2.2 Ethnography

This study is qualitative in nature and the method used to understand the dynamics that are established within teams and the behavior of H-acks participants is ethnography.

The ethnography can first be considered more a style of research than a single method, since a variety of techniques can be used to collect data. There are also two different

ways to define the ethnography method: the first one, commonly referred to as “big” ethnography, is equivalent to the qualitative research as a whole, while, the latter, called “little” ethnography, restricts its meaning to “field research” (Brewer, 2004). “Ethnography-as-fieldwork’ is the meaning that is attributed in this study, taking as a definition of ethnography that given by John D. Brewer, in his book "Ethnography": «*Ethnography is the study of people in naturally occurring settings or ‘fields’ by means of methods which capture their social meanings and ordinary activities, involving the researcher participating directly in the setting, if not also the activities, in order to collect data in a systematic manner but without meaning being imposed on them externally*» (Brewer, 2000).

Another dichotomy that characterizes ethnographies is that between macro-ethnography, the study of broadly-defined cultural groupings, such as "the English" or "New Yorkers", and micro-ethnography, the study of narrowly-defined cultural groupings, such as "members of Congress", which was the type used in this study to examine only the small group of hackers who participate in H-acks (Garson, 2008).

Ethnography is the oldest qualitative methods having its origins in travel stories narrated by ancient Greeks and Romans, although the term appears the first time in 1607, when it is mentioned to describe collections of reports. Even though the father of modern ethnography is considered to be the German Gerhard Friedrich Müller for its description and categorization of clothing, religions and rituals of the ethnic groups Siberian accomplished from 1733 to 1743, it is believed that ethnography is born as a method of cultural anthropology at the end of the nineteenth century, when the great imperialist powers, involved in the direct colonization of most non-Western countries, develop specific knowledge interests in relation to social structures and cultural systems of the populations under their control (Angrosino, 2007).

The ethnographic method search for predictable patterns in the lived human experiences by carefully observing and participating in the lives of those under study, implying close association and familiarity with the social setting. It should be noted that this does not necessarily mean actual participation in the setting, so ethnography’s repertoire of techniques includes in-depth interviews, discourse analysis, personal documents and vignettes, alongside participant observation. Now other visual methods, like video, photography and film, and the Internet are joining the list (Sangasubana,

2011). The aspect that distinguishes the application of these methods, also used in non-ethnographic research, is that they are employed to meet the core objective in ethnography, which is the exploration of the behavior of the group in the field. Another important feature of these methods when used in ethnographic research is that they are not employed in isolation from each other. In fact, ethnography routinely builds in triangulation of method because it involves the use of multiple methods of data collection (Brewer, 2000).

In ethnography there are four golden rules, been mentioned by more than an author (Hammersley, 1990; Arnould, 1994; Angrosino, 2007; et al.):

- 1) Ethnography focus on systematic data collection and recording of human action on-site or in a natural setting, not under unnatural or experimental circumstances created by the researcher;
- 2) Ethnographic research involves protracted participation by the researcher in a specific context and data are collected by various techniques, but primarily by means of observation;
- 3) Ethnography produces interpretations of behaviors that the reseacher studied and that are considered credible, being that the process is dialogic and those who are under study can give comments or feedback about conclusions and interpretations formed through it.
- 4) Ethnography involves multiple sources of data for triangulation over an extended period of time. Data collection is flexible and unstructured to avoid pre-fixed arrangements that impose categories on what people say and to generate varying perspectives on the behaviors and context of interest.

In this research, these four rules were used as guidelines: participants were studied during H-acks (see Research context); data sources varied from fields notes, photographs and participant observation to interviews and tests (see Research material). However, considering the duration of events limited to 24 hours, the impossibility to participate in all the events in person, and the turnover of observers in the two events observed, researchers faced some difficulties in fully immersing into the context. Therefore, quick-and-dirty approach was applied in this study. In addition,

being that priority was given to the experience lived by participants, the possibility of unexpected directions was acknowledged during fieldwork phase.

2.2.3 Research context

All the ethnographic materials (field notes on participants observations, photos, recorded interviews, questionnaires) for this research were gathered during H-ack Food on October 18 and 19, 2014, and H-ack Fashion on November 22 and 23, 2014. Both events took place at H-Farm Ventures, Roncade, Treviso, Italy. Prior to that I took part at H-ack Fashion on November 23 and 24, 2013, and at H-ack Wine on March 1 and 2, 2014 as a participant, besides this I had the possibility to be an observer during H-ack Travel on April 5 and 6, 2014. Participating in person in two events I was able to personally experience the dynamics within the groups to which I belonged, which helped me identifying the main elements of the H-ack phenomenon. The experience as observer at H-ack Travel, then, allowed me to also understand the perspective of H-Farm mentors and companies. During this H-ack, in fact, I joined for all 24 hours one of the mentors of H-Farm and the representatives of one of the company and this made me understand the different ways in which all groups that worked on that company interacted with both the mentor of H-Farm and the company. The more superficial, but broader observation of more than one group has allowed me to understand which could be the elements common to more than one group and therefore of more interest for the research, among those I identified during my first-hand experiences at H-ack Fashion and H-ack Wine.

All the five H-acks were described in detail in Chapter 1.

2.2.4 Research material

In most cases the sources of data in ethnographies are field notes taken during observations and interviews to the observed population.

Although the aim of ethnography is to study people in natural settings and not under unnatural circumstances created by the researcher, interviews are not naturalistic. In fact, during interviews, participants answer the questions made by the researcher and they may feel inhibited in responding spontaneously to certain issues. However, I chose to conduct the interviews in the last hours of the event, so that the observers had already been with the group a sufficient number of hours and might be perceived as

intimate from the group, diminishing the interference. Moreover, the recorded interviews transcripts were used as additional elements for the interpretation of the data gathered during the observation. Both semi-structured interviews and participant observation were used as research material.

The research material consisting of recorded interviews, informal discussions, participant observation, photographs, and tests was gathered from H-ack Food and H-ack Fashion in October and November 2014.

The two 24-hour marathons were first observed passively by each observer who joined a group and just took notes about what they said or did, then on Saturday night or Sunday morning, when the observation part was almost complete, each researcher administered the psychometric questionnaire to the leader who had emerged (if there was one) and then interviewed one or more members of the group. Throughout the event observers also took pictures of the highlights of the work of the observed team. The photographs offered a different point of view and interpretation of the experience of the H-ack event, capturing key moments such as brainstorming, teamwork, interactions with mentors of H-Farm or companies, etc. The pictures were also a reminder of the whole experience once the event was examined, at the end of the H-ack.

Research material:

- 2 groups observed for 24 hours during H-ack Food and 6 groups during H-ack Fashion, for a total of 54 persons analyzed.
- 17 recorded interviews with 42 persons, for a total of around 3 hours of recordings.
- More than 60 pages of field notes by 7 different observers.¹
- 10 Myers-Briggs Tests administered to leaders.
- 76 Pictures²

¹ A special thanks to Giulia how helped me during H-ack Food, and to Davide, Francesca, Jacopo, Marina, and Mek who joined me at H-ack Fashion. Without them it would have been possible to collect all these data.

² Most of the photos were taken by the observers, but I also took into consideration some other pictures of the observed groups taken by the event organization. Photos during H-ack Food were taken by Lorenzo Busi, Big Rock, and photos during H-ack Fashion were taken by Davide Carrer, Yourockphoto.com. I want to thank the photographers and H-Farm for their availability.

The four main methods used to collect research material are described in detail below:

a) Observations

Observation is a key part of any ethnographic study. Ethnographers, in fact, search for predictable patterns in the lived human experiences by carefully observing and participating in the lives of those under study. Ethnography may also involve a full immersion of the researcher in the day-to-day lives or culture of those under study, being observation is the act of perceiving the activities and interrelationships of people in the field setting (Angrosino, 2007).

Ethnographers observe actual people behavior in real time by recording the details of behaviors and conversations, maintaining a professional distance and not influencing the acts.

The observation of the participants in the H-ack allowed to understand more deeply what were the conduct of the participants and the dynamics created between team members. In this study it was decided that each observer would have follow in detail the activities of a group for all 24 hours of hacking. The groups were chosen in a rather random way, but in both H-acks observed it was decided to observe groups that worked on different companies. In this way the influence of the company in the observed behavior has been minimized and we could also see how groups responded to different business approaches of communication.

Observers participated in the activities of each group from its formation on Saturday morning to the delivery of the project on Sunday morning.

The aim of the observation was to reveal meanings and behaviors people might have difficulties to express verbally in the interviews, or might not even understand or admit to exist.

Researchers focused on the four elements considered the most descriptive of the experience of a team at H-ack and previously introduced in the literature review: the formation of the team and its work; the birth of the idea and the brainstorming method; the leadership and his possible emergence; and the overall experience of the event.

Observers wrote down notes about the behavior of participants, any interesting statements, and all the basic features of the observed group (number of components, composition based on roles and gender). All the observers in analyzing groups followed a common model, developed specifically for this dissertation (See Appendix 2). Besides, also photography was used for participant observation. Photographs offered a different interpretive view to the H-ack experience. Furthermore, after the event the photographs worked as a reminder of the different observations and what was going on at the H-ack.

All the observation data was gathered and recorded in the field notes.

During H-ack Food two observers joined two groups, one working for Kenwood and composed of eight persons, the other made up of seven persons and working on Rigoni d'Asiago, while during H-ack Fashion six observers flanked a group each, in particular two groups working on Diesel, two on Bonotto, one on Roda, and one on Miroglio.

The total number of persons observed was 54.

b) Myers–Briggs Type Indicator (MBTI)

The Myers–Briggs Type Indicator (MBTI) is a psychometric assessment created to assess psychological preferences in how people perceive the world and make decisions (Myers-Briggs Type Indicator (MBTI) section on CPP website).

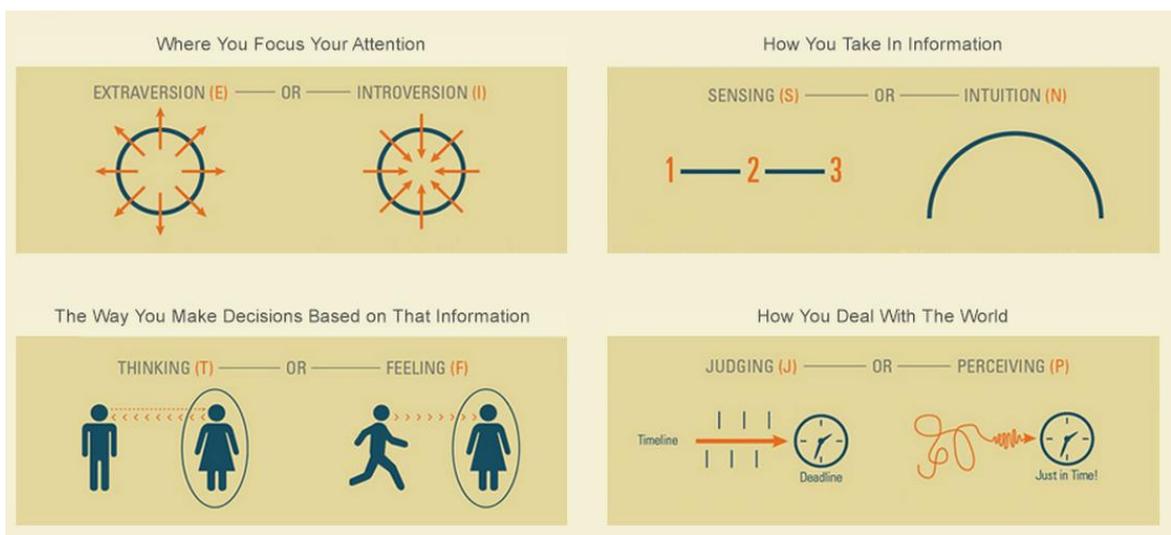
Developed in the 1940s by Katharine Cook Briggs and her daughter Isabel Briggs Myers, the assessment was based on the typological theories proposed by Carl Gustav Jung, and first published in his 1921 book “Psychological Types”. Jung theorized that there are four principal psychological functions by which we experience the world: sensation, intuition, feeling, and thinking. One of these four functions is dominant most of the time. The essence of the theory is that much seemingly random variation in the behavior is actually quite orderly and consistent, being due to basic differences in the ways individuals prefer to use their perception and judgment: *“Perception involves all the ways of becoming aware of things, people, happenings, or ideas. Judgment involves all the ways of coming to conclusions about what has been perceived. If people differ systematically in what they perceive and in how they reach conclusions, then it is only reasonable*

for them to differ correspondingly in their interests, reactions, values, motivations, and skills” (Briggs et al., 1998).

From Jung's original concepts, Briggs and Myers developed their own theory of psychological type, on which the MBTI is based. In developing the Myers-Briggs Type Indicator instrument, the aim of Isabel Briggs Myers, and her mother, Katharine Briggs, was to make the insights of type theory accessible to individuals and groups.

The MBTI organizes psychological differences in perception and judgment, identified by Jung, into four opposite pairs, or dichotomies (see Picture 2.1), with a resulting 16 possible psychological types.

All types are equal, none of these is better or worse. Briggs and Myers theorized that individuals are naturally inclined towards one of the two elements of each dichotomy, people are either born with, or develop, certain preferred ways of perceiving and deciding. The goal of the assessment is just to understand and appreciate differences between people. It has to be noted that even among those with the same type, point scores on each of the dichotomies can vary considerably from person to person.



Picture 2.1. Four dichotomies in Myers-Briggs Test. Retrieved from Myers-Briggs Type Indicator (MBTI) section on CPP website: <https://www.cpp.com/>

However, the direction of the preference (for example, E vs. I) is considered to be more important than the degree of the preference. Moreover, it is important to know that the terms indicating each dichotomy have specific technical meanings which differ from their everyday usage. For example, people who prefer judgment over perception are not necessarily more judgmental or less perceptive (Myers and Briggs Foundation website).

The 16 types are typically referred to by an abbreviation of four letters, which are the initial letters of each of their four type preferences (except for “intuition”, which is referred with the abbreviation N to differentiate it from “introversion”). For instance:

ENTP: extraversion (E), intuition (N), thinking (T), perception (P).

ISFJ: introversion (I), sensing (S), feeling (F), judgment (J).

The MBTI preferences indicate the differences between people based on:

- Where they focus their attention or how they get their energy: Extraversion, if individuals prefer group activities and get energized by social interaction; or Introversion, if individuals prefer solitary activities and get exhausted by social interaction.
- How they perceive or take in information: Sensing, when a person is down-to-earth, absorbed in practical matters, rely on his senses, focus on what has happened; or Intuition, if the person is imaginative, absorbed in ideas, relies on his intuition, focus on what might happen.
- The way they make decisions based on information: Thinking, if individuals are though, follow their minds, focus on objectivity and rationality; or Feeling, if individuals follow their hearts, focus on harmony and cooperation.
- How they deal with the outside world: Judging, if the person is decisive, prefer clear rules and guidelines, see deadlines as sacred, seek closure; or Perceiving, when a person is relaxed about his work, very good at improvising, prefers keeping his option open, seeks freedom.

By expressing their preference in each of these areas, people develop what Jung and Myers called “psychological types” (see Table 2.1 for all the sixteen types and their frequencies in the United States population). This basic personality pattern

results from the dynamic interaction of the four preferences, the environmental influences and the individual trends. People are likely to develop behaviors, skills, and attitudes based on their particular type. Each personality type has its own potential strength, as well as its areas to be developed. The indicator, in fact, is frequently used in the areas of pedagogy, career counseling, team building, leadership training, personal development and stress management (Myers-Briggs Type Indicator (MBTI) section on CPP website).

TOTAL		ISTJ 11-14%	ISFJ 9-14%	INFJ 1-3%	INTJ 2-4%
E 45-53%	I 47-55%	ISTP 4-6%	ISFP 5-9%	INFP 4-5%	INTP 3-5%
S 66-74%	N 26-34%	ESTP 4-5%	ESFP 4-9%	ENFP 6-8%	ENTP 2-5%
T 40-50%	F 50-60%	ESTJ 8-12%	ESFJ 9-13%	ENFJ 2-5%	ENTJ 2-5%
J 54-60%	P 40-46%				
FEMALES		ISTJ 7-10%	ISFJ 15-20%	INFJ 2-4%	INTJ 1-3%
E 45-55%	I 45-55%	ISTP 2-3%	ISFP 6-10%	INFP 4-7%	INTP 1-3%
S 70-75%	N 25-30%	ESTP 2-4%	ESFP 7-10%	ENFP 8-10%	ENTP 2-4%
T 24-35%	F 65-76%	ESTJ 6-8%	ESFJ 12-17%	ENFJ 3-6%	ENTJ 1-4%
J 55-60%	P 40-45%				
MALES		ISTJ 14-19%	ISFJ 6-8%	INFJ 1-2%	INTJ 2-6%
E 45-50%	I 50-55%	ISTP 6-9%	ISFP 4-8%	INFP 3-5%	INTP 4-7%
S 65-72%	N 28-35%	ESTP 5-6%	ESFP 3-7%	ENFP 5-7%	ENTP 3-7%
T 55-67%	F 33-45%	ESTJ 10-12%	ESFJ 5-8%	ENFJ 1-3%	ENTJ 3-6%
J 52-58%	P 42-48%				

Table 2.1. Estimated Frequencies of the Types in the United States Population, retrieved on November 2014 from CAPT (Center for Application of Psychological Type) website.

The MBTI tool consists of multiple choice questions that responds to the bases of the four dichotomies. Sixteen outcomes are possible, each identified by its own four-letter code. The MBTI is approximately 75% accurate according to its own manual. Over the past 40 years the instrument has proven to be both valid and reliable. In other words, it measures what it says it does (validity) and produces the same results when given more than once (reliability) (Myers and Briggs Foundation website).

The MBTI assessment can be administered either online or with paper and pencil, usually through a certified individual who has met specific professional requirements for interpreting the results of the instrument. For reasons of practicality and consistency in the judgment, in this study we chose to use the test found in the website www.16personalities.com.

The website selected was chosen after testing its reliability asking different people to make the test twice, and making a comparison with the results of a MBTI test done with paper and pencil and evaluated by a specialist.

The leaders emerged in each group either observed or interviewed during the Hack by the researchers, only in the case in which a leader emerged during the event, were asked to complete the MBTI test. The resulting MBTI profiles was studied in order to understand if leaders truly have the characteristic typical of leadership emergence or if their leadership was fortuitous or determined by other elements. The element analyzed were previously described in the literature review and were based on the McCrae and Costa's paper.

The 16personalities.com test is a 60 multiple choice online questionnaire (see Appendix 3 to read all questions). There are no right or wrong answers, but the respondent was asked to rate the statement from -3 to +3, depending on how much the sentence describes his opinion, trying not to leave any "neutral" (0) answer (see Picture 2.2).

FREE PERSONALITY TEST

Three things to know before taking the test:

1. Takes less than 12 minutes.
2. Answer honestly (even if you don't like the answer).
3. Try not to leave any "neutral" answers.



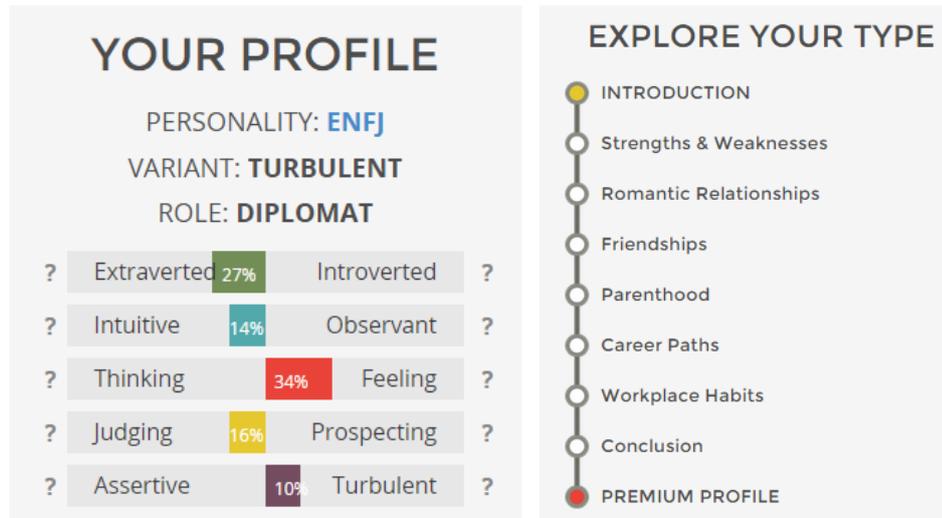
The image shows a screenshot of a personality test interface. It consists of four rows, each representing a statement with a Likert scale below it. The scales range from 'AGREE' (represented by green bars with 1-5 stars) to 'DISAGREE' (represented by red bars with 1-5 stars), with a central 'neutral' option (represented by a grey bar with a slash). The statements are:

- Statement 1: "You find it easy to introduce yourself to other people." The scale shows approximately 4 stars on the 'AGREE' side and 1 star on the 'DISAGREE' side.
- Statement 2: "A logical decision is always the best, even when it hurts someone's feelings." The scale shows approximately 4 stars on the 'AGREE' side and 1 star on the 'DISAGREE' side.
- Statement 3: "You are rather impatient." The scale shows approximately 4 stars on the 'AGREE' side and 1 star on the 'DISAGREE' side.
- Statement 4: "You need to retreat and have some 'alone time' after spending some time talking to other people." The scale shows approximately 4 stars on the 'AGREE' side and 1 star on the 'DISAGREE' side.

Picture 2.2. 16personalities.com Test. Retrieved by Marta Novello on November 2014.

The team leaders during H-acks completed the assessment either in English or Italian, depending on which language they were more comfortable with.

The result of the MBTI test, in the website 16personalities.com, is given, as you can see in the picture 2.3 below, with the four letters of the psychological type of personality, and the percentage for which there is a tendency towards a trait or the other of the dichotomy. Beside these two elements, also a variant is identify, which could be Assertive, in individuals that are emotionally stable, calm, relaxed, and refuse to worry too much; or Turbulent, for a person that is perfectionist, self-conscious, success-driven, and that care about his image. All the 16 possible psychological types are also divided in four different roles, according to the key common feature: Analysts (INTJ, INTP, ENTJ, ENTP), Diplomats (INFJ, INFP, ENFJ, ENFP), Sentinels (ISTJ, ISFJ, ESTJ, ESFJ), and Explorers (ISTP, ISFP, ESTP, ESFP).



Picture 2.2. 16personalities.com. Results. Retrieved by Marta Novello on November 2014.

For the purposes of this study all we are interested in is to find out the four letters that identify the psychological type, but in the results page of the test is given a very detailed description of the character (see Picture 2.2 and 2.3) including many different aspects.

ENFJ PERSONALITY

Everything you do right now ripples outward and affects everyone. Your posture can shine your heart or transmit anxiety. Your breath can radiate love or muddy the room in depression. Your glance can awaken joy. Your words can inspire freedom. Your every act can open hearts and minds.

— David Deida

ENFJs are natural-born leaders, full of passion and charisma. Forming around two percent of the population, they are oftentimes our politicians, our coaches and our teachers, reaching out and inspiring others to achieve and to do good in the world. With a

YOUR PROFILE

PERSONALITY: **ENFJ**
 VARIANT: **TURBULENT**
 ROLE: **DIPLOMAT**

Extraverted	27%	Introverted
Intuitive	14%	Observant
Thinking	34%	Feeling
Judging	16%	Prospecting
Assertive	10%	Turbulent

[Log out](#)

Picture 2.3. 16personalities.com. Type Description. Retrieved by Marta Novello on November 2014.

c) Interviews

According to Michael Angrosino, author of “Doing ethnographic and observational research”, interviewing is the process of directing a conversation to collect information (Angrosino, 2007). The aim of the interviews done by the researchers, in fact, was to reveal how H-ack participants describe, explain and assign meaning to their event experience and what it comprises of. Beside this, interviews gave me the opportunity to verify the elements observed in the phase of observation and deepen the same.

Therefore, semi-structured interview was chosen as a method, rather than a questions and answers session, in order to keep the questions as open ended as possible and descriptive in nature, keeping the interview relaxed and comfortable, and the overall atmosphere conversational. Themes and questions were planned in advance (see Appendix 4), but they were re-designed in every interview according to the answers received and how the interview started rolling.

Interviews were carried out on Saturday night or early Sunday morning, when all the main elements of the observation had already been outlined, so as not to influence the results of the latter method. Having already completed the group observation at the time of the interviews allowed observers to have more information and more insight into how to effectively conduct the interviews and on which aspects it was better to go more in deep. Some team members, mostly developers, were too busy to find time for the interview, so in most cases were interviewed individuals, couples or a part of the whole team. Researchers have tried to keep the interview as open and informal as possible, so in some cases it has happened that some members joined the interview in the middle of it. The alternation of voices and opinions within the same interview was managed by the interviewees themselves and allowed us to have a more complete picture of the situation.

People were selected randomly to be interviewed, but the aim was to gather a diverse group of people, in terms of company chosen, composition, age, provenance, and sex. All the observed groups were also interviewed.

During H-ack Food we recorded 6 interviews with 11 persons, while during H-ack Fashion 11 interviews with 31 persons. In sum, 17 interviews were recorded with a total of 42 persons being interviewed.

Despite the presence of foreign participants, the whole H-ack event takes place mainly in Italian, so the interviews were conducted in Italian, with the only exception of an interview with a South African girl, held in English. Moreover, H-ack participants were not eagerly willing to stop their work on their project for long, being time during hackathons always a scarce resource. Hence, all the interviews were kept short ranging from 10 to 25 minutes.

All the recorded interviews were later transcribed and analyzed.

2.2.5 Data analysis

Having a fair amount of data to analyze in an objective way, I chose to adopt content analysis, an ancient method, but still considered important in the context of research methodologies. This technique seemed the most appropriate to analyze the contents collected during the H-acks through the methods described above, minimizing the influence of researchers in the analysis. The name that today denotes the method was coined about fifty years ago, but the concept is derived from a much further time. The content analysis, in fact, is a technique that is used ever since men have learned to consciously use language (Krippendorff, 1980). The interest in messages and communications in general as a source for generating inferences and make assumptions about certain characteristics of the message itself has origins in the distant past, not identifiable with certainty.

Philipp Mayring, professor at Alpen-Adria University of Klagenfurt and researcher in the field of qualitative content analysis, distinguished four different phases in the historical background of content analysis: the first is the precursors one, where we can see different approaches to analysis and comparison of texts in hermeneutic contexts (e.g. Bible interpretations), early newspaper analysis, graphological procedures, up to the dream analysis by Sigmund Freud. In the following phase, during twenties and thirties of the 20th century, Paul F. Lazarsfeld and Harold D. Lasswell, in the United States, defined the theoretical foundations of content analysis, which they regarded as a quantitative analysis of political communications. The concept was then redefined by Berelson in 1952, who stated that content analysis is *“a research technique for the objective,*

systematic, and quantitative description of the manifest content of communication" (Berelson, 1952). In the sixties, the approach was mainly used in linguistics, psychology, sociology, and history. In addition to this, some other developments took place: some elements of the method were codified, procedures began to be used in different models of communication, the first analysis of non-verbal aspects were carried out, an analysis of contingencies was developed, and the computer began to be used. Finally, the last phase was the one of qualitative critics. From the seventies onwards, objections were raised against a superficial analysis without respecting latent contents and contexts, working with simplifying and distorting quantification. As a result, the qualitative approach to content analysis was developed (Mayring, 2000).

Qualitative methods will be chosen in situations where a detailed understanding of a process or experience is wanted, where more information is needed to determine the boundaries or characteristics of the issue being investigated, or where the only information available is in non-numeric form. Such investigations typically necessitate gathering intensive and extensive information from a purposively derived sample (Bazeley & Jackson, 2013).

Content analysis is *"an observational research method that is used to systematically evaluate the symbolic content of all forms of recorded communications"* (transcripts of interviews, discourses, pictures, protocols of observations, video tapes, documents, etc.) (Kolbe & Burnett, 1991). The method analyzes not only the manifest content of the material, as its name may suggest, but it have differentiated levels of content: themes and main ideas of the text as primary content; context information as latent content (Mayring, 2000). Moreover, the analysis of formal aspects of the material belongs to its aims as well. Content analysis embeds the text into a model of communication within which it defines the aims of analysis. This aspect is expressed by Krippendorff, who defined content analysis as *"a research technique for making replicable and valid inferences from data to their context"* (Krippendorff, 1980). Qualitative content analysis defines itself within this framework as an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without bold quantification. So the content analysis is a procedure that allows to describe characteristics of the messages in a systematic and objective way, to draw inferences and to represent real facts.

Numerous other scholars have analyzed and defined this search method and the first books on content analysis were “The Analysis of Communication Content” by Berelson and Lazarsfeld (1948) and “Content Analysis in Communication Research” of Berelson (1952). In these publications there is a first analysis, regularization and definition of the methodology as a research technique for the description in an objective, systematic and quantitative of explicit contents of communications. The literature in these fields is replete with further detailed studies, definitions, and disquisitions on the objectivity of the method.

The conclusion reached over the years is that content analysis is a research method that allows an analysis of recorded communications, a categorization of data in more basic and comparable forms, that show the real facts without investigate them directly, but looking into their conversations and actions, without affecting the object of investigation. This consideration allowed the content analysis to be seen as a scientific, objective, systematic, quantitative, and generalizable description of content, so reliable enough to be used frequently to analyze consumer behavior (Kassarjian, 1977).

To comply with the distinguishing characteristics of content analysis that are that it must be objective, systematic, and quantitative, it is very important to practice three activities that will be presented below in logical order, a provision which does not always reflect the actual time sequence: design, execution, report (Krippendorff, 1980).

First of all, it will be essential to plan the study and draft the research design. The researcher must have clear its own interests, must analyze the literature to know in depth the context from which analyzed data come from, must consider various ideas and subject to verification. The analyst must clarify himself or herself what he or she exactly wants know with his research, and then choose the aspects of studies accordingly, for the results to be valid. So, after identifying the main theme, it is important to search for the appropriate elements to study. To do this the researcher must analyze how the phenomena that he or she wants to study can be observed and where to find the related semantic trace. It is also assumed the knowledge of the context, of theories and models on the system to be investigated, and analysis of similar data in similar situations. In addition to this, sometimes it will be necessary to perform preliminary experiments to test whether the theory can be applied in contexts not completely similar. Done all these steps, it is important to make a choice on the inclusion of the data: the sample, that is,

the portion of statistical population you want to study, and the unit of analysis, elements bearers of relevant information. At this stage, the researcher needs to determine encoding instructions and justifiable procedures according to the context; decide the quality standards, namely the degree of reliability and validity; and define the timing, a budget, and how to allocate resources.

An element or subdivision of the content may range from large to small. Thus a content analysis could determine the extent of support or opposition on a controversial issue. The analysis could examine the amount of space devoted to the topic or the number of times it is mentioned, or selected key words or terms are used. Such subdivisions are the units of analysis.

The units of analysis correspond to significant elements or grammar elements, and can consist of words, key symbols (a more complex semantic unit: a word, a sequence of two or more words, an enunciation), themes (even more complex units which consist of statements on certain elements in the text, simple propositions made by the researcher in the form of subject-action-complement), propositions (sentences as they appear in the text, considered in reference to the main meaning that they express). The operations that may be performed on the units of analysis are the calculation of the frequencies, the classification into categories (in this case the units are named "units of classification"), the analysis of contingencies, the construction of verbal indexes, the analysis of evaluations, the computerized content analysis, and the analysis of lexical correspondences (Losito, 1996).

Central to this research is the classification of the units of analysis into categories, which are key concepts, conceptual labels, grouping words and phrases with the same meaning, or related to the same subject. These are defined by the researcher in relation to the objectives and hypotheses of the research, taking into account contents that may be found in the texts included in the sample to be analyzed. Categories are then defined according to the rules that specify what units belonging to the same category must have common, and could be thematic (economy, culture, etc.), evaluative (positive, negative, strong, weak) or of action. The definition of categories is a complex and delicate phase, because decisions made at this stage have a significant influence on the results of research and the inferences that can be drawn from these. The categories, however, must be defined so as to be exhaustive (each case must be assigned to a category),

mutually exclusive (each case must be assigned to one category only), relevant (following the actual contents of the texts analyzed), and objective (making it possible to achieve the same results if you use the same categories on the same texts). Finally, the unit of analysis are assigned to each class must be homogeneous (Krippendorff, 1980).

Categories may also have different levels, representing different degrees of generality, and can be defined both before analysis, based on past theories and researches on the same subject, or emerge from a previous test analysis. The allocation of the content to categories, if they have been well designed, will be almost mechanical. In any case, the classification process should be reliable and different people should be able to achieve the same result by analyzing the content of communication and following the same rules. However, it is likely that problems arise for the reliability of certain words or statements that have ambiguous meanings, and, in this case, there may be problems with the definition of the categories and the allocation of units to the categories.

The encoding can be done manually when the unit of analysis is a text or a part of it, or in an automatic way, which usually occurs when the minimum textual unit is the word. Nevertheless, this unit of analysis is not the only one used for the automatic analysis and, depending on the research purposes, you can select different types of units. Once you have determined the unit of analysis, the software will do the job of assigning units to variable modes. Unfortunately, in this encoding method, there are serious problems due to the ambiguity of words and statements, which in turn require manual intervention on the text. Furthermore it is important to remember that the most simple analysis that can be done on textual content is quantitative and is the calculation of absolute and relative frequencies of the words or key symbols. This calculation leads to get an indication of the interest in respect of certain words or concepts in the analyzed texts. However, it must be take into account that there are ambiguous words from the lexical point of view, polysemic words, and sometimes the meaning of a word could be paraphrased.

At the end of the examination of data, it is necessary to draw up a report that contains the reason for which the problem was addressed or the theme analyzed, how the work was done, and the extent to what the study brings new information, as well as data analysis and interpretation of results.

The content analysis in this dissertation was performed following this procedure.

The sample used, as anticipated, are all data collected through the ethnographic study of participants in the Hack and, specifically, notes taken from the group observation, photographs, and transcripts of taped interviews with the participants were analyzed.

The aspects analyzed were those described in the first part of the chapter, namely: team formation and team working, brainstorming and flow, leadership, and event experience. The aim of the research was to understand exactly how participants in the Hack behaved in teams, meant to last for only 24 hours of event and made up of people previously unknown.

In conclusion, we decided to use content analysis because it is considered a great tool in the development of a theory. In fact, according to Lijphart (1971), there are five reasons why content analysis is useful to develop a theory. First, content analysis is valuable in collecting data about communications when there are no theoretical support, this type of analysis is useful in fostering future research and theory-building efforts. Second, in a particular type of research, called "interpretative content analyses", researchers could use a theoretical perspective as the basis for collecting data, without intending to make generalizations to a larger population (i.e., they are merely attempting to describe or explain data). Third, in some cases scholars might make inconclusive predictions about a phenomenon, but the content analysis may still be used to provide evidence for specific hypotheses. Such studies would be called "hypothesis-generating content analyses". Fourth, content analyses that appraise the presence of the predicted content are called "theory-confirming content analyses" and would examine what is predicted by established theories, thereby confirming or invalidating the theoretical position. Last, in some cases the examination may help to explain unexpected variations, in so called "deviant-results content analyses", taking in consideration all those stimuli that fail to comply with the balance of the sample (Lijphart, 1971).

The proposed categories reflect the supportive role that content analysis has in theory development. The largest contribution that this method can make is to embellish, augment, accumulate, and describe information. The need for systematic study and information acquisition, part of the initial steps in theory development, can be readily provided by content-analysis research (Kolbe & Burnett, 1991).

In this dissertation, content analysis was used mainly as a way to spot the main themes related to the theoretical categories of team formation and its work; the birth of the idea; the leadership; and the overall experience of the event.

2.2.6 Validity, transferability and reliability

The aspects that determine the quality of the results in an ethnographic research are three: validity, transferability and reliability.

Validity generally refers to the accuracy of the findings: how true the data in the study are and how precise are the interpretations. The use of triangulation within a method (in this case, through observations, interviews, tests and data analysis) is the source of ethnographic validity (Holloway et al., 2010). To get a description of the behavior of participants in the Hack as complete as possible, it was decided not to limit the data collection to observation, but also to conduct follow-up interviews to substantiate what was written on field notes and to administer a psychometric test to some participants. In addition to this, pictures were taken. Moreover, the observers were more than one, so that the subjectivity was limited by having different point views on the event. At the end of data collection, to further minimize subjectivity in data analysis, it was decided to use the method of content analysis.

In qualitative research, validity or generalizability might be a critical concept, being that the ethnographic study focuses on a specific case or setting, that is difficult to recreate identically. For this reason, transferability is preferred to generalizability. Researchers advocate that comparable settings are likely to produce similar data, so theory-based generalization can be achieved *“involving the transfer of theoretical concepts found from one situation to other settings and conditions”* (Holloway et al., 2010).

Finally, reliability consists of stability and repeatability of research results (Holloway et al., 2010). While it might be inappropriate for qualitative research as social situations are not replicable, reliability, or reproducibility, is one of the distinguish characteristics of content analysis as contrasted with other techniques of research. *“The importance of reliability rests in the assurance it provides that the data obtained are independent of the measuring event, instrument, or person”* (Kaplan & Goldsen, 1949).

All the interviews were recorded and transcribed by a single person, while field notes and photographs were gathered on the field by different observers.

Chapter 3:

Team dynamics during H-acks: results of the ethnographic study.

3.1 The analysis of team dynamics during H-acks

In analyzing the dynamics of teams participating in H-acks, I have taken up and deepened the categories presented in the literature review and considered the most descriptive of the phenomenon, namely the formation of the team and its work; the birth of the idea; the leadership; and the overall experience of the event.

In this chapter I will describe in detail the observations of the various elements and I will try to point out whether the behavior of participants in H-acks responds to what is described by the theory or if it deviates from it. I will also try to justify to the best of my ability any conduct that would be considered abnormal and to describe in a comprehensive manner all typical aspects of teams at H-acks, in order to also give valid material for further research on this topic.

3.1.1 Team formation and team working

Teams participating in H-acks are generally temporary groups of people who joined for 24-hours in order to answer a company's problem in an innovative environment with a perspective of possibly becoming a startup, as mentioned in the previous chapter.

In this regard, in the literature review concerning temporary organizations, four basic interrelated concepts distinctive of this type of organizations were identified: the uniqueness of the task; the importance of having a deadline and limited time; the team created around the time available and the objective at hand; and the purpose containing an element of change (Lundin & Soderholm, 1995). In the ethnographic study of teams conducted during H-ack Food and H-ack Fashion, all these elements can be found.

The eight teams observed were composed on average of 6.75 members and a majority of men, data in line with the general ones of the two events that saw an average of 6.9 people per team for H-ack Food and 6.3 for H-ack Fashion, and a wider participation of men than women (68% of male participants in H-ack Food, and 53% in H-ack Fashion).

Moreover, the vast majority of teams were formed by more marketing specialists than designers, and more designers than developers, which could be considered normal being that marketing specialists had been the most present category in each H-ack. Analyzed teams can therefore be considered representative of the observed population. Teams participating in H-acks were in some cases already formed before the event, but in most cases were created or completed during the event: among teams observed during the ethnographic study only one team arrived already formed and added no members.

Upon arrival at H-Farm, where H-acks take place, participants registered for the event and were given a badge to be worn around the neck with a different badge holder color depending on the role (green for marketing specialists, red for developers, and blue for designers; see Picture 3.1). This had been a key element in the formation of teams as it allowed to distinguish from afar a professional from another, as we will see later.



Picture 3.1: Participants wearing different badge holders according to their roles.

Formation or completion of the team usually took place in two different moments: as soon as they arrived at H-Farm, participants began to look around and talked randomly to people who were physically close to them, exchanging opinions on their ideas, participating companies, and their interest in company briefs. This way, small groups were formed, which later sought together the professionals missing to complete the team. Similarly, there were groups of friends or acquaintances who came to H-Farm with the idea of working together and that, once checked in at the event, looked for other people. This was the case of some of the observed teams that during the interview told:

"It was actually a fortuity, I arrived in the morning, I was alone and did not know anyone and the three marketers of the group that came together and are all studying in Ferrara, literally "tackled" me while I was having breakfast, having seen that I was a designer. Organizers gave us a different color for each category of skills and therefore we could easily distinguished different professionals. Then we did the same thing with another designer and a developer. So we have chosen each other more based on the color of the badge holder around our necks than for anything else. We had to do an heterogeneous group, and we have seen more or less who was alone. We randomly selected one another." - Interview to a group working on Rigoni di Asiago observed during H-ack Food

"We were three marketing specialists and a designer and today we immediately searched for a developer, which of course is the key element for the project. A person found this couple who was entering and blocked them immediately on the door, having seen that one of them was a developer. Readiness was fundamental." - Interview to a group working on Kenwood observed during H-ack Food

"Assuming that the team is the true competitive advantage, although it may seem obvious, we arrived already with the core of the team and found in H-Farm the necessary missing pieces." - Interview to a group working on Miroglio Textile Observed During H-ack Fashion

Another team interviewed during H-ack Food introduced an additional criterion for selecting members: the interest for a specific company or brief.

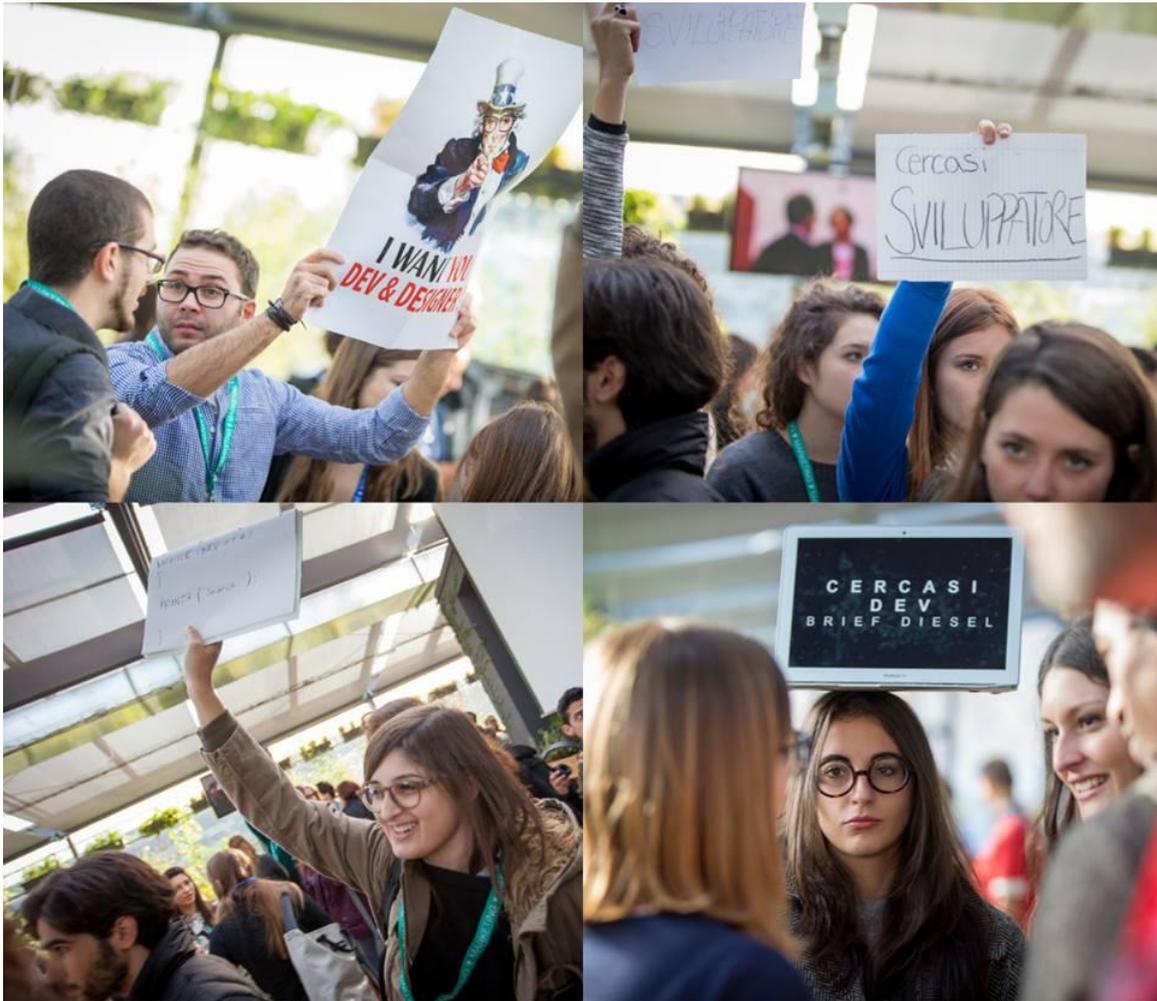
"We created the group on the basis of the fact that we were looking for someone who wanted to work on Nescafé and we found that they were a fairly heterogeneous group having already one designer and two developers. So we joined them." - Interview to a group working on Nescafé at H-ack Food

In the interviews, observers also asked the team how many people they were familiar with before the H-ack among those belonging to their team. In most cases, participants knew at least one other member of their team, some were known only by sight, while others were colleagues, classmates, friends, or boyfriend/girlfriends. A particular and interesting case can be found in one of the teams observed at H-ack Fashion where some of the members had worked together at H-ack Travel while others at H-ack Travel Umbria. The team was then a set of people gathered because they met in different, previous H-acks, to whom joined work colleagues and fellow students. In this example we find what is described by the theory, according to which, under conditions of high uncertainty, prior successful collaborative projects may lead to repeat partner selection (Manning & Sydow, 2011). However, in this group we can see how they, intelligently, decided not to reconstruct exactly the same team of the previous H-ack, but to recombine elements of several teams, so as to create a better fitted team for the event in terms of skills.

From what arises from the ethnographic study, therefore, teams were formed in a fairly random way uniting people who were physically close or who first agreed to join the group. The criteria for team formation emerging most often were those of a previous mutual knowledge, the covered role, and the interest in a specific company or brief.

Until the first company presentations marking the real beginning of the H-ack, participants created a tentative team configuration, that might be modified since some participants might change their minds, by listening to company presentations and having a more complete description of briefs from representatives of each company. After presentations, a bargaining among participants for the formation of a better and more complete team started and people tried to convince any undecided person to join their group by any means (see Picture 3.2).

"She had a sign saying "Adopt us...I won H-ack Food " with an arrow pointing to her head, while the third girl had the designer badge and was alone. We needed a designer at that point, and we chose her. The choice however was rather random." - Interview to a group working on Diesel at H-ack Food



Picture 3.2: Team formation at H-ack Fashion, after presentations. November 2014

Each observed team proves to be very willing to accept new people, even strangers. The openness towards people is a fundamental element of an innovative event, like an H-ack, and the participants seem to be well aware of this unwritten rule and willing to respect it.

Once the final team was created, observed teams sought a workspace large enough for all of them (see Picture 3.3), and generally began to discuss directly about the work, without knowing much of the others, apart from the name.

This attitude can be justified by the temporary nature of the team: participants join for one single and specific situation that will not occur again, and have just for 24-hours to complete a project. Due to the time restriction, they need to save time on getting to know each other and they consequently see each other mainly as resources and bearers of useful competencies to achieve a goal. Over time, as the project took shape, the tension was released and opportunities to socialize were created. Usually only from



Picture 3.3: Teams working during H-ack Food, October 2014

Saturday evening or night, team members began to talk about themselves, exchange contacts, or add each others to social networks. In the early hours of the event they focused mainly on the creation of the innovative idea and the only thing they did at the level of organization of the group was to create the profile of the team on Teambly, the event management platform of H-Farm, and uploaded there a photo of the team. In some cases they exchanged e-mail addresses in order to share the work materials in file sharing cloud storage services, as Google Drive and Dropbox, or online applications, as Join.me.

The definition of the idea to develop occurred basically with the contribution of the whole group, although in all groups marketing specialists seemed to have a dominant role in this phase. The division of work according to competences appeared even clearer later, when the idea was well outlined and started to be developed. At this stage, it is clearly evident from field notes how most groups implemented a clear divisions into subgroups. Subgroups could be composed of members with the same role or even of members with different roles. Developers and designers tended to work more individually, still asking the opinion of the other members of the team or the subgroup,

while marketing specialists worked more together or alongside the developers by giving them guidance on how to implement the idea and better defining less clear aspects.

Depending on skills, each one deals with a specific aspect. The work is conducted for tasks sometimes in different places (in the garden, on the tables, ...), even within a subgroup there is always one of the two emerged leaders, one is designer and another developer. - Field notes about a group working on Rigoni di Asiago observed during H-ack Food

Team members assign tasks according to skills: designers are concerned with logo, design of graphic interface and presentation, content graphics for the mock-up version of the product; the developer, after the designer has developed the graphics, develops the mobile app and the web; marketers deal with the part of the business model, the name and the content of the presentation. Everyone works on his own, but they interact a lot and the work is divided equally according to individual skills. In the case of one of designer and the developer, the output of one's work is the input of other's work so they turn to and exchange their points of view with one another frequently. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

At about 6 pm, when the basic idea was conceived, two groups are formed: one made by designers who deal with the graphical part of the presentation, and another made by the developer and two marketing specialists who instead produces content, writes the texts to be inserted and continues debating on the refinement of the idea. - Field notes about a group working on Bonotto Editions observed during H-ack Fashion

Everyone is responsible for a specific thing according to his/her knowledge and ability. Marketing specialists work together in group on the presentation, while another marketer works alongside with developers helping them to decide specific aspects of the app (color, logo, content, ...) - Field notes about a group working on Kenwood observed during H-ack Food

As seen in the literature review, a crucial characteristic of a good team is interdependence, namely team members depending on one another to complete the task. This element, in fact, increases the team members' sense of responsibility for each others' behaviors and their motivation to perform teamwork behaviors. A highly interdependent team is characterized by mutual performance monitoring, back-up behaviors, adaptability, active leadership, and team orientation (Salas, Sims & Burke, 2005; Day, Gronn, Salas, 2004).

In teams observed during H-ack, one feature that emerged in all groups is adaptability, i.e. the ability to adjust strategies based on information gathered from the environment. In the majority of teams were also observed team orientation and mutual performance monitoring behaviors. In six out of eight groups were detected back-up behaviors, i.e. assisting team members, and active leadership.

Adaptability is essential in innovative events like H-acks in which who is able to better interpret requests and ideas given by the company and mentors wins, for this is a common characteristic to every team. Without adaptability, teams at H-acks have no reason to exist. The team orientation and the mutual performance monitoring behaviors are just as important, but are more complicated to obtain between groups of strangers formed randomly and working together for only 24 hours. Many teams are able to adopt the right attitude and to make an effort in order to have these two aspects of the team, however due to the randomness in the formation of the team often it does not depend on individual members, but rather on the successful combination of compatible characters in the team. The same randomness element applies even more to back-up behaviors and active leadership. A member feels free to assign tasks and motivate his teammates or considers all members in the discussion if a good relationship between the members has been established and if there are no elements of the group that impose themselves excessively on others. Any negative attitudes that hinder the emergence of these features are not detectable during the formation of the team, but come up only later when it is too late to change the team. Being a temporary team behavior the most common attitude is not to stifle negative attitudes, but rather to endure knowing that after 24 hours everything will be over.

Observers, however, have noted an interesting aspect present in all groups: despite team members did not know each other in depth, mutual trust in teammates' abilities of

others appeared clear. This was probably determined by the type of event: it is assumed that people who decide to spend a weekend working for free on a project try to do their best and put themselves at the disposal of the team to which they belong. This creates an immediate sense of brotherhood and trust between members of the same team who participate having the common goal to win or at least challenge themselves in order to prove themselves and others their skills.

In general, members of those team that demonstrate the majority of the above-described features and, in particular, back-up behaviors and active leadership engaged wholeheartedly in the project and feel a strong sense of group identity and group efficacy. In contrast, members of the other teams, despite the endeavor to complete the job to the best, get worst results because they are disheartened and contribute to the work the bare essentials.

Enough credit to everyone's opinion is given, but, without a real leader, decisions on the project and the tasks are all the result of compromises and incomplete decisions, which is not very fruitful. Some components have less visibility and authority than those with a more powerful character that influence the idea of the group also silencing, always in a kind manner, the others' ideas. After a few hour, only 4-5 people are the real "components" of the group, others work and implement what has been said by others, but do not really contribute to the idea. - Field notes about a group working on Diesel observed during H-ack Fashion

In observed teams, both in those where there were members imposing themselves and in those where space was left to everyone to contribute equally, no conflicts between members arose and confidence in others' abilities was clear.

There is a lot of dialogue and everyone feels free to express her or his opinions freely, except in some moments of tiredness when they sometimes shut one another up, but without malice. "What do you think?" is a question asked frequently and generally in the group space is given to everyone, no one is excluded a priori or not heard. They try to understand on what they all agree,

and then start to build the idea - Field notes about a group working on Roda observed during H-ack Fashion

Team members always leave room for discussion and objections of all members, thus suggesting mutual trust - Field notes about a group working on Diesel observed during H-ack Fashion

The discussion is very open to the ideas of all and there are no strong conflicts, because being most of them colleagues they both knew before how to behave, and do not want to spoil previous relations. - Field notes about a group working on Diesel observed during H-ack Fashion

All team members were aware of the importance of each one's contribution and room for objections and proposals by everybody was always left (see Picture 3.4). What varied between the emotional intelligent groups in which everyone was mindful of other teammates' emotions and groups in which there were individuals that imposed their ideas was how objections and proposals were managed. A more emotionally intelligent group, as we saw in the literature review, pauses to hear out the objection, asks if everyone is completely behind the decision, even if there appeared to be consensus, and tries to incorporate any additional proposal to the idea or to change things that arose objections (Urch Druskat & Wolff, 2001). A team with individuals that impose themselves listen to proposals and objections, but the decision of how and when to act accordingly is taken from a part of the group and not by all members.

The most striking example of this attitude was observed in one of the groups that worked on Kenwood at H-ack Food:

A marketing specialist begins to talk and identify what information they have on products, positioning and target, and what is the problem they face. She also brings different experiences both from both private and working contexts as examples. The others listen and take some notes, but she is the only one speaking for much of the time. Every once in a while a developer intervenes casting doubts and underlining some concepts.

The exchange of opinions is mainly between the marketing specialist and one of the developer. Two other marketing specialists and the other developer make very sporadic interventions, the rest of the group listens in silence. Sometimes the marketing specialist asks the other silent team members their opinion but they, evidently intimidated by the overwhelming nature of her, do not speak so much.

The marketing specialist takes stock of the situation and pin on a billboard all the hints. She is the one choosing what to write down and considering whether the ideas of others are valid or not. One of the marketing specialists comment in a low voice, after having been silenced good-naturedly: "She is not very democratic!"

Not having much space to talk together, the exchange of ideas sometimes happens in couples who separate from the main speech. - Field notes about a group working on Kenwood observed during H-ack Food

The lack of conflict, even in cases like this one, is undoubtedly related to the fact that, as pointed out also in the literature review, the very fact that the interaction is supposed to end within a specific amount of time may be a condition for the acceptance of conflicting interest in the team (Lundin & Soderholm, 1995). Moreover, team members are so focused on the completion of the project in a short time that they have no interest in discussing unnecessarily with teammates, losing precious energy and diverting attention from the final goal.

In conclusion, teams participating in H-acks, being driven by a common goal to create an innovative idea in 24 hours to respond to the needs of a company, have a unique balance almost unrepeatable in other situations: they have a lot of mutual trust, are very open to dialogue a behavior that allows not to have internal conflicts, and appear very close to each other so as to remain always together not only when they work, but also when they eat and participate in presentations and workshops.



Picture 3.4: Team members listening to each other during H-ack Fashion, November 2014

3.1.2 Brainstorming and idea generation

The birth of an innovative and disruptive idea is the main purpose of H-acks. As previously said, participating companies are turning to bright young people to solve a problem or answer a need in an unconventional way. For this reason, brainstorming and idea creation take much of the time of teams at H-acks. Observed teams brainstormed for great part of Saturday afternoon and started working on the idea and developing the solution just in the late afternoon or at night. Ideas in any case underwent constant changes in the course of the event until a few hours before the delivery of the project. Observed teams had different dynamics from one another at this stage, especially in the brainstorming phase more than in the later stage of idea creation, , i.e in the analysis of the ideas discussed to reach a single final idea. Nevertheless, it is possible to identify some common paths of behavior.

All teams, even if in a different form, seemed to follow the golden rules for running effective brainstorms already presented in the literature review (Column Five, 2014; Infinite Innovations, “Rules of Brainstorming”, 2014; Sutton, 2006).

Even just for a coffee together or for a short period, all observed groups moved from the workspace at some point of brainstorming. Some found the table for their group to work, left their belongings there and had a coffee break all together; others exited designated workrooms and sat in the garden, both on the ground and on tables outside; finally, some others began to brainstorm at the work table and then moved to another place to have lunch and continued brainstorming there (See Picture 3.5).



Picture 3.5: Teams brainstorming during H-ack Food and H-ack Fashion, October and November 2014

Being very vast the time span occupied by the brainstorming and the idea creation phases, each team changed their working position at least twice. Team members throughout the brainstorming stage eliminated all possible distractions and disconnected from the rest of the world, using phones, computers or tablets exclusively to search information about the company or existing technologies, but never to use social networks, mail or other not project-related programs.

Secondly, there was always at least one person taking notes on the ideas that emerged. In some cases, a single schema was created for the whole group during the brainstorming which was then refined during the following phase, in others several people took notes and, in the creation of the initial idea, all collected information were combined in one final diagram summarizing the idea. All groups use many graphical representations both during brainstorming and idea creation, in some cases also already codified one, e.g. business model canvas (see Picture 3.6).

The teams wrote down all the ideas that emerged from brainstorming, even those that seemed unrealistic, ridiculous or exaggerated. During the brainstorming teams tried to collect a large amount of ideas by all members of the group or at least by most of them. The ideas were explained in an essential way and the essence of them was transcribed in a few key words, in order to compare them with all others at the end and eventually deepen the most interesting ones.

In most cases, team members had read the briefs of the participating companies before the event, already forming thoughts on possible solutions to implement. The reasoning that was done within the group during brainstorming was simply a way to combine all the ideas had by team members during the individual reading of company's presentations. All groups, however, during the brainstorming analyzed closely together the material containing the brief given by the company and the notes taken during business presentations at the beginning of the event.

This analysis was carried out by a single person who read aloud for all the briefs and summarized what had been said by the representatives of the companies, with the possible addition of further consideration by the other team members, or by each team member reading briefs on their own and explaining the aspects emerged from the presentation in his or her opinion to the group.



Picture 3.6: Graphical representations of ideas at H-ack Food and H-ack Travel, April and October 2014

An interesting aspect that emerged in the stages of brainstorming and idea creation was that those conducting this part were mainly marketing specialists. One or more marketing specialists in most of the observed groups took the floor to analyze companies' requirements and other technical aspects, such as target market, target consumers, or what was done by the company or by other companies in regards to the subject of analysis. A key role in brainstorming was played by marketing specialists who analyzed the contest in which to insert the idea and led the process, while a more technical role was covered by developers involved to comment on the technical feasibility or present new technologies that could be useful to the project, especially in the phase of idea creation. Designers contributed with their ideas, but only in one of the eight observed teams the designer had a major role in determining how to proceed to brainstorm, in other cases marketing specialists were always the one to emerge.

This is what the designer told us when we interviewed him:

“The idea came up following a collaborative process that is the Edward de Bono's Six Thinking Hats method. He has divided the phases of the creative process, there is the analysis phase, the phase where you have to send forth everything that goes through your head, without others criticize, then the critical phase, the creative phase, etc. So each one took out ideas. It is a technique I [the designer] suggested being that I read several books on design methodologies and team work. This was a fairly easy technique and with whom I have already had good results. It was not applied in a strict way being that the time was not enough. Without a path to follow might happen, as has happened at times here, that you go to much in depth, wasting a lot of time. This should help to give a little timing and rationalize the time that is short.” - Interview to a group working on Rigoni di Asiago observed during H-ack Food

Finally, some groups before starting the brainstorming decided to speak personally with representatives of companies (See Picture 3.7), both to decide on which company to work and to better understand what the company expected from them.

The team goes at the company stand and speak with a representative to better understand how products in general work and, in particular the one on which they will work. They express doubts and try to understand what the company wants from them. - Field notes about a group working on Kenwood observed during H-ack Food

“We have asked information before starting to develop the idea both to H-Farm mentors and the company. This is a cunningness to do in order to hit the target right away, because if you are provided with two such people, who are the ones that raised the issue, it is clear that being in contact with them is essential. Interacting with them undoubtedly addressed us better, making us focusing even better on the objective.”- Interview to a group working on Kenwood observed during H-ack Food

Before starting to work they speak with the company to better understand how Miroglio Group work and especially what its different divisions do, and what solutions have been already implemented. They also ask for working materials they need to develop the project (e.g. logo vector)- Field notes about a group working on Miroglio Textile observed during H-ack Fashion



Picture 3.7: Teams talking with Giovanni Bonotto at H-ack Fashion, November 2014

Some observed groups, in fact, once formed had not yet clear which company they would have work for and spent part of the brainstorming proposing ideas and trying to understand to which company they might best suit.

Once the brainstorming ended, the idea creation phase began. Teams revised what emerged from brainstorming and democratically decided which aspects to develop and what to ignore. The final idea was forged from the combination of various elements proposed by several members of the group and consequently it was not possible to indicate a sole author of the idea, since everyone contributed equally.

“The idea came up thanks to the contribution of all of us. We brainstormed a lot. We have not analyzed much the market anyway, because there are no competitors and consumer are not yet defined. They want to create a new type of consumer, precisely.” - Interview to a group working on Bonotto Editions observed during H-ack Fashion

“The idea came through the reading of the company brief and through discussion on the topic of how to help Miroglio use the new technology. It was all the result of a discussion among all team members. Maybe someone has made a major contribution, but we all participated somehow.” - Interview to a group working on Miroglio Textile during H-ack Fashion

“The idea came from brainstorming among everyone, everyone put an element. We discussed it for a long time because we did not understand how to deal with it not having a developer or a designer in the group. In addition, the brief from Bonotto was very particular and focused on originality. It was not easy for us. We have not been able to get inspiration from any previous idea because, as I said, the brief was not on an issue that might had been faced by another company before, given the peculiarities of the Bonotto Group.” - Interview to a group working on Bonotto Editions during H-ack Fashion

In the event that a part of the team knew already or had a clear idea about the project to be submitted, before the beginning of the H-ack, the brainstorming might take a different structure. In some of the groups observed or interviewed a part of the group had already thought about the idea to develop together, so they just presented the idea to other members of the group which then suggested some changes.

Four team members (three marketing specialists and a designer, who knew each other before and came together at the H-ack) on Friday night, before the event, talked about companies' briefs and developed three tentative ideas for three different companies, then on Saturday morning they have discarded two of these, after presentations.

The initial idea was to organize a contest between designers and the other team members, who joined the initial group, liked it. The two designers and the developer admitted that they liked the idea and did not discuss too much because they trusted others and preferred to only develop the product according to others' directions. The girl from Newcastle who works for Miroglio Fashion as designer made a point about the importance of speed of design delivery for the needs of designers and, according to this, the initial concept of the idea was rearranged. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

"The other team members already had a basic idea that was a way to take advantage of what they do in their startup, so they applied what they had already developed to this specific case. The initial idea was developed by them and we then added insights. Although we, as well, came up with a similar idea, talking about the company brief and exchanging opinions before the event." - Interview to a group working on Nescafé during H-ack Food

In other cases, the initial idea was improved or developed by the team after it was presented by a single person.

"The idea was given initially by a marketing specialist and then we have reasoned together trying to introduce the interactive and technological aspects that are the ones asked by the companies in this context." - Interview to a group working on Roda during H-ack Fashion

"The boy that is not here now had an idea that we liked. We have defined it and worked on it according to our roles. To the initial idea then each of us has added something." - Interview to a group working on Diesel during H-ack Fashion

"We made a research on the company before, on how it worked, on what kind of business it had, etc. From the basic idea of a girl then we have added or removed elements."- Interview to a group working on Miroglio Textile during H-ack Fashion

In the event that there was not an initial idea proposed by someone, of course, brainstorming was a much bigger part of the working time of the team. In any case, however, all teams performed an analysis of the company, of its needs, and of the context in which the idea would have been inserted (target market, potential customers, ideas already developed and/or competitors), to which followed a more or less long brainstorming.

To summarize, the initial idea could be introduced by a single person, by some members of the team, or by the entire team after a long brainstorming, but the final idea developed was still built on the inputs of the whole team.

Once having agreed on the final idea, teams tried to understand what are the most important aspects to focus on, both in the presentation of the product at the end of the event, and in the creation of a prototype or a mock-up version of the solution.

As mentioned in the literature review regarding the environment of innovation and startups, the key to success is to design the simplest possible thing to solve the problem encountered or posed by the company (Infinite Innovations, "Running the session itself", 2014; Graham, 2009).

"The key is to channel well energy to get to the end with something concrete and well-made, do not try to do too many things. You have three minutes in the final pitch and you have to present a good idea, in a clear way."- Interview to a group working on Danone Vitasnella during H-ack Food

Teams sought to summarize their idea in a few words so that the potential of the project could appear clear in the three-minute final presentation (see Picture 3.8). They concentrated on the three critical components, already mentioned in the theory used in the start-up context: the objective of the solution; the scope of the business, and the

competitive advantage (Collis & Rukstad, 2008). These three aspects were clear in all the presentations that were developed by teams at H-acks.

Observed team delineated more and more precisely the idea over time. An important role in doing this was played by the interaction of the team with the mentor of H-Farm and companies' representatives.



Picture 3.8: A team member summarizing the idea during H-ack Fashion, November 2014

In dealing with people external to the team, the final idea underwent changes, especially when the so-called “gym pitch” took place in the late afternoon on Saturday. In this occasion, the mentors of H-Farm together with representatives of the companies stopped by the tables where teams were working to listen to an anticipation of the presentation of the idea they were developing. The observed teams exchanged opinions with the company on issues related to its brief, while the team received from mentors of H-Farm concrete guidance on how to better present the idea and to individuate the most significant aspects of it. In rare cases, teams also discussed the idea with other people external to the team, belonging to the contest of H-Farm, but without a specific role in the event.

At dinner, the group, queuing to take pizza, is a bit demoralized by the critics received during gym pitch, but still continues to think about the idea. They call into question everything, and they want to start from scratch. Then they come back to the workspace and hang a paper sheet on the wall to compare the old project and new ideas graphically. (...) The turning point occurs when a person external to the group, a developer who was there by chance, was requested opinions and gave feedbacks to the state of the idea at that time, making a significant contribution. - Field notes about a group working on Roda observed during H-ack Fashion

The interaction with the company and with mentors (see Picture 3.9) always led to somehow change the initial idea, sometimes radically, others more mildly, inducing solely the reduction of the concepts to focus on, as well as the effective development of some elements discussed more superficially.

Mentors emphasize that the seven points identified by the group are too many and that they would not have time to develop everything or to present all of them. Points are reduced and the team focus on fewer things, those considered essential. - Field notes about a group working on Kenwood observed during H-ack Food

At approximately 7 pm, the team consult H-Farm mentors to get suggestions to perfect the idea. The leader exposes the idea and also other team members interact with mentors. The indications are very useful and a mentor also makes a sketch of the idea to be clearer. The leaders actively interact with him and there is an equal exchange. After the feedback, the team discusses the received insights and modifies some elements of the idea. - Field notes about a group working on Rigoni di Asiago observed during H-ack Food

After the gym pitch, the idea is put into question because of what was said by the mentor and the company. In fact, feedbacks emphasized that what was developed by the team had been done already and was not innovative enough. The team reviews everything and restarts almost from scratch. - Field notes about a group working on Roda observed during H-ack Fashion

After having talk to H-Farm mentor and understand to be a little out of the way, the team changes part of the idea accordingly. - Field notes about a group working on Roda observed during H-ack Fashion

“It was fundamental to talk with the company representatives when they came here at the table to talk to us, because they said exactly what they do not wanted. We called them and we presented the idea. The company criticized it and we had to changed it radically. The idea has been addressed much from them because when we talked they made clear what they wanted or not and we changed the idea accordingly. They wanted a disruptive solution, not something that was already developed.” - Interview to a group working on Bonotto Editions observed during H-ack Fashion

“The interaction with H-Farm mentors and with the company has helped us a lot. (...) The brand, in particular, gave us a lot of suggestions. Yesterday afternoon there was a moment of crisis, after a roaring start there have been problems and we were stuck. This fortunately coincided with the time when the mentors and the company arrived to our table and helped us figure out how to develop the idea and what to discard. They gave some tips in simple words and these have made it possible to build a good idea. We also addressed them the right questions. When they came for the gym pitch, having put into practice very well what they had said earlier in the afternoon, we left them very satisfied. The girl working for Nescafé was impressed that we had followed her advice so well and she complimented us.” - Interview to a group working on Nescafé during H-ack Food



Picture 3.9: Teams interacting with mentors and company's representatives during informal moments and gym pitch (center) at H-ack Food and H-ack Fashion , October and November 2014

The process adopted by observed teams is very close to the circular process divided into the three phases of inspiration, ideation and implementation adopted by IDEO and described in the literature review (IDEO website; Blank, 2013).

The ideas of teams suffered constantly changes as they received external feedback and as the idea was analyzed within the group, as well as in design thinking. Projects, in fact, looped back through the so-called “inspiration” and “ideation” phases more than once as ideas were refined.

All the observed teams focused on the consumer needs and the obtained feedbacks from the company, an aspect common to the processes presented in the literature review, and used in the design thinking method, as well as in the lean method. The consumer point of view is central because teams, as they are not working within the company, were made up of real consumers of products and services subject to analysis and improvement during H-acks.

Teams at H-acks at H-Farm can be defined as open systems which can only exist by exchanging materials with their environment. Ideas, in fact, arise mainly from an external stimulus, the company's brief, which is then integrated into the work of the team, reworked within the group, producing this way an output.

Every team, in doing so had some peculiarities, nevertheless procedures already established in the context of business, innovation and startups were often followed and the final project was the result of the continuous interaction between all team members and external figures competent in different areas.

3.1.3 Leadership

Each team working on a project usually tries to identify a leader to serve as a reference point in interactions with external individuals and to facilitate the interaction within the group, coordinating the work of the members, and setting targets. The leader may be appointed by hierarchical rules, by external actors, by team members, or emerge spontaneously. In self-managing groups, like the ones formed during H-acks, no member is formally appointed as the leader, instead, the group members can assume roles that are flexible and dynamic, so that any member can provide leadership on a specific task, or one or more members can exhibit leadership emergence. As mentioned in the literature review, leadership emergence represents the degree to which a person who is not in a formal position of authority influences the other members of a group (Côté et al., 2010).

For what concerns the groups observed during H-ack Food and H-ack Fashion, observers have always identified one or two members of the group that covered the role of leaders. Leaders did not always appear clear from the start, in some cases they became clear over time or clearly emerged only after a moment of crisis in which it was therefore necessary for someone to take control of the situation.

In some teams it was clear from the beginning who was the leader:

The leader is clear from the outset, she is the one speaking most of the time, and deciding how to proceed. - Field notes about a group working on Kenwood observed during H-ack Food

The leader is clear from the very beginning. He is a marketing specialist. He is the first to take the floor, and to summarize the basic concept that he developed the previous evening with other team members. During the H-ack, he is the one that lists things to do, interacts with the mentor and the company and distributes tasks. Even in the developing of the idea the leader is very present, asks others' point of view, exchanges opinions and verify what all team members do. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

It is clear enough from the start, who is the leader. She [the leader] takes stock of the situation but still leaves room for others to intervene. Probably her diplomatic training is important in this. She worries about other team members trying to get food and drinks in first person without delegating. She writes and/or draws the key points in a scheme of ideas. She writes the questions to ask the employer. The team uses her tools (computer, paper, pens,...) and turn to her to organize the work. She also played the most important role of the day: talking to the entrepreneur. - Field notes about a group working on Bonotto Editions observed during H-ack Fashion

In other teams, however, the leader emerged in the course of time or after a turning point:

An unquestioned leader did not appear immediately clear. At first a marketing girl spoke a lot, and the designer was the one who invited to recap. At a certain point, the designer and the developer alternated themselves talking. During the H-ack they are the ones who emerge as leaders alternating and dealing with the aspects of which each one is competent. - Field notes about a group working on Rigoni di Asiago observed during H-ack Food

It does not seem that there is a leader from the very beginning. There are two people that take more decisions than others, but the interaction among team members is very democratic. - Field notes about a group working on Bonotto Editions observed during H-ack Fashion

It is not clear right away who the leader is, but only at a later time. Initially, three persons are dominating more the brainstorming, but at some point is the marketing specialist who takes charge of the situation and guides the group toward a more complete idea. - Field notes about a group working on Diesel observed during H-ack Fashion

The leader is not immediately clear, emerges slowly and leaves room for all in a very democratic discussion. The leader is the one who quietly guide the choices and the group toward the final idea. He is the one who created the group, the glue holding the team together, and the one who leads the group to create a new idea when the company emphasizes that their idea was not sufficiently innovative. - Field notes about a group working on Roda observed during H-ack Fashion

Around 5 pm the idea takes shape and the main individuals to which others address when difficulties emerge are a designer and a marketing specialist, even though everyone contributes to the decisions to be taken on the work organization. The method is proposal-judgement. All team members are on the same level. More than being a leader, the designer and the marketing specialist are the most active and convinced of their own ideas. They are the most able to influence the project, with discreet authority, only if, however, the basis of what they say is shared by all others. After a while, the marketing specialist is the one that is recognized as a leader of the group. He is the one who takes hold of the situation and guide others, when in the gym pitch the idea is criticized. The marketing specialist will also be the one who will present the idea at the end of the event. - Field notes about a group working on Diesel observed during H-ack Fashion

In two out of eight teams emerged two leaders that alternated equally in leading the team, in other teams there was just a single leader. The team leader was the one who usually had an important role in the creation of the final idea, either because he proposed it, or because he led the brainstorming, summarizing all the ideas and stimulating the contribution of all. In interacting with the company or the mentor of H-Farm, leaders usually were the ones bringing group's requests and talking more. Consequently, being the person in the group with the clearest idea of the developed solution, the leader in most teams did the tentative presentation of the idea on Saturday evening ("gym pitch"), and the final presentation of the product on Sunday morning.

The leaders of the observed teams were a large majority of men (six out of ten teams) and marketing specialists (among all leaders seven were marketing specialist, two developers and only one designer). The prevalence of male leaders is in line with what is described in the theory, according to which men are still more likely to emerge as leaders in group situations than women, and women have more chances of emerging as leaders only when they are perceived as experts (Kent & Moss, 1994). It appears evident then, with regard to the role, that the obtained training and experience led team members who emerged as leaders to have a real attitude for the management of a team, recognized in some way by teammates. In fact, when we asked the groups the reason why they chose their leader, during the interviews, the received answers indicated three main reasons: knowledge of the field on which the team was working; technical knowledge; or personality traits.

“The leader we chose knew the Fashion sector. Additionally, he is already a leader because he has a company. He also has knowledge of how H-acks works and how to manage them. So we went on the safe side. (...) The choice of the leader is crucial, we chose him because he was the one who could best manage the team, and, when necessary, scold us. Not to mention that we trust him to deal with the final presentation and to give voice to our idea.” - Interview to a group working on Miroglio Nextile observed during H-ack Fashion

“She works as a strategist, so she is accustomed to develop ideas and projects and make presentations, so she led us a little driven. She had the skills to do so and knew how to do it. She also had expertise in fashion and did an internships in H-Farm, so she has a good knowledge of the brand strategy.” - Interview to a group working on Diesel observed during H-ack Fashion

“We have chosen our leader for his technical skills, although he was not an expert in the Food sector specifically” – Interview to a group working on Rigoni di Asiago observed during H-ack Food

“We chose him as leader, first of all, because he is a Nescafé consumer, secondly, he is the founder of a startup that could integrate well with the needs of Nescafé, and finally he has more experience [in the start-up context and in innovation]. It was a natural thing. (...) And then it was something related to his strong personality as well.” – Interview to a group working on Nescafé during H-ack Food

“He was the one who had the idea and that tomorrow will present it, he also has a start up and has the technical skills to say what we can or can not do. He is a complete leader. He has personality and skills, but is very open to listen and talk with us.” – Interview to a group working on Diesel during H-ack Fashion

“He is the one with the strongest personality and the most extroverted. He also has a good personality and, even with Bonotto, he was the one who handled the questions and the dialogue.” – Interview to a group working on Bonotto Editions observed during H-ack Fashion

In most cases, however, the leader did not impose excessively his or her opinion and left room for all members of the group in the discussion. Leaders were almost always supported by other people with complementary skills who took care of the aspects for which they were competent, e.g. a marketing specialist could give the responsibility of the technical aspects of the idea to a developer who runs the subgroup that took care of that aspect; or the leading developer might put in charge of the market analysis a marketing specialist and of the coordination of the creative aspects a designer.

Once the idea is defined, the leader (marketing specialist) that handles the presentation and aesthetic of the app (photos and content), is helped by a developer who has more technical knowledge and coordinates the other developer in the development. - Field notes about a group working on Kenwood observed during H-ack Food

The leader, with the occasional intervention of one of the others that developed the idea, is the one to give indications, but others are quite self-managed in

dealing with various aspects in which they are competent. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

There is a leader, but she leaves others express their opinions. The two strongest personalities, a marketing specialist and a developer, guide the group, but the final decision is taken by the leader (marketing specialist). - Field notes about a group working on Diesel observed during H-ack Fashion

Besides the leader (marketing specialist) who is the one that always has the last say, there is a designer who also leads the group in a few moments. Furthermore, a third component (developer) takes the responsibility to find technical solutions for the development of the idea. - Field notes about a group working on Diesel observed during H-ack Fashion

As seen in the literature review, shared leadership is likely to be more effective when team members have a high level of task competence, when a task is relatively complex, and when task interdependence is high (Carson et al., 2007). These features were undoubtedly present in teams participating to H-acks: leaders were, in fact, supported by people with complementary skills in order to have the highest possible level of expertise in each area of work, and the aim of producing a solution as complete as possible in 24 hours is undoubtedly complex and characterized by strong interdependence within the team.

Leadership emergence in small groups, according to some researches is closely related to emotional intelligence, as stated in the literature review (Wolff, Pescosolido & Urch Druskat, 2002; Côté et al., 2010; Goleman, 1996). In the ethnographic study, observers tried to identify the “Big Five” personality traits of the theoretical model to predict the emergence of a leader in a group and the leadership effectiveness (Judge et al., 2002). The dimensions comprising the model were neuroticism, i.e. poor emotional adjustment; extraversion, i.e. the tendency to be sociable; openness to experience, i.e. the disposition to be nonconforming, imaginative and autonomous; agreeableness, i.e. being trusting and caring; and conscientiousness, i.e. the propensity to be organized and self-

disciplined (Judge et al., 2002). Every trait was positively or negatively related to leadership emergence and effectiveness (Judge et al., 2002).

The leaders of teams observed during Hack all showed extroversion, openness to experience and conscientiousness, most of them also manifested agreeableness. Only some leaders demonstrated brief moments of neuroticism, expressing anxiety, insecurity, or hostility, but these transitory moments were legitimate in a situation where the stress was high and people were sleep deprived. Leaders, in general, seemed to control their emotions well and to have a good emotional regulation.

It is important to highlight that previous researches had identified extraversion as the trait most consistently related to leadership. After extraversion, conscientiousness and openness to experience were the strongest indicators of leadership. Finally, neuroticism was considered as negatively related to leadership effectiveness, while agreeableness could be both a positive or negative indicator of leadership (Judge et al., 2002).

The leaders of the observed teams actually demonstrate the necessary features to emerge and to be effective leaders.

The comments made by the observers on the character of the leaders have been confirmed almost completely by the results of the Myers-Briggs tests administered to leaders at the end of the event. In fact, there are researches demonstrating the correlation between the Big Five personality traits and the four dimensions in the Myers-Briggs Type Indicator (MBTI) assessment. In particular, extraversion corresponds to extraversion in the extraversion-introversion (E-I) scale; openness to experience corresponds to intuition in the sensing-intuition (S-N) scale; agreeableness corresponds to feeling in the thinking-feeling (T-F) scale; and, finally, conscientiousness corresponds to judging in the judging-perceiving (J-P) scale (Harvey, Murry & Markham, 1995).

Among the sixteen possible categories to which people can be assigned, based on the score in each of the four scales, leaders of observed teams always corresponded to only three types: ENFJ (4 leaders out of 10), ENFP (4 out of 10), and ENTJ (2 out of 10). As you can easily see all the leaders were characterized by extraversion (E) and intuition (N), corresponding to extraversion and openness to experience traits in the Big Five model. Two types of personality (ENFJ and ENFP) had a propensity towards feeling (F), coinciding to agreeableness, while two others (ENFJ and ENTJ) in the judging-perceiving

(J-P) scales showed the character J corresponding to conscientiousness, in the Big Five model.

It is important to remember that leaders tested were only 10, all the leaders emerged in the observed team, a number too low to be statistically relevant. However, it is interesting to note that results reinforce what was noted by the observers and written in the field notes about the leader characteristics.

The three types of personalities are reflected in very different behavior and propensities, albeit with some similarities.

Firstly, ENFJs are natural-born leaders, full of passion and charisma. Forming around two percent of the population, this personality type is typical of politicians, coaches and teachers, who reach out and inspire others to achieve and to do good in the world. ENFJ personality is the one of the perfect emotional intelligent leader, having all the characteristics identified by research as suitable for leadership emergence and effectiveness (16 personalities website - ENFJ).

ENFJs' desire to assist and cooperate with people is clearly evident as they build a work environment where everyone can feel comfortable expressing their opinions and suggestions, working together to develop win-win situations that get the job done. ENFJs' tolerance, open-mindedness and easy sociability make it easy for them to relate to other people (16 personalities website - ENFJ).

While perfectly capable as subordinates and peers, ENFJs' true calling, where their capacity for insightful and inspiring communication and sensitivity to the needs of others really shows, is in managing teams. As leaders, ENFJs combine their skill in recognizing individual motivations with their natural charisma not to only push their teams and projects forward, but to influence others making their teams want to push forward. ENFJs' end goal is always to get done what they set out to do in a way that leaves everyone involved satisfied with their roles and the results they achieved together (16 personalities website - ENFJ).

Secondly, the ENFP personality is a true free spirit. These charming, curious, energetic and enthusiastic people who enjoy the social and emotional connections they make with others, form about the 7% of the population and are difficult not to noticed (16 personalities website - ENFP).

People with the ENFP personality type possess warmth, creativity, and an open-mindedness that makes them excellent listeners, able to analyze and understand others' perspectives effortlessly. These qualities make them unbeatable in innovating and boosting morale. In fact, brainstorming among equals is ENFPs' forte, and they listen to different viewpoints and suggestions not just with tolerance, but genuine excitement (16 personalities website – ENFP).

ENFPs are fiercely independent, and much more than stability and security, they crave creativity and freedom, which lead them not to be able to withstand heavy hierarchy and bureaucracy, and this is most evident when they take on the role of manager or leader. As managers, ENFP personalities behave much like they do as colleagues, establishing real friendships, and using their broad popularity to inspire and motivate, working alongside other people, rather than imposing something on others. ENFPs will tend to believe in the concept of intrinsic motivation, the idea that things are worth doing for their own sake, not because of some convoluted system of punishments and rewards. Unfortunately, not everyone buys this philosophy which makes challenging for them those rare moments when a reprimand is simply necessary. But ENFPs' capacity for adjusting their communication to most any style will always shine through, helping to smooth things over and adapt to the needs of their team.

Few personality types are as creative and charismatic as ENFPs. Known for their idealism and enthusiasm, ENFPs are good at dealing with unexpected challenges and brightening the lives of those around them. ENFPs' imagination is invaluable in many areas (16 personalities website – ENFP).

Finally, people with ENTJ personality type embody the gifts of charisma and confidence, and project authority in a way that draws crowds together behind a common goal. ENTJs are characterized by an often ruthless level of rationality, using their drive, determination and sharp minds to achieve whatever end they have set for themselves (16 personalities website – ENTJ)

People with this personality make up only three percent of the population. Their love for challenges, big or small, and their firm conviction that, given enough time and resources, they can achieve any goal, make them brilliant entrepreneurs. Their ability to think strategically and hold a long-term focus while executing each step of their plans with

determination and precision makes them powerful business leaders. At the negotiating table, ENTJs are dominant, relentless, and unforgiving (16 personalities website – ENTJ). Emotional expression is not their strong suit, but because of their extroverted nature, ENTJs' distance from their emotions is especially public, and felt directly by a much broader swath of people. Especially in a professional environment, ENTJs will simply crush the sensitivities of those they view as inefficient, incompetent or lazy. To people with the ENTJ personality type, emotional displays are displays of weakness, and it is easy to make enemies with this approach. If ENTJs are able to combine an emotionally healthy focus alongside their many strengths, they will be rewarded with deep, satisfying relationships and all the challenging victories they can handle (16 personalities website – ENTJ).

No other personality type is better suited than ENTJs to be the respected leader of an organization or team, and no other personality type enjoys it quite so much. Their efficiency and clear communication are valued, their leadership is admired, and their ability to simply get things done is unrivaled. People with this personality are sociable and greatly enjoy sharing ideas and critiques in their frequent brainstorming sessions (16 personalities website – ENTJ).

ENTJ managers are confident, charismatic communicators, and they communicate but one vision: to get the job done as efficiently as possible, and to the highest standard of quality. They are natural leaders, and their ability to formulate a strategy and to identify the strengths of each member of their teams, incorporating those abilities into their plans so that each individual fills a unique and important role, makes them able motivators (16 personalities website – ENTJ).

In conclusion, there are three types of leaders in the teams observed at H-acks: ENTJ leaders who inspire others with their charisma, give great importance to feelings and opinions of others, but always bring forward their own ideas, involving others in their vision of the world and things; ENFP leaders who are very creative and enthusiastic, but also very empathetic and with poor practical skills, hence unable to impose themselves on others even when it is needed; and ENTJ leaders are characterized by extreme determination and precision, as well as a great capacity to push everyone else right along with them, despite their lack of ability to manage emotions that sometimes leads them to be dominant, cold, stubborn, and arrogant.

All three personalities are very suitable to the innovative context of H-acks, although for different reasons from one another.

Despite the different characters of the leaders, all of them, despite always very present throughout the event, give the possibility to express opinion to everyone and are not despotic at all. In some cases, leaders seem to have an equal role with other members and emerge only in certain specific times when an authoritative person is needed.

The leader is very present and almost never leaves the group. She did not sleep and she is the one who presents the idea both to the mentor and to everyone on Sunday morning. Over time her presence becomes less "overwhelming" and she allows everyone act according to his ability and do his or her part in the project. - Field notes about a group working on Kenwood observed during H-ack Food

Leaders are both very present, but not overly oppressive. They alternate very peacefully and everyone talks about what he knows and respects the other. The developer leader almost never leaves the work table. - Field notes about a group working on Rigoni di Asiago observed during H-ack Food

The leader is very present throughout the event. He is a real reference point for all. At the end of the H-ack he is the one who makes the presentation. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

The leader is always present, but not imposes her opinion and always asks the consent of other team members. - Field notes about a group working on Bonotto Editions observed during H-ack Fashion

The leader emerges towards the end, after that the mentor and the company expressed their doubts about the validity of the idea, during the gym. In time of crisis, the leader takes charge of the situation and leads the group, but he is not particularly oppressing with others. - Field notes about a group working on Roda observed during H-ack Fashion

The leader takes stock of the situation, speaking standing of what are the basic elements of the brief of Diesel and the others who are sitting listen to her. There is also physical dominance of the leader, but she still leaves room to the opinions of all. - Field notes about a group working on Diesel observed during H-ack Fashion

The leader has a quite equal role, tries to be always present in the process of choice on the idea, but let the other free to spontaneously choose to deal with a specific task or another. - Field notes about a group working on Diesel observed during H-ack Fashion

In some cases, the leader is placed in a position so equal as not to be actually perceived as such by all members of the team, even if, from an external point of view, it is clear that he or she is an important guide for the team.

Some groups interviewed and one of the groups observed, in fact, when observers asked them whether in the group had emerged a leader, answered that there was not a leader, while appeared clear that one or more persons in the group had a dominant role in the management of the group and in the development of the idea.

In brief, in the teams participating in H-acks, although there is a fundamental equality among all members, someone leading the group during the event, although not always explicitly, seems to emerge in most cases.

3.1.4 Event experience

The experience that participants make at H-acks is very multifaceted and depends on many factors. From interviews and field notes, however, it appears clear that there are some elements in common to many of the interviewed or observed people.

For most people it was the first time participating in an H-ack, even though some of them had participated in other innovative events, e.g. other hackathons, workshops, or business games.

The impression of those participating for the first time was always positive, despite some criticism at times. The human aspect was often at the center of the comments as a key element to positively live the event (See Picture 3.10).



Picture 3.10: A team chatting and laughing during H-ack Fashion, November 2014

“The good thing is that you create a cohesive team right away, because you have a vision in your mind and want to put it into practice immediately. This is the positive side of the thing: you create a close-knit team basically because you have a common goal. The ultimate objective is precisely your idea or the product that you want to create in a certain way, trying to give everything for that application.

Having a positive experience with the group is easier for those who are more inclined. For the marketers, for example, it is easier to approach people and keep a tight rein on the group, while, maybe, as I have seen here in some groups, developers make a little more effort to relate (...), and designers as well have more difficulties. However, that is rather subjective, but generally the figure of marketing has less relationship difficulties. The interaction is influenced by the role.

It would be better to work with a team of people you know and of which you know the personality traits and their role in the work from the start. Being strangers, however, can help to achieve the goal faster, but you may lose a little creativity or passion. I try to adapt to the situation to reach the goal and then I try not to impose myself, nor in a group of strangers, or in a group of known people. I try to make pass my ideas, without stifling others' ideas, trying to take all pieces and put them together, so as to have a really well built idea."

"I am actually really, really loving it. This is a once in a lifetime experience for myself. I hope I will do another one in my time here in Italy. It is just a really amazing experience. First of all because you get to meet new people, you get to share ideas. If you come up with a good idea it is listened to, it is valued and appreciated, and I think that is sort of what is the point of all this: creating relations, sharing ideas and coming up with something new and innovative." - Interview to a group working on Kenwood observed during H-ack Food

"I already knew how it was, I was informed, I was interested to know a little of the place and the people and do some networking. (...) I was a little disappointed by the organization, being such a cool reality I was not expecting it. This format is an opportunity for us, but also for H-Farm and the companies, in terms of advertising and innovative ideas from which to take inspiration. The point is that I expected a little bit more collaboration from the company. When we called the company representatives, they did not give us many useful information. They have been less present than I expected." - Interview to a group working on Rigoni di Asiago observed during H-ack Food

"I thought to get a lot more stimuli from the outside, instead, living the experience, the stimuli come only from the group. With outside I mean the interaction with the company that has not been that frequent, we went to look for them and they came only once and even when they came they were not very willing to help." - Interview to a group working on Danone Vitasnella observed during H-ack Food

“My first impression is very positive because it potentially gives you the opportunity to do a lot of good things, but at the same time I think it lacks the ability to do a complete job because of the time restriction. The presentations of some companies are sometimes unclear or vague, which makes the job harder, making lose a lot of time.”

“The experience is absolutely inspiring, but they should have better organize the distribution of people in groups or put a maximum number of people for all the roles in order to make more heterogeneous groups in terms of skills.” - Interview to a group working on Nescafé observed during H-ack Food

“I expected it to be less complex, but from what I understand it was the kind of briefs of participating companies that were quite vague and difficult to interpret. The requirements were unclear and generic as not to understand what the brand really wanted. And in 24 hours you could not do much. The experience in general, however, was interesting and stimulating.” - Interview to a group working on Bonotto Editions observed during H-ack Fashion

“The experience is positive for the people that participate. It is a good initiative because it involves people who may not have the opportunity to work with companies like these ones. It is basically a way to exchange opinions following a project, which is a good skill to develop.” - Interview to a group working on Bonotto Editions observed during H-ack Fashion

“It is a nice experience because you get to know new people, interact with other professionals, and test your preparation.”

“It was very interesting for everyone. Especially the exchange of ideas. For example, I do not have to exchange ideas with anyone, working independently, and now having to interact and share decisions with other people is a challenge.” - Interview to a group working on Roda observed during H-ack Fashion

"The experience has been positive. For my hackathon experience, I liked that they have left us free to choose to participate in pitches and workshops or to work on our project. There is little time and it is good to handle it as you want. Instead I would have liked to have more interaction with the companies, perhaps with workshops. If there had been more time, obviously." - Interview to a group working on Diesel observed during H-ack Fashion

"It is a nice format to encounter traditional companies and find innovative ideas. It is useful to experiment an attempt to innovation that could be useful to the Italian industry who needs to innovate according to the modern trends, but starting from its traditional origins. H-Farm is the right place to do so."

"I think is interesting because it is one of the few opportunities for young people to get involved and to finally solve a business problem. What surprised me is that I thought it was more challenging in terms of the timing, but it is very quiet."- Interview to a group working on Roda during H-ack Fashion

"The experience is very positive. I think it is a very challenging environment, an environment where there are also a lot of young guys who have a lot of desire to do. It is a concentrate of ideas and proactive attitude." - Interview to a group working on Miroglio Textile during H-ack Fashion

"If you work all together and there is a nice working environment, the feedback is positive. Everything depends on the team. It's nice, yes, but seeing groups around arguing, I understand that the experience is still influenced by those who are in you group and how you get along with them." - Interview to a group working on Diesel during H-ack Fashion

"It is nice, there is a nice atmosphere. I like it because you can exchange ideas with people studying different things. For example, I did not know anything about marketing, but they made me understand a little how it works and how you have to work. It was interesting." - Interview to a group working on Miroglio Textile during H-ack Fashion

Those who, instead, had already participated in a H-ack said they came mainly to live a stimulating and fun experience again, to meet new people, and to test themselves by developing new skills.

“This is my third H-ack, or second one, not counting the one in Milan [H-ack City, organized by H-Farm, in collaboration with Wired Italy, on April, 12 and 13, 2014]. I came because I feel a little lacking in some aspects of new technologies. Sometimes I do not feel up to date and I come here to keep up.”

“For me, it is the sixth H-ack. This time I did not want to come, but I am here because there is one of my old teammates who I am fond of, but the thing that really drives me is trying by all means to have a chance to be incubated in H-Farm”

“It is my third H-ack. The last one was in Perugia. I promised myself that I would not have fallen into temptation anymore. The work, the exertion, the exhaustion. I have appealed to the more grim apologies, but finally here I am in the middle of my third H-ack, because at the end it is a rare opportunity to grow and learn.” - Interview to a group working on Miroglio Textile observed during H-ack Fashion

“I have participated in another H-ack before and I came back because I had fun and it was a stimulating event.” - Interview to a group working on Bonotto during H-ack Fashion

The expectations of all participants were mainly short-term and, in particular, the reasons expressed in the interviews were mainly curiosity about the event or the environment of H-Farm, the will to network, and the desire to gain experience, and learn new things.

Only a few interviewees answered that they saw the event as an opportunity to find a job at H-Farm or in the companies, or a business idea to develop, founding a startup.

“The reasons that led me to participate were in particular to see this reality, that of H-Farm, and specifically this contest. I wanted to get involved with other people and compete to see also my own value in the labor market. I was curious to see how other people might interpret the company challenge. You can create a solution in your way and see what would be the result.” - Interview to a group working on Kenwood observed during H-ack Food

“First of all, I came here to learn a little bit more about H-Farm, that I had seen online, and wanted to see in person, and then to network. So I was interested indeed in developing a cool project, but it was not the main reason. In addition, I work as a freelance, but I am always looking for new job opportunities.” - Interview to a group working on Kenwood observed during H-ack Food

“For me it was mostly curiosity towards innovation, to see what were the other ideas.”

“To exchange ideas and to get to know a new reality because for me it is the first time here and I was curious about it. Then to see innovative ideas, not only in our group but also in other ones. By the way, the world of Food intrigues me so I also liked seeing concretely what could be the innovation in it.” - Interview to a group working on Danone Vitasnella during H-ack Food

“I wanted to make a new experience and learn more about myself seeing how I can relate with others in sharing a project and putting into practice an idea, which is different than going out with some friends on Saturday night.”

“I wanted to challenge myself and see what I could do in an environment like this where you have to work hard and propose new and innovative ideas, express your idea and put it together with that of others in a common project. Then I have a specific interest in the food and beverage industry.” - Interview to a group working on Nescafé during H-ack Food

“First, I did not do it specifically because it was H-ack Food. I would have participated anyway even if it were another theme. I was more interested in the

experience, then obviously I like the field and this made me more willing to participate. The only expectations that I had were to do something different, to acquire skills and also to try to actually challenge myself. I took it as a gym, not as an opportunity to find work, more than anything else it was to see if in the future this could be an option for me, a road to take, that of startups. The feedback is positive. It was a way to figure out whether to discard or continue on this path and now I consider it as an option for the future.” - Interview to a group working on Nescafé during H-ack Food

“Basically I was led by the curiosity to see how it works, how to work in an environment that is quite innovative, and to work with others, to argue on issues that are not daily. It is one thing that I wanted to try it.”

“I came to understand how it worked and because I saw it as an experience to learn and do something different and practical.” - Interview to a group working on Bonotto during H-ack Fashion

“I was curious about the event and H-Farm, then, I also want to do something new.”

“For me it was also the interest in the fashion industry. I am very passionate and I wanted to see what could be the issues and technologies to use.” - Interview to a group working on Miroglio Textile during H-ack Fashion

“I came to be incubated at H-Farm, but this hope is waning a little, H-ack after H-ack. It is not the first time I participate and neither the first time I win.” - Interview to a group working on Bonotto observed during H-ack Fashion

“I came mainly to do a different experience, to see if there was an interesting idea and then, of course, if it turns out even a job... you will never know given the times we live in.” - Interview to a group working on Diesel observed during H-ack Fashion

“The expectations were to find a job and understand what was behind the rising of a startup. Then, being an hackathon, also understand how to innovate traditional businesses of Made in Italy.” - Interview to a group working on Roda during H-ack Fashion

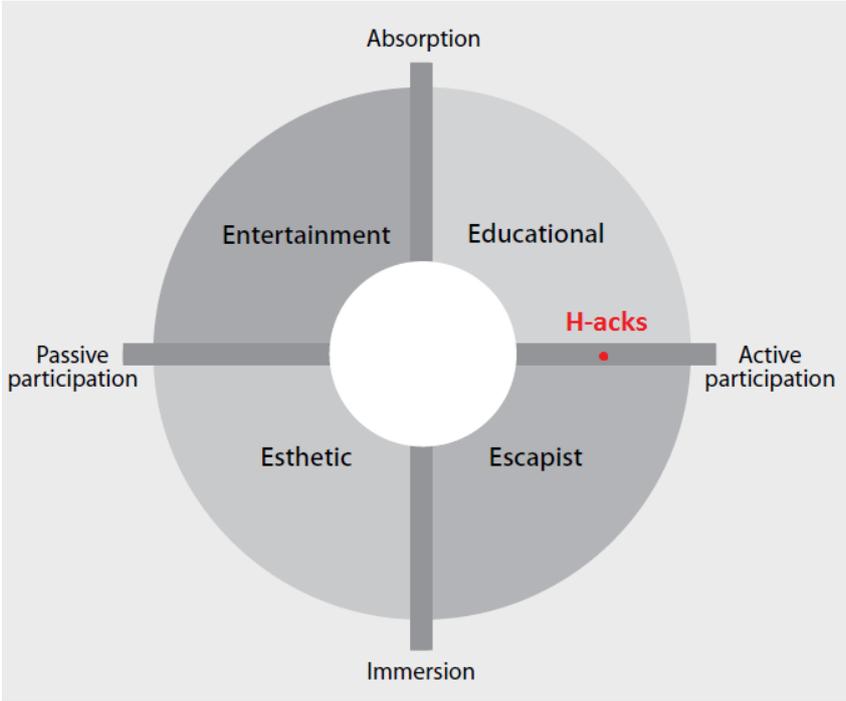
“We came here for a matter of experience, to see what this world might offer. (...)I know just what I have learned at school and this event is a nice way to challenge yourself in a different context, even at the level of competition. And then also to meet new people that is never granted and is always a good thing. Then being that there are various brands it could also be for something in the future.” - Interview to a group working on Miroglio Textile during H-ack Fashion

As we have seen in the literature review, Poulsson and Kale (2004) argued, that for an encounter to be labeled as an experience, one or more of the following sensations and feelings need to be involved: personal relevance, novelty, surprise, learning, and engagement.

The H-acks seem to have all the necessary features to be considered as an experience: for participant the event is personal relevant, novel, quite surprising and engaging, as we can see from the comments. H-acks imply a completely different relationship between both team members and the team and the company; and the informal atmosphere of fraternal cooperation undoubtedly contributes to elicit personal relevance, novelty, surprise, and engagement. As for the learning aspect, during the event there is a two-way interaction between participants and mentors or company representatives requiring both input and feedback from one another, to which is added a dense interaction between all team members from which participants said they learned a lot.

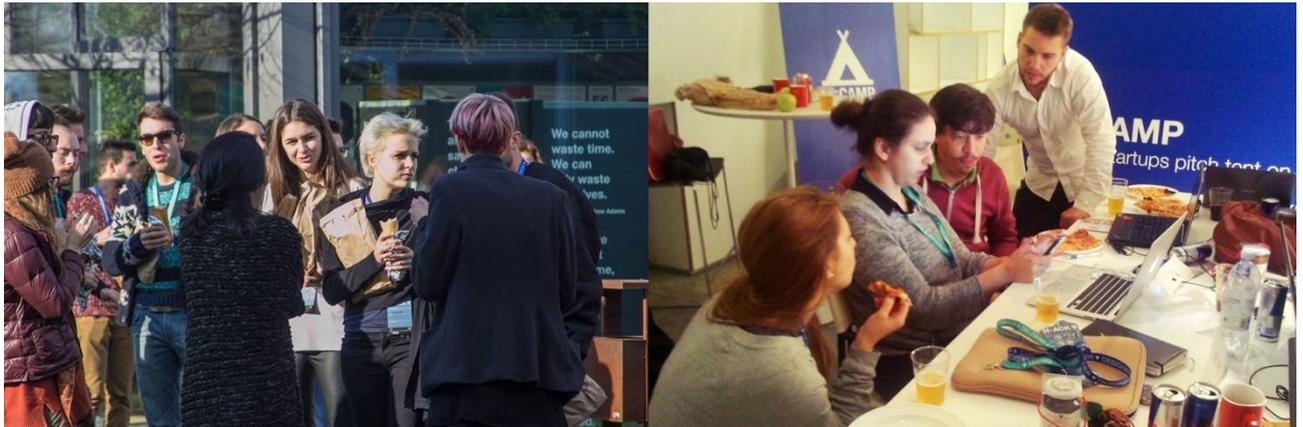
Taking into consideration the elements emerging from the field notes and the interview, it is possible to classify H-acks in the scheme outlined by Pine and Gilmore (1998), named “Four Realms of Experience” and based on individual’s connection with the environment (y axis with absorption vs. immersion) and participation in the experience (x axis with passive vs. active).

H-acks can be classified as a middle way between an educational and an escapist experience (see Picture 3.11), in fact, they require active participation and stimulate participants both mentally and physically, making them immerse in the event. Without participants the event would not exist, and they also are the one determining its success.



Picture 3.11: H-acks in The Four Realms of Experience scheme

Participants were so immersed in the event that did not participate in workshops or presentations, except those useful to their project; they did not stray from the group or from the workplace, except for very short periods; they did not use too much social networks or cell phones; they ate all together, at times at the work table and often continuing to think about the idea to develop; they slept a few hours or nothing; and they almost did not feel the need to eat or go to the bathroom (see Picture 3.12 and Picture 3.13).



Picture 3.12: Team eating and discussing during H-ack Food and H-ack Fashion, October and November 2014

They almost never move away from their table. During the brainstorming they realized that it is time for lunch just because others around them had sandwiches in their hand and still went to eat only after having finished. During lunch, they continued discussing the idea. They did not participate in presentations or night contest. None of them slept, only one in the middle of the night fell asleep for 10 minutes, but he is awakened and he apologized. They left the table just to go to the bathroom. Even for dinner, some team members went take pizza for everyone and they ate, while working. - Field notes about a group working on Kenwood observed during H-ack Food

Team members are always at the table working, except when forming small groups with specific skills that go somewhere else to discuss. The leaders in particular are very present and very interested in the success of the project and are working very hard. The leader (developer) invites not to participate in contests because there is no time. - Field notes about a group working on Rigoni di Asiago observed during H-ack Food

Team members were all present with enough continuity. They moved away from their table especially at first to talk to the company or participate in workshops on printing, always for purposes related to the project. They ate at the table where they worked. Some marketers went to sleep at night not having much to do, while the developer and some designers worked all the time. - Field notes about a group working on Miroglio Textile observed during H-ack Fashion

The group has always been at their table, concentrated on the work. They did not lose time communicating with other groups, reading the newspaper, or looking at their social profiles, or writing messages to friends and family. - Field notes about a group working on Bonotto observed during H-ack Fashion

They were almost always at the working table. They took breaks, but at least one or two people always stayed at the table, working on the project. They seemed sufficiently involved, even if they were one of the first groups (around 3 am) to collect everything and go to sleep for a couple of hours. - Field notes about a group working on Bonotto observed during H-ack Fashion

All, but one, were always together. Even when they eat or go get food, they are together and discuss the project. - Field notes about a group working on Roda observed during H-ack Fashion

"I had actually started to take pictures and share a photo, then we were so busy that I have not had time. I have not been able to take pictures. I usually like to take pictures and share them on Instagram, but, in the first place, I had no time, then it was too dark at night. The only thing I shared was the photo of the table full of coffees and Red Bulls, saying that I was doing a hackathon at H-Farm." - Interview to a group working on Rigoni di Asiago observed during H-ack Food

“Last night [I posted in social networks] a photo. But we were very focused on the idea and its development. Maybe later we will take some more pictures.” - Interview to a group working on Bonotto observed during H-ack Fashion

“I posted something. I posted a status at the beginning of H-ack and then in the evening when we were exhausted, but strangely I have shared no photos or tweets. I was concentrated on the work and I looked the phone few times, just to look for useful things to work. That is strange because I am usually very social media addicted.” - Interview to a group working on Nescafé during H-ack Food



Picture 3.13: A team member working late at night during H-ack Fashion, November 2014

This state of mind, in which participants in H-acks were, was defined by Csikszentmihalyi as “flow state”, as we have seen in the literature review (Csikszentmihalyi 1990, 1997).

In order to reach a flow experience, it is important to have a clear goal and be able to receive immediate feedback during the process, as we have seen happening during H-acks.

In some of comments was also underlined that there was balance between requirements of the task at hand and individual's skill, as that an optimal fit was reached and the project was not too challenging or too easy to do for the teams. Participants have intense concentration and are totally focused on the task, so that time flies and individuals not have enough attention left to monitor how his or her body feels.

The experience at H-acks seemed to show all nine characteristics of the flow state described by Csikszentmihalyi.

The experience of the participants in H-acks is very close to that of the open source groups described in the theoretical part (Lakhani & Panetta, 2007), as far as how each one lived it individually, and has the peculiarity of being focused on the human dimension of interaction, with respect to the motivation that drives to participate.

3.2 Outlines of the long-term effects of H-acks

To enhance the analysis on the H-ack I chose to take into consideration the long-term effects of H-acks on relations between participants, on the development of innovative projects, and on the job prospects of participants.

In order to collect data about it, I administered a total of 10 surveys (see Appendix 5) to participants in six different H-acks after 3 and 6 months from the participation in the event: in particular, for H-ack Fashion 2013 only after 6 months and for H-ack Payment only after 3 months, whereas for H-ack Bank, H-ack Wine, H-ack Travel, and H-ack Auto both after 3 and after 6 months. The questionnaires after three months were administered to a total of 1,042 people, while the ones after 6 months to 1,242 persons. For H-ack Food and H-ack Fashion 2014, instead, having participated directly and having personally observed some groups, I made some of the survey questions during the interviews.

Participants who responded to the questionnaire were a total of 182 for the surveys after three months and 226 for those after 6 months, respectively accounting for 17.5% and 18.2% of all the people who had participated in the events and to which surveys had been sent. Although the sample of people who responded to the survey can not be considered representative of the population of participants in H-acks, the answers collected (see Appendix 6) can still give us a rough idea of what are the long term effects of the events.

Most of those who responded to the survey are not going to develop the idea emerged during the H-ack or, although to a lesser extent, think of doing so maybe in the future. The main reasons that lead to abandon the idea are different job prospects or priorities, or the lack of interest from the company for which they had worked during the event.

Those who, on the contrary, had brought forward the idea in most cases had only developed a business plan, rarely had a beta version of the product or constituted a startup. In any case, the team with which they work often included only a part of the team members with whom they had worked at the H-ack.

As a confirmation of what was seen even in direct observation of the teams, the participants in H-acks stated that they already knew some members of the team they had worked in.

As for the creation of possible working relationships between the participants in the H-ack, it was asked participants, both in the questionnaire and in the interviews, if they would turn to those who have known during the H-ack, a teammate or another person, if they were in need of a developer, a designer, or a marketing specialist. In most cases, participants said they would probably do so.

“Undoubtedly yes. I would collaborate gladly with them again, because I already know their strengths and weaknesses, so that I could better interact in the future.” - Interview to a group working on Kenwood observed during H-ack Food

“It turned to be useful to network from the business point of view, then sure, I would contact them.” - Interview to a group working on Miroglio Textile observed during H-ack Fashion

“Yes, no doubt. We have already collected names and ideas.” - Interview to a group working on Roda observed during H-ack Fashion

“Probably yes, although I have not met many developers. But I do not know. Here there are very young people and maybe they are not so prepared. It is also difficult to understand whether they are good or not, working together just 24 hours.” - Interview to a group working on Bonotto Editions during H-ack Fashion

“I have also talked to some people from my old team at H-ack Wine to create a startup together. They were two developer. Talking together we had an idea of startup and now we are trying to take it forward.”

“No doubt it is a good way to build contacts. When you are working with good people, there is an opportunity to continue the collaboration. In these 24 hours we get to know each other also as individuals. Beyond the role there is a person with whom you can share many interests and it is also nice to build a relationship.” - Interview to a group working on Diesel during H-ack Fashion

Among the participants in H-acks that we interviewed a few had a startup, but we asked them in the interview and to participants in previous H-acks in the survey, if, during the event, they had known interesting professionals for the start-up idea they had previously. In most cases, the responses denoted a desire to learn more about some people they met at the H-ack, to see if they can actually be included within their start-up project. For many, working together 24 hours can be used to create a good understanding with a person, but it is not enough to understand if you can work permanently with him or her.

“Absolutely, that is also what we have done this time. We contacted people we had met at past H-acks to form the group. We do not have a digital startup, but we have companies, both myself and others, and we met interesting professionals that we could integrate into our companies.” - Interview to a group working on Miroglio Textile observd during H-ack Fashion

“Yes, it could be a starting point, then depends on the situation, on what you have to develop. In 24 hours we have not talked much about our backgrounds, we know little about one another. So, yes, I wrote down contacts, but then we will see.” - Interview to a group working on Bonotto Editions observed during H-ack Fashion

Most of those who responded to the survey administered 3 months after the end of the event, instead, said that he did not meet interesting professionals for their start-up idea. This answer may be related to the fact that they did not meet people actually competent, but also by their lack of interest in looking for new people to hire in the startup, as the interviewees of a team have stated during H-ack Food.

“We were not looking to insert people [in our startup], we came only to face the challenge of H-ack. We did not do much networking.” - Interview to a group working on Nescafe during H-ack Food

Finally, as regards the effects from the point of view of working prospects, H-acks do not seem to have great implications in this context.

Participation in H-ack does not arouse participants' interest toward the specific sector of the H-ack they attended, those who participate are already interested in it. The event do not open to the participants job prospects in a new sector, in most cases, it rather seem to bring participants closer to the world of startups.

"I already considered [the sector] before. My perception is unchanged. I have not had the opportunity to understand more about it." - Interview to a group working on Danone Vitasnella during H-ack Food

"The fashion industry is something that I already considered, it is something that I had in my head." - Interview to a group working on Miroglio Textile observed during H-ack Fashion

"I work in a company in the field of fashion, I participated more for personal interest."

"I came here because it was about fashion and I'm developing a project in the fashion field, although there might be other interesting themes for me, apart from fashion." - Interview to a group working on Bonotto Editions observed during H-ack Fashion

"No, we are no closer to the fashion world than before, quite possibly to the world of applications." - Interview to a group working on Roda observed during H-ack Fashion

"I registered at the H-ack because it was on my field of interest. Because it was about fashion!" - Interview to a group working on Diesel observed during H-ack Fashion

“I do not know, I would not focus on the industry, but more on the areas of expertise. I was not interested so much in the sector, I came because I was more interested in how a start-up idea could be created in H-Farm. It might have been on fashion or another industry, it would have been the same for me.” - Interview to a group working on Bonotto Editions during H-ack Fashion

“I liked the fashion industry before and I have not changed my mind on it neither positively nor negatively.” - Interview to a group working on Miroglia Textile during H-ack Fashion

The perception of participating companies and of H-Farm is modified by the informal interaction with these during the event in many cases, but rarely participants said they intended to apply for jobs in one of these contexts, only for the good impression they had during the event. In most cases, participants were already thinking of applying for a job at a company or at H-Farm or were already aware that they were not suitable for them.

“I'm interested in both H-Farm and the company more than before somehow. I am 25, so looking around at all the various companies is normal, it is physiological. Let's say that this event opened up a bit a world to me, but then you have to see the opportunities that the market might give you. So yes, knowing the companies a little more, I could maybe apply for jobs now.” – Interview to a group working on Kenwood observed during H-ack Food

“Actually my perception of H-Farm or the companies has not changed. I knew them already and I have not changed my mind. However for what I want to do I would not go to look for a job in one of the companies, but rather in H-Farm. Even though I do not know if my skills would be suitable.” – Interview to a group working on Rigoni di Asiago observed during H-ack Food

“The judgment that I had is unchanged. I never considered the brand not even for personal consumption, and this leads me not to want to work either inside the company. If you do not believe in a product, in the value of instant coffee, and in the brand, you are not encouraged to apply for jobs.”

“The interaction with the brand made me learn more about the products and introduced me to new products, which I had never tried before. I could be a future consumer, but I do not know if employee too. Nescafé is powerful in the world, but in Italy I think there are really strong limitations due the Italian culture, although this project wants to reach out to our culture, making coffee time a moment of dialogue with someone else and making you drink your coffee alone walking the street with the usual Starbucks cup in a hand. I do not know if it might works, but for limitations of Italy, not of the brand.” - Interview to a group working on Nescafé during H-ack Food

“This experience has brought me closer to the brand. I have always seen Nescafé as a young brand and I did not know it so much. When you are at home you drink mocha coffee, then when you go to university it changes. My roommate to save time was drinking Nescafé and I rather went out without drinking anything than drinking it. But now I appreciate it more, knowing the company here. It caught my attention right from the presentation and I decided it was the brief that I wanted to follow, even if I chose together with my group. This was my first choice. This event brought me closer to the brand and also to Vizi di Gola, I really liked its presentation. For what concerns Kenwood, Rigoni di Asiago and Danone I have not changed the idea I had. For Nescafé I could both become a possible consumer and apply a job after the event.” - Interview to a group working on Nescafé during H-ack Food

“No doubt the idea that I had on Miroglio has improved. Also because I did not know it so well. I knew H-Farm, but not directly. Now I have a work, but in life you never know so, yes, I could apply to work in both [H-Farm and the company], why not.” - Interview to a group working on Miroglio Textile observed during H-ack Fashion

“You definitely get to know more, both on H-Farm and the companies. For example, among the participating companies I knew well only Diesel, but I had never heard the others. Now I keep them more into account.”

“The desire to work for H-Farm, as I said before, there was before and there is even now. Instead, I am more aware of the fact that you can work even for traditional businesses especially if there are creative CEOs and managers with a desire to innovate and that is great to work with them too.” – Interview to a group working on Roda during H-ack Fashion

“The reality of Bonotto is too eccentric, interesting but not to work in it. Not for me, at least.” - Interview to a group working on Bonotto Editions during H-ack Fashion

“No doubt this experience at the level of awareness is very enriching. In terms of understanding how a particular brand works and moves, beyond the fact that you like it or not. It takes a little open-mindedness and willingness to make something different, but it is the best thing to do to understand a brand.”

“Diesel is a strong brand and with defined identity. In the case of H-ack Food, I felt a little disappointment by the brand. I came here with the idea that it was a super company, then analyzing what they had done during the years and talking to them, I saw that they perhaps were weaker than I thought. I understood that there is more than what you see from the outside.” - Interview to a group working on Diesel during H-ack Fashion

“I liked H-Farm. This is undoubtedly a good experience and I love the spirit of groups and the innovation that there is here in H-Farm, then yes, I could come back but just for the events, not to work here.”

“I did not know H-Farm before, I had just heard about it, but now I could consider to also apply for a job here.” - Interview to a group working on Danone Vitasnella during H-ack Food

“Yes [I will apply for a job]. I would have done it anyway, because I already knew the reputation of H-Farm, which events it organizes and how much it invests on innovation and on the future. So I would have applied, but one thing is to have a vague idea or an expectation, based on what you have heard about it or on what you have seen online, another one to live it firsthand. The feedback is more than positive. You are immersed in innovation.” - Interview to a group working on Nescafé during H-ack Food

The major long-term effects that H-acks seem to have are mainly in the relations between participants, on the other hand, as we have seen in the analysis of event experience, most people said they came to the event to network.

Conclusions

Seen the increasing importance for companies to be open to outside ideas and to converse with innovative environments, H-Farm answered this need through a series of events that have been very successful. The H-ack format is an interesting event to bring together companies from traditional Italian sectors of excellence and the innovation brought by the ideas of young professionals and students. This 24-hour non-stop marathon, which includes both teams made up of all typical professionals of a startup, i.e. developers, designers and marketing specialists, and the collaboration between participants and representatives of the companies involved, is an endless source of interesting ideas and disruptive innovation.

The achievement of synergies

An H-ack are advantageous to all parties involved: for H-Farm, it is a different way to identify capable professionals to integrate within the funded startups, as well as possible ideas and team to incubate; for participating companies, this represents a unique opportunity to get many different answers to their real problems; and for participants, it is a remarkable opportunity to acquire new knowledge, to network and to measure their value in the labor market.

The key element of an innovative event, like an H-ack, is synergies that are created during the 24-hour event duration involving all of those present indiscriminately. In fact, companies in the same industry have the opportunity to meet and exchange ideas both among themselves, and with H-Farm startups, while the incubator has a chance to put at the service of the event its technical experience gained over the years, applying it to the different fields of traditional companies. Participants, finally, are inevitably driven by this situation to give their best to face all together in a team of strangers a challenge very different from those faced normally in a working or academic context.

However, with regard to companies, synergies can be positive only if not hindered by the fear of competition that could force firms to share non-strategic projects during the H-ack.

Mutual trust between team members

As for participants in the event, H-acks are very special events in which a positive environment difficult to repeat in a different context is created within teams. In particular, some interesting aspects which deserve to be further discussed and studied emerged from the observation of participants' behavior in the two analyzed H-acks (H-ack Food in October 2014 and H-ack Fashion in November 2014).

As was pointed out in the description of the results of observation, despite the team members did not know each other in depth, mutual trust in teammates' abilities appeared clear. The most likely cause of this behavior is that it is assumed that people who decide to spend a weekend working for free on a project try to do their best and put themselves at the disposal of the team to which they belong. This assumption fosters the creation of trust between all the participants in the event, not only between teammates. It is important to note, however, that the mutual trust between members of the same team might arise from different conditions. In some cases, participants already know some team members and rely on them because they are aware of their strengths and weaknesses before the event, which drive them to work together. In the event that the teammates are met at the H-ack, trust can arise as they work and get to know each other or derive from the fact that they are forced to trust others willy-nilly.

Mutual trust between members is manifested listening to everyone's opinion in a positive way; leaving a lot of freedom to all members to do their job, according to their skills, without being anxious or oppressive; and relying blindly upon individual capabilities.

Participants in H-acks demonstrate back-up and mutual performance monitoring behaviors towards teammates, but never with a negative attitude. Each one deals with an aspect of the project and team members help each other complete the tasks, relying on others, mainly on technical aspects, in the belief that everyone will do his or her best.

Conflict avoidance in teams

Another interesting aspect partially related to mutual trust between the participants is the almost total absence of conflicts within the team. This is undoubtedly related to the very fact that there will be an end to the interaction within a specified time, which may be a condition for the acceptance of conflicting interest in the team, as

pointed out also in the literature review. It is important to note, however, how this behavior can also have negative consequences: team members trust the expertise of others and sometimes are silent because they believe that others' opinions are correct, in other cases, however, the participants do not express their opinion only not to create conflicts, although they disagree.

Team members might prefer not to impose their opinion in order not to waste time and energy creating tensions in the team, but this is a risky behavior that can damage the quality of the final project. By doing so they end up not expressing opinions that could improve the final idea, just for fear of conflicts, and creating a team environment in which only those who have developed the idea feel fully involved in the project, while others do the bare minimum.

Networking and job-market signaling

The dimension of human relations plays a fundamental role within the H-acks, not only for participants, but also for participating companies and H-Farm. Most of the interviewees stated to have registered for the first time at the event or to be back again with the primary purpose of networking. Meeting people with different backgrounds and skills is seen as an opportunity to learn new things, to develop new interests, to know people who share a passion for a particular sector, and to create a wider professional network. Regarding the last point, participants, both in the questionnaire and in the interviews, said that they would probably turn to those who have they met during the H-ack, both teammates and not, if they were in need of a developer, a designer, or a marketing specialist.

Participation in H-acks can be seen, therefore, as a different form of job-market signaling, both to peers and to prospective employers. The very informal environment of the event greatly facilitates peer interaction: people are very eager to get to know other participants and to deal with strangers, so they end up talking about their idea, their work, or their passions with those who are in the queue for the bathroom, in front of the coffee machines, or outside to smoke a cigarette. These random interactions with other participants, as well as those with the teammates, often lead to working collaboration, after the event. Cooperating 24 hours on a project, participants get to know each other a little, see how teammates work and what are their competencies, and exchange contacts.

Even from a short speech, however, participants in H-acks often find common interests or goals that, in some cases, lead them to contact people encountered again.

During H-acks, there is an atmosphere of solidarity and brotherhood among all, participants, companies and mentors, which removes any inhibitions and encourages them to talk to everyone in an informal way. Participants seeking employment can signal very easily their skills both indirectly revealing them through their work, and in a more direct way taking advantage of the unique circumstance to approach prospective employers, talk to them and exchange contacts.

Importance of previous experience and training

The same education credentials which can be used as a signal to peers or companies, indicating a certain level of ability that the individual may possess, are useful in the process of team formation.

When choosing team members, training and subsequent role are undoubtedly characteristics which make an individual more or less attractive. In team forming the most required role is undoubtedly that of the developer, followed by that of the designer. Marketing specialists, being very numerous, are not very sought. In addition, between two members with the same role it is obviously preferred a person who has participated in other H-acks or have previous experience in a professional environment similar to that of the sector of the H-ack, or in innovation. Having someone in the team who has already participated in other H-acks is considered an advantage, as he or she can provide more information about the event, such as how to organize the work, what is appreciated more in an idea, or how to make the presentation. Previous experience in the sector is not considered so much in the process of team formation, but rather in the phase of team organization: a person who has specific knowledge has a say in the process of brainstorming and idea creation, more than other team members.

As partial confirmation of the importance of prior experience in the organizational phase, it was noticed that leaders of the observed teams were a large majority of marketing specialists. This element leads to consider the fact that the obtained training and experience have undoubtedly a key role. Those who emerge as leaders often have experience in the field on which the team was working or technical knowledge, but marketing specialists' education seems to be best suited to manage the

group. Generally, participants who register as marketing specialists show an excellent ability both to frame business needs and issues related to innovation, and to organize the team work to the best.

Team members who emerge as leaders are those with greater communication skills, so leaders are those who in most cases describe the idea during the final presentations on Sunday morning and who manage the phase of brainstorming and idea creation. Leaders are often the ones taking down interesting ideas, inviting all team members to express their opinions and deciding how to brainstorm. In the brainstorming phase it is fundamental the graphical representation of ideas, so that the concept is clear to everybody. Interestingly, teams where fewer people knew each other before the event use more graphical tools to clarify the ideas. On the contrary, teams in which there are more members who already know each other seem to have a way of working that makes shared communication easier and this is imposed indirectly also to the rest of the group.

Importance of company representatives and mentors

The birth of an innovative and disruptive solution is the main purpose of H-acks, the main reason why companies participate in the event, so ideas undergo continuous improvements in the course of the event, until a few hours before the delivery of the project.

Changes to the project come from the constant interaction of the team with the H-Farm mentor and company representatives. Dealing frequently with actors outside the group is crucial to understand the needs of the company to the best and develop a feasible idea, thus increasing the chances of winning.

The role of H-Farm mentors is to give technical information on the project, on how to develop it and on how to present it effectively, taking advantage of the experience gained over the years in supporting startups. H-Farm mentors, when possible, push the team to strive to create innovative solutions in order to bring out, at the end of the event, ideas that are distinguished from one another and also from the products already offered on the market.

The role played by the representatives of the companies is to outline precisely what is the brief that they present and which participants must answer, as well as

providing accurate information about the company. An important premise for the success of the H-ack is that the company brief is very clear to participants. During the interviews participants, and especially those who have participated in more than one H-ack, often emphasized how some presentations were too general and therefore hard to interpret for their team. Talking with those who have participated in more than one H-ack, they also highlighted as generally business presentations which showed a well-defined problem arose solutions much more innovative and different from one another, while, on the contrary, a brief open to different options led to more banal ideas.

The “flow state”

Finally, participants are so immersed in the development of an innovative idea that they enter in what Csikszentmihalyi defined as a “flow state”. People in this state are so focused on what they are doing that they step in an alternative reality where existence seems to be temporarily suspended.

Participants in H-acks, in fact, usually do not participate in the workshops or presentations, expect those useful to their project; do not stray from the group or from the workplace, except for very short periods; do not use too much social networks or cell phones; eat all together, at times at the work table, and often continuing to discussing their innovative idea; barely sleep and almost do not feel the need to eat or go to the bathroom. They fully devote their time in the event to the creation of the idea, minimizing participation in other activities.

Limitations and ideas for future research

The aspects described so far are just some of the behaviors observed and described more in details in Chapter 3, but they are the aspects that could be encountered in other innovative events, as well.

This dissertation has limitations related to the method adopted, the ethnographic study, that it would be interesting to overcome in future research. The ethnographic study, in fact, allows a very thorough analysis of behaviors, but on a small number of subjects and in a limited time frame.

First of all, the research conducted for this dissertation highlights behaviors observed in a small number of participating teams to H-acks, it would be interesting in

future research to collect data on a larger sample or compare the behaviors I described with those of participants in other hackathons or innovative events. This would allow to understand more precisely if there are behaviors that are repeated in a diffuse way and to have a broader perspective on what might be the causes of these. The decision to do an ethnographic study has enabled to identify some interesting behaviors, thanks to the close observation of a small number of teams, so it would be interesting that future research, statistical in nature, could confirm what was observed by taking into consideration a larger sample.

Moreover, analyzed teams were chosen randomly without a specific standard or a careful study of the members' characteristics, this choice was dictated by the fact that teams do not arrive already formed and undergo changes before the event begins. The random choice, although obliged, might have influenced the analysis of some dynamics and certainly does not allow to have a complete picture of all the observable behaviors during the H-acks. Future research may identify a common feature of the team to observe or try to observe more heterogeneous teams, in an effort to make the study more comprehensive.

A further limitation of the study is that it does not analyze whether observed teams, at the end of the H-ack, are among the winners or not. It would be interesting to understand what are the characteristics and the internal dynamics of a winning team in innovative events, like H-acks.

Finally, in the last paragraph of the third chapter, I only make brief references to the impact of an event like the H-acks from the participants' point of view, future research could also investigate what are the long-term benefits for participating companies. Alternatively it would be interesting to track over time employment outcomes of H-ack participants, and understand what is the influence of the participation in the format in their careers.

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Open Innovation community website: <http://www.openinnovation.net/>

P&G Connect + Develop website: <http://www.pgconnectdevelop.com/>

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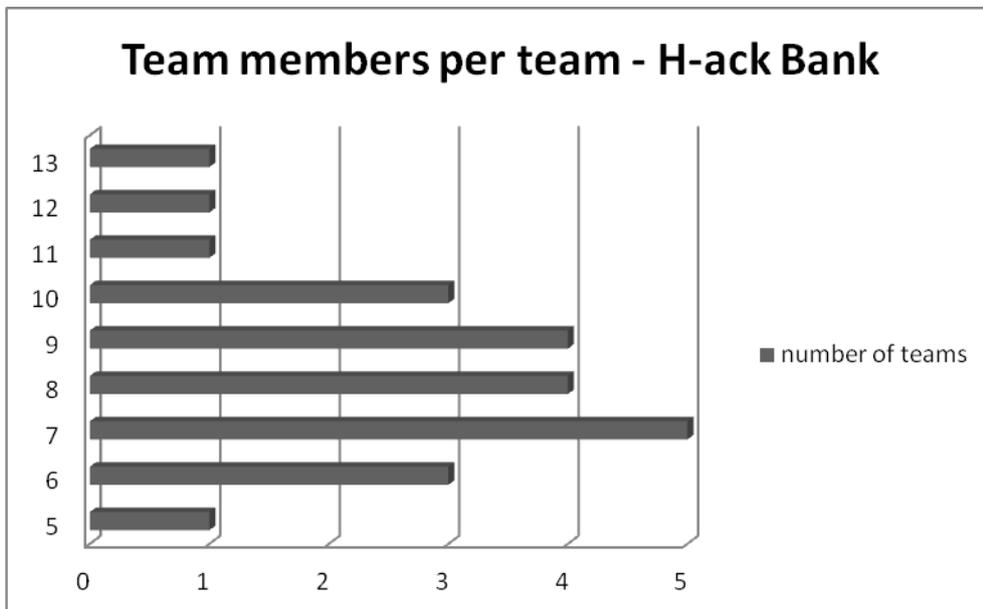
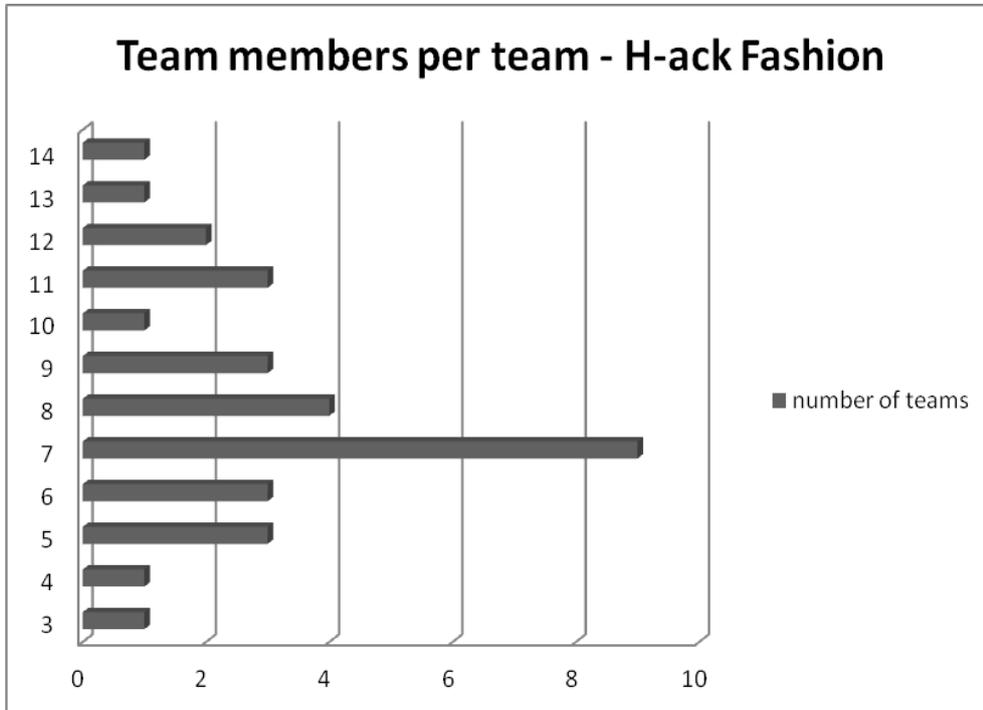
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33 Entrepreneurs website: <http://www.33entrepreneurs.fr/>

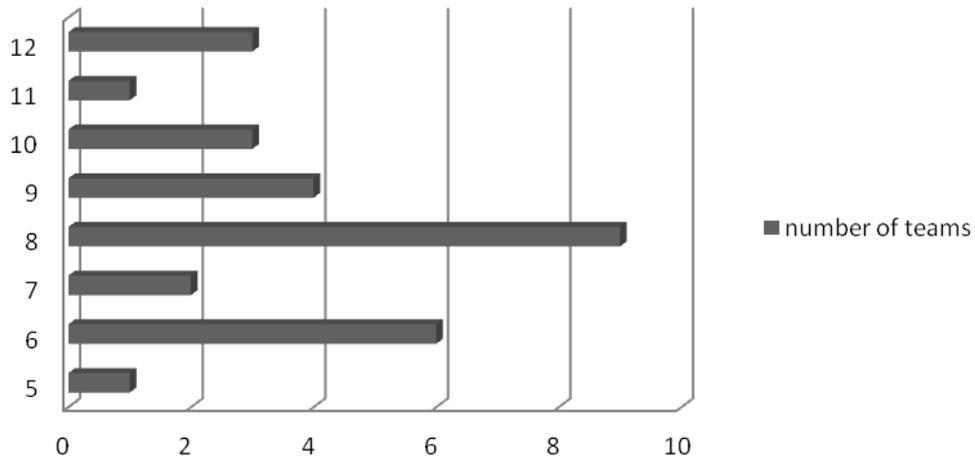
Appendices

Appendix 1: H-ack Data

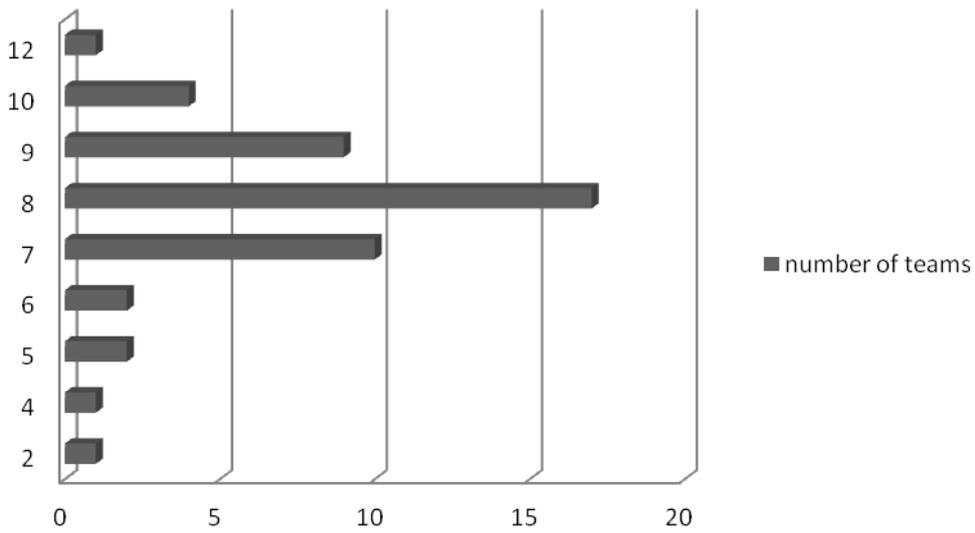
a. Team members per team



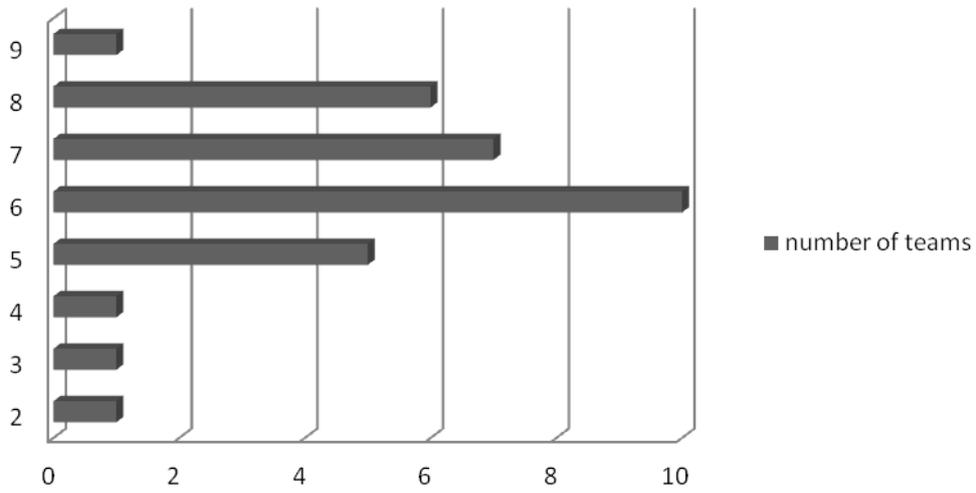
Team members per team - H-ack Wine



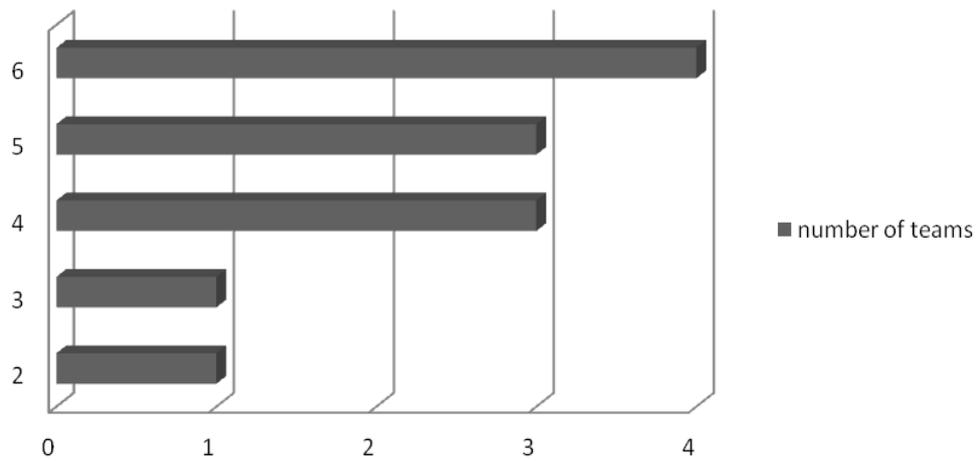
Team members per team - H-ack Travel



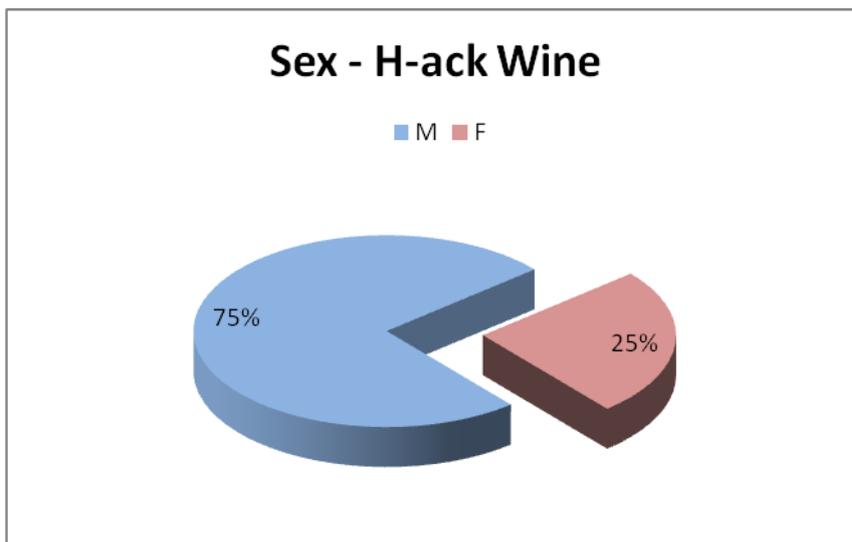
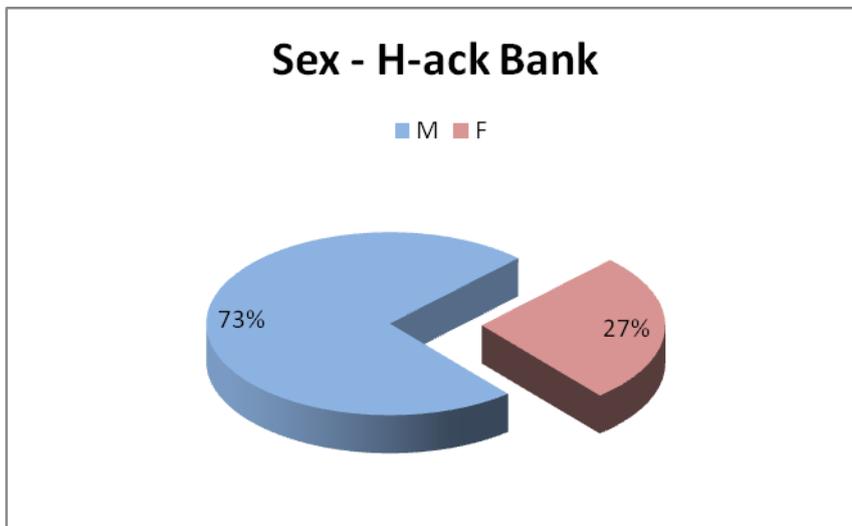
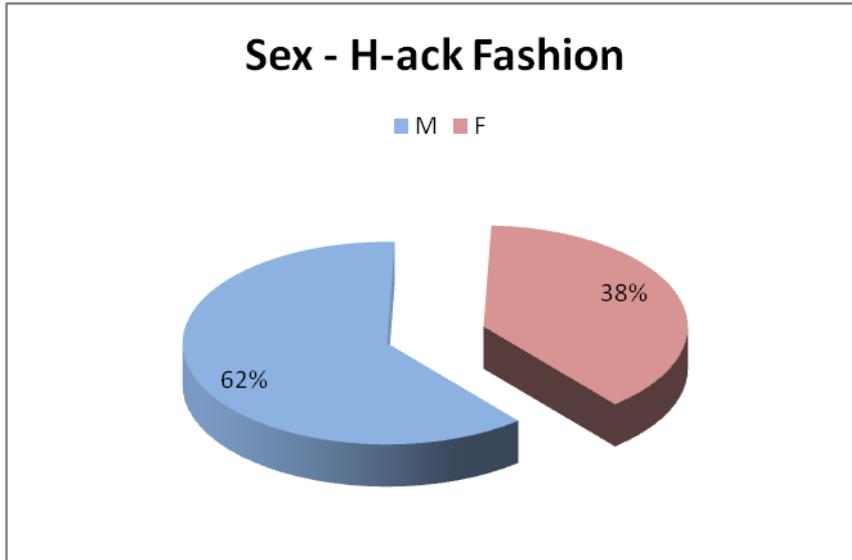
Team members per team - H-ack Auto



Team members per team - H-ack Payment

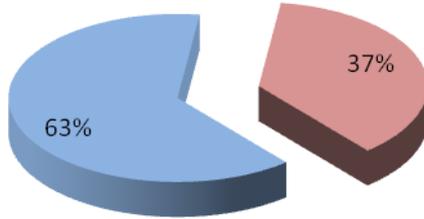


b. Sex



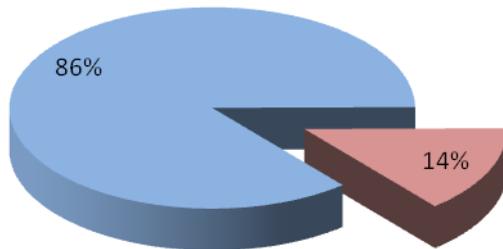
Sex - H-ack Travel

■ M ■ F



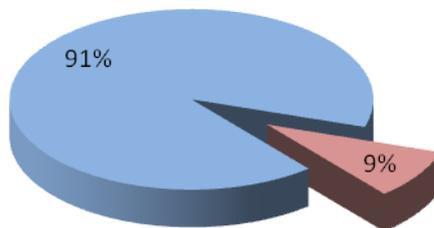
Sex - H-ack Auto

■ M ■ F



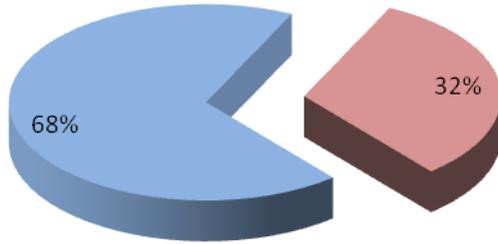
Sex - H-ack Payment

■ M ■ F



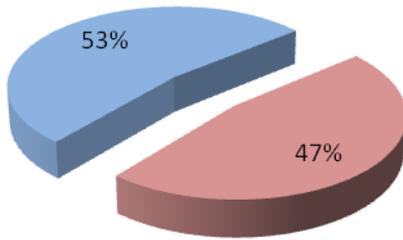
Sex - H-ack Food

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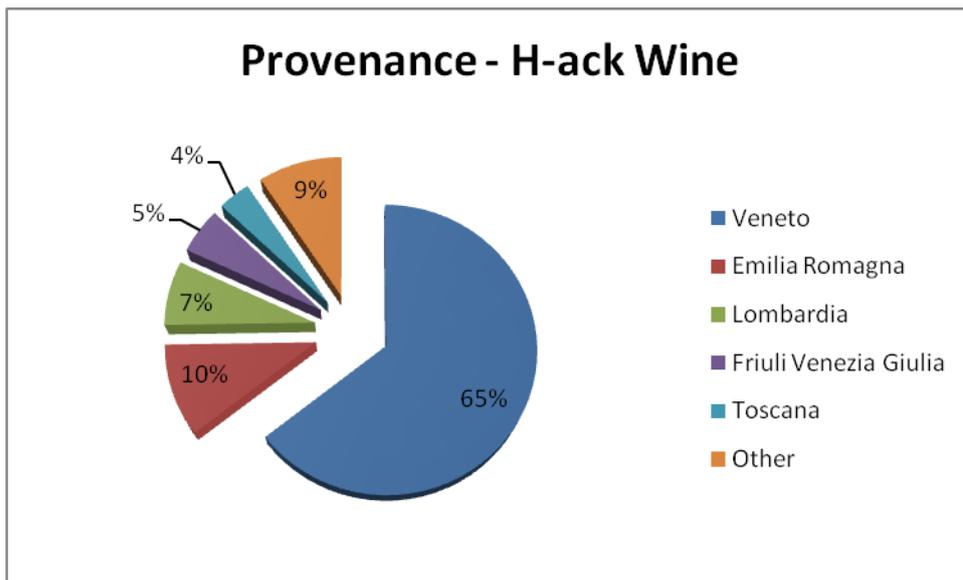
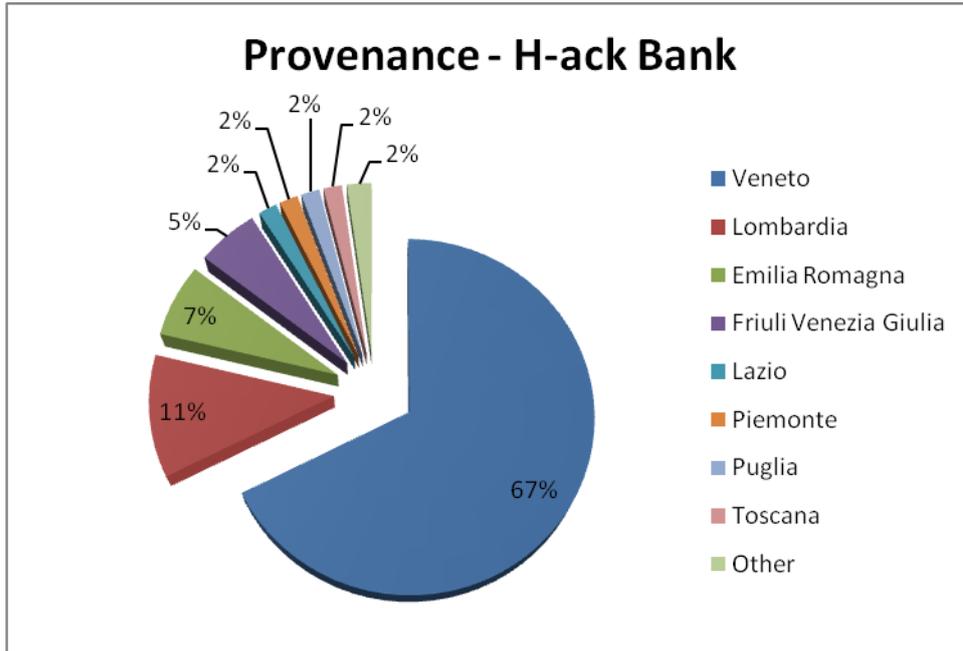


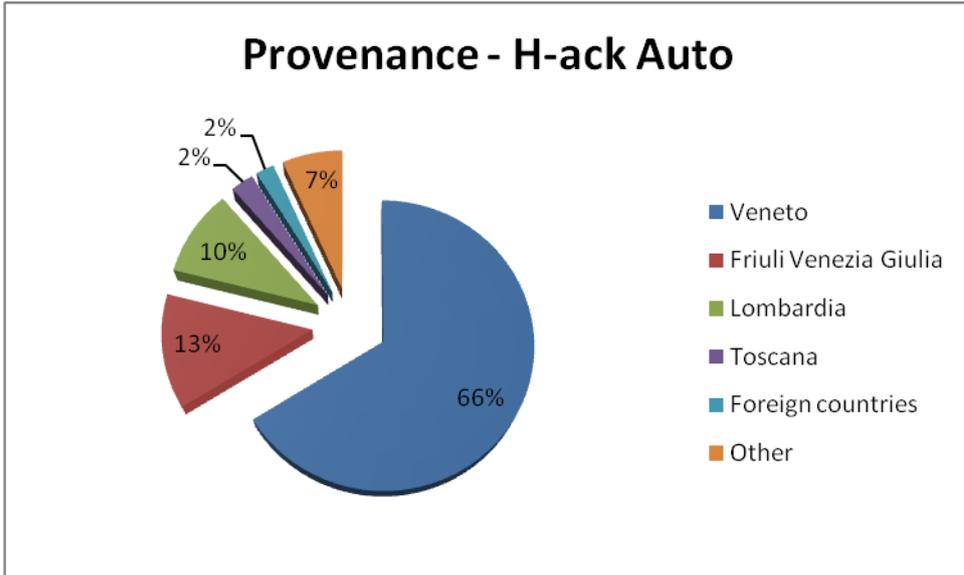
Sex - H-ack Fashion 2

■ M ■ F

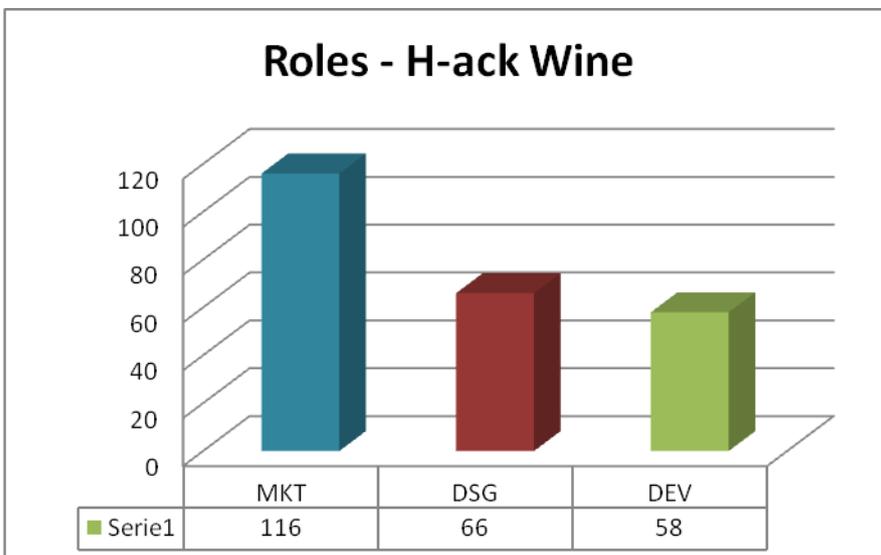
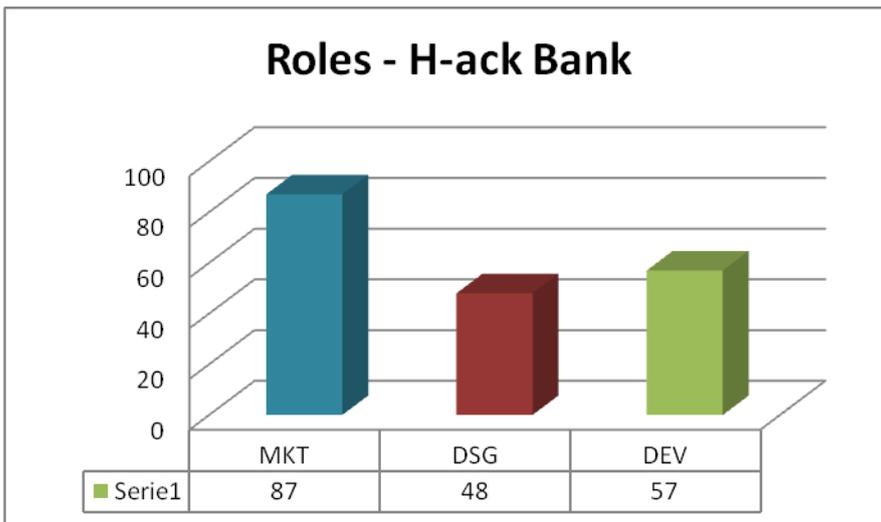


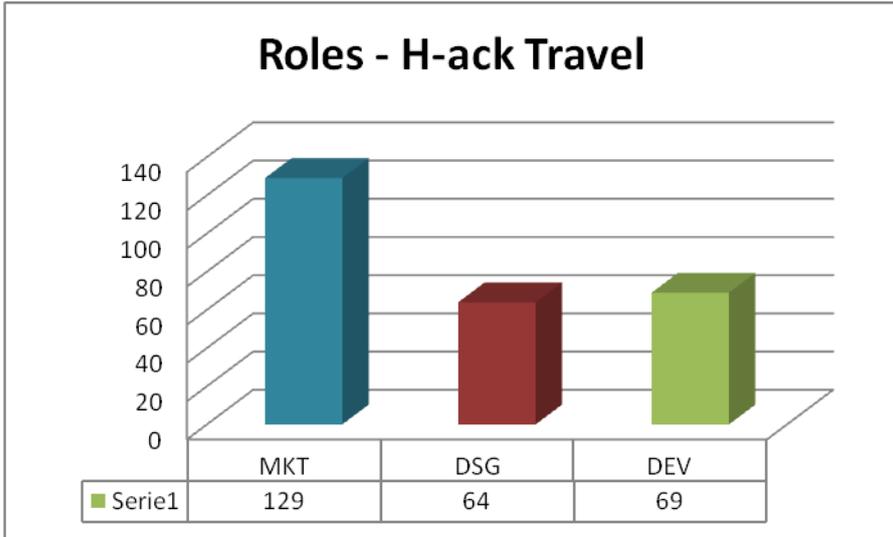
c. Provenance



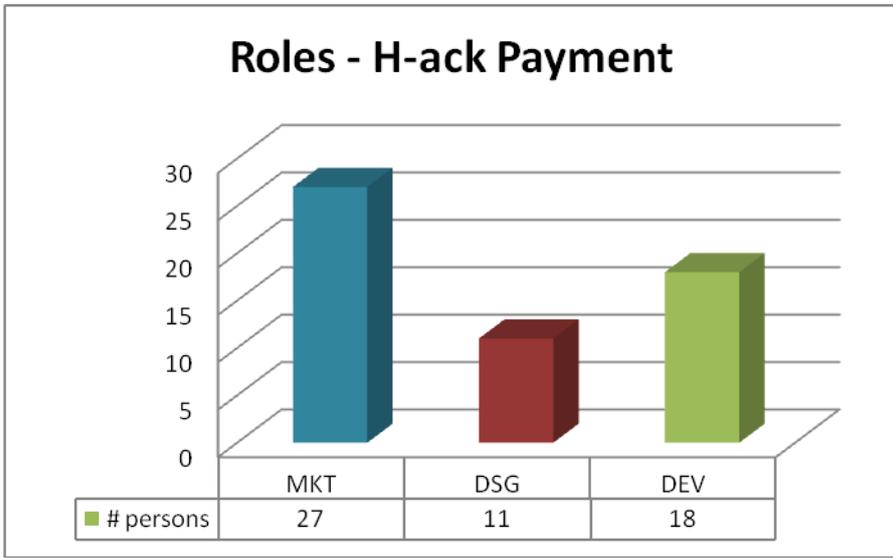
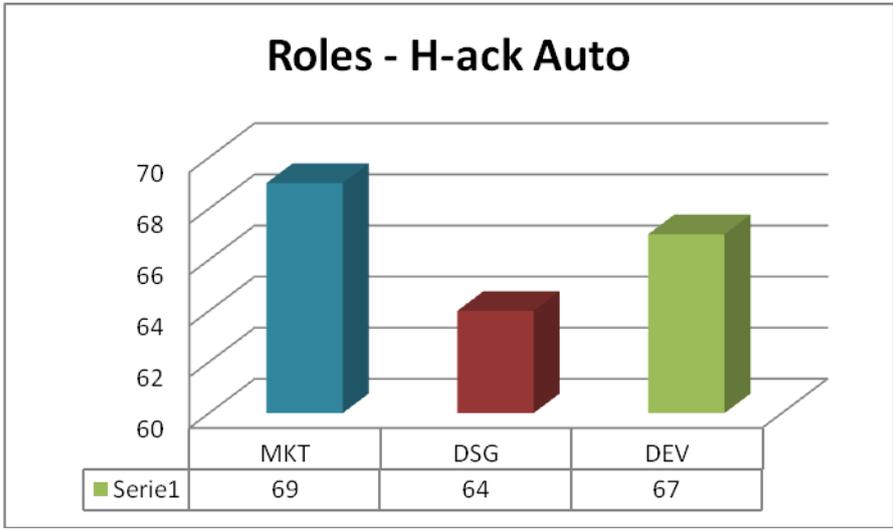


d. Roles

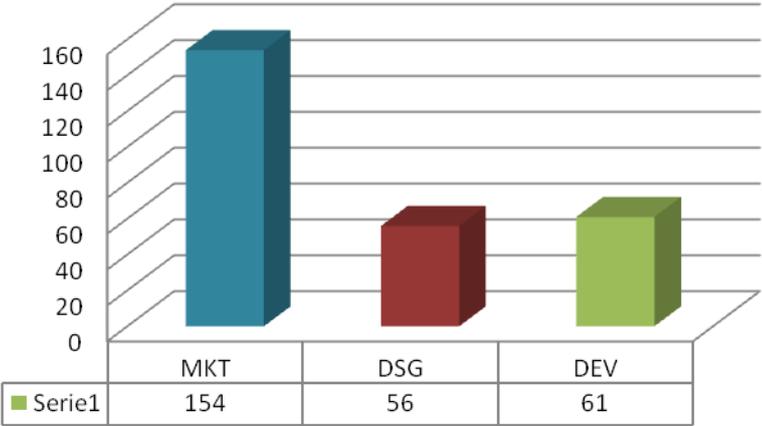




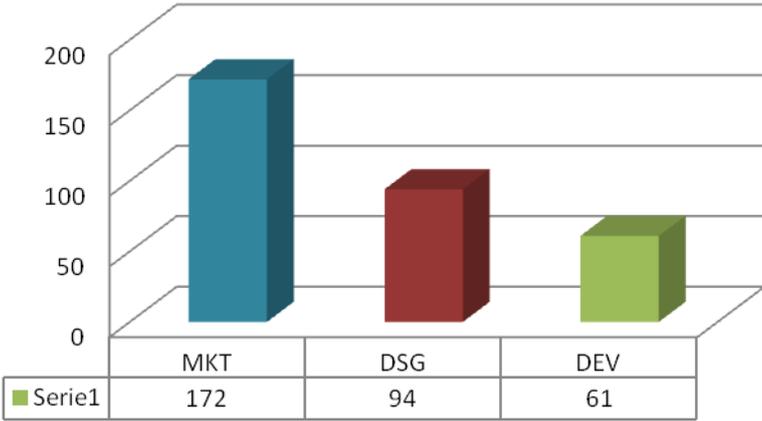
n.b: Data on H-ack Travel do not consider roles of participants working on Ve.la, which are missing.



Roles - H-ack Food



Roles - H-ack Fashion 2



Appendix 2: Observation model

- Numero componenti gruppo
- Composizione gruppo: numero developer/marketing specialist/designer + numero uomini e donne
- Conoscenza iniziale membri: si presentano e parlano di loro stessi e di cosa fanno prima di iniziare a lavorare all'idea? O iniziano a parlare direttamente del lavoro senza sapere molto degli altri?
- Creano un gruppo Facebook per condividere più facilmente i materiali? Condividono altre informazioni di base (es: e-mail per Dropbox o Google drive) o usano altri strumenti di condivisione?
- Tipologie di brainstorming/come nasce l'idea:
 - Rileggono il brief (ognuno per conto suo/a voce alta)
 - Visitano sito azienda
 - Ognuno scrive la sua idea e in seguito si confrontano su quanto scritto
 - Ognuno espone oralmente la sua idea
 - C'è una singola persona che espone la sua idea e gli altri apportano eventuali modifiche
 - Utilizzano disegni o grafici per rendere più chiaro il concetto
 - Analizzano i competitor dell'azienda
 - Utilizzano modelli già codificati come il business model canva
 - ...
- Leader: appare chiaro fin da subito chi è il leader? E' lui quello che assegna i compiti, riunisce le idee, fa il punto della situazione?
- Il leader è uomo o donna?
- Sembra avere conoscenza del settore/dell'azienda o ha solo carattere?
- Il leader durante tutto l'hack è molto presente o ha un ruolo marginale nel gruppo o paritario rispetto agli altri?
- C'è più di un leader reale, c'è un solo leader o nessuno sembra imporsi in modo particolare? C'è più di qualcuno che dà indicazioni al gruppo sul da farsi, magari a seconda delle sue conoscenze (un designer gestisce i designer, un marketing specialist gestisce i marketing specialist, un developer gestisce i developer)?
- Il leader o i leader dimostrano le dimensioni del modello dei 5 fattori?

- Nevroticità rappresenta la tendenza a esibire scarsa regolazione emotiva e dimostrare conseguenze negative, come ansia, insicurezza, e ostilità.
- Estroversione rappresenta la tendenza ad essere socievole, assertivo, attivo, e di sperimentare effetti positivi, come l'energia e lo zelo.
- Apertura alla esperienza è la disposizione a essere fantasiosi, anticonformisti, non convenzionali e autonomi.
- Amabilità/Simpatia è la tendenza a essere fiduciosi, accondiscendenti, premurosi, e gentili.
- Coscienziosità si compone di due aspetti correlati: realizzazione e affidabilità
- Come si suddividono il lavoro? Lavorano in gruppi di competenze, ossia marketing specialist assieme, designer assieme e developer assieme? Lavorano tutti assieme? Fanno gruppi misti?
- Nel lavoro in team si notano i componenti principali del lavoro di squadra:
 - Direzione attiva del team: Capacità di dirigere e coordinare le attività di altri membri del team, valutare le prestazioni del team, assegnare compiti, sviluppare le conoscenze, le abilità di squadra, e abilità, motivare i membri del team, pianificare e organizzare, e stabilire un clima positivo.
 - Monitoraggio reciproco
 - Comportamenti di supporto reciproco: Capacità di anticipare i bisogni degli altri membri del team. Ciò include la capacità di spostare il carico di lavoro tra i membri per raggiungere l'equilibrio durante momenti di carico di lavoro o di pressione maggiore.
 - Adattabilità: Possibilità di regolare le strategie in base alle informazioni raccolte dall'ambiente.
 - Orientamento di squadra: Propensione a tenere in considerazione tutti i membri durante l'interazione di gruppo e la fede nella importanza dell'obiettivo del team piuttosto che del singolo.
 - Fiducia reciproca
- Come interagiscono tra loro in caso di disaccordo o di problemi? Nella discussione viene lasciato spazio alle eventuali obiezioni dei membri? Traspare fiducia reciproca tra i membri?

- Come interagiscono con i mentor? Quali sono le domande? Chi le fa? I mentor quando passano a parlare con i team danno feedback precisi sull'idea che sta sviluppando il team?
- Come interagiscono con l'azienda? Quali sono le domande? Chi le fa? L'azienda quando passano a parlare con i team da feedback precisi sull'idea che sta sviluppando il team?
- Le idee subiscono modifiche in corso d'opera a seconda delle indicazioni date dai mentor? Seguono i consigli? Cambiano radicalmente l'idea o solo parzialmente?
- I membri del team nel corso dell'evento si trovano quasi sempre alla postazione di lavoro? Si allontanano spesso da lì o solo lo stretto indispensabile? Sembrano totalmente coinvolti nel lavoro e assorbiti dai compiti da svolgere?
- Scattano foto e postano nei social le loro attività? Con che frequenza? Tutti i membri lo fanno o solo alcuni?

Appendix 3: Myers-Briggs Type Indicator (MBTI) Test

1. You find it easy to introduce yourself to other people.
2. A logical decision is always the best, even when it hurts someone's feelings.
3. You are rather impatient.
4. You need to retreat and have some "alone time" after spending some time talking to other people.
5. You are relaxed most of the time.
6. You can easily read between the lines and "get" metaphors.
7. It is rather difficult to excite you.
8. People often say that you are inflexible.
9. Emotional movies can easily make you sad.
10. Your home and work environments are quite tidy.
11. You often feel as if you have to defend your principles and ideas.
12. You are often accused of being indecisive.
13. You do not mind being at the center of attention.
14. You would rather come up with an action plan than deal with its implementation.
15. You rarely get mood swings.
16. You believe that it is always important to be in control of your environment.
17. You find it difficult to start talking when you do not yet have a clear idea in your mind.
18. Your mood can change very quickly.
19. You often do things spontaneously or in a rush.
20. You want your work to reflect how you feel instead of just meeting some objective standards.
21. Your work style is closer to energy spikes than to a slow but constant flow.
22. You are often envious of others.
23. An interesting book or a video game are often better than a social event.
24. Being able to develop a plan and stick to it is the most important part of every project.
25. Ideas are often more important than real things.
26. You find it easy to support your friends emotionally.
27. You often overthink your tasks or projects.
28. You do not let your emotions show, even when you are with close friends.
29. You find it difficult to keep a cool head in conflict situations.
30. You enjoy thinking about what impact current events could have on something far away in the future.
31. It does not take you much time to start getting involved in social activities at your new workplace.
32. You would rather do something in your own way than copy other people's methods, even if they are shown to work.
33. It is easy to irritate you.

34. You are a perfectionist.
35. You would rather call yourself down-to-earth than a dreamer.
36. You do not mind being criticized, even harshly, if the arguments make sense.
37. You find it easier to notice factual discrepancies than underlying patterns.
38. You would rather improvise than spend time coming up with a detailed plan.
39. You can quickly remember important facts and events (e.g. birthdays).
40. You often stick to your ideals, even when your mind tells you to go in a different direction.
41. Keeping your options open is more important than having a to-do list.
42. You would rather work in a team than alone.
43. You rarely feel insecure.
44. You have no difficulties coming up with a personal timetable and sticking to it.
45. Justice is more important than mercy.
46. You always try to imagine the full picture before looking at individual facts.
47. You feel better after spending time with other people.
48. Your actions are often influenced by your feelings.
49. You see yourself as very emotionally stable.
50. You cannot stand chaos.
51. You have a good fashion sense.
52. You like to isolate yourself from the surroundings every once in a while.
53. It is difficult for you to hide your feelings.
54. You are a relatively reserved and quiet person.
55. If the room is full, you stay closer to the walls, avoiding the center.
56. You would rather choose an old and reliable approach than try one that is new and unpredictable, but possibly better.
57. You feel very anxious in stressful situations.
58. You think that there is nothing wrong in bending or breaking some rules if the situation calls for that.
59. You think that there is little point in being empathic in a professional environment.
60. You often take initiative in social situations.

Appendix 4: Interviews

- Avete partecipato in precedenza ad altri h-ack? Avete partecipato ad hackathon o eventi simili? Se sì, cosa vi spinge a ritornare?
- Se è la prima volta, qual è stata la vostra impressione iniziale?
- Quali sono i motivi che vi hanno spinto a scegliere il vostro leader?
 - Conoscenza del settore o dell'azienda
 - Carattere forte
 - È colui che ha cercato i membri e creato il gruppo
 - ...
- Quali sono i motivi che vi hanno spinto a scegliere i membri del vostro team?
 - Conoscenza pregressa
 - Era vicino a noi al momento dell'inizio dell'evento e durante la presentazione
 - Eravamo interessati alla stessa azienda e avevamo bisogno di quella precisa figura all'interno del gruppo
 - ...
- Quante persone conoscevate prima dell'h-ack di quelli del vostro gruppo?
- Quali motivi vi hanno spinto a partecipare all'h-ack?
 - Curiosità per l'evento
 - Curiosità per h-farm
 - Interesse per il settore
 - Ricerca di un lavoro
 - ...
- Come è nata la vostra idea? Vi siete ispirati ad idee precedenti?
- Cosa vi aspettate dal h-ack?
 - Entrare in h-camp
 - Frequentare un ambiente stimolante

- Perfezionare la mia idea di start up /cogliere spunti per la mia start up
 - Passare un weekend diverso
 - Trovare qualche possibilità lavorativa
 - Conoscere gente interessante
 - ...
- Qual è il vostro parere sui mentor? Le indicazioni fornite vi hanno aiutato ad indirizzare meglio il vostro lavoro? Le loro indicazioni vi hanno portato a modificare il vostro progetto?
 - Qual è il vostro parere sull'azienda e le indicazioni che vi hanno fornito? Vi hanno aiutato ad indirizzare meglio il vostro lavoro? Le loro indicazioni vi hanno portato a modificare il vostro progetto?
 - Se doveste cercare uno sviluppatore/un designer/una figura di marketing o finanza, vi rivolgereste a coloro che avete conosciuto all'H-ack?
 - L'H-ack vi ha aperto prospettive lavorative in un nuovo settore?
 - Qualcuno di voi sta già lavorando ad un'idea di start up? Se sì, durante l'H-ack hai/avete conosciuto figure interessanti per l'idea di start up che avevi/avevate in precedenza?
 - Avete fatto/Avete intenzione di fare domanda di lavoro in una delle aziende partecipanti a questo h-ack?
 - Avete fatto/Avete intenzione di fare domanda di lavoro ad H-Farm
 - Avete postato nei social con gli hashtag dell'evento? Che momenti avete voluto condividere? Che social avete usato prevalentemente?

Appendix 5: H-ackers Networking Survey

1. Hai continuato a sviluppare l'idea nata durante l'H-ACK?

- Sì, in H-Farm
- Sì, fuori H-Farm
- Forse lo farò in futuro
- No, non intendo

1.1 Se sì, che grado di sviluppo dell'idea avete raggiunto?

- Abbiamo solo il business plan
- Abbiamo già sviluppato la versione beta
- Abbiamo costituito la start up

1.2 Se sì, Il tuo team attuale da chi è composto?

- Tutti i membri del team dell'H-ack
- Una parte dei membri del team dell'H-ack
- Abbiamo aggiunto membri conosciuti all'H-ack, ma che non erano parte del team
- Abbiamo aggiunto membri conosciuti fuori dall'H-ack

1.3 Se no, per quale ragione hai abbandonato l'idea?

- Ho altre prospettive lavorative/Non rientra tra le mie priorità
- L'idea non era interessante/fattibile
- Non c'era interesse da parte dell'azienda per cui abbiamo lavorato
- Motivazioni economiche
- Altro

Conoscevi già i membri del tuo team? (solo per questionario dopo 3 mesi)

- No, nessuno
- Sì, tutti
- Sì, alcuni...Indicare quanti

2. Vogliamo valutare l'impatto che gli H-ack hanno in diversi ambiti.

Assegna un punteggio da 1 (Assolutamente no) a 5 (Assolutamente sì) alle seguenti affermazioni.

- Se dovessi cercare uno sviluppatore/un developer/una figura di marketing o finanza, mi rivolgerei a coloro che ho conosciuto all'H-ack
- Ho fatto/ho intenzione di fare domanda di lavoro ad H-Farm
- Ho fatto/ho intenzione di fare domanda di lavoro in una delle aziende partecipanti
- Durante l'H-ack ho conosciuto figure interessanti per l' idea di start up che avevo in precedenza
- L'H-ack mi ha aperto prospettive lavorative in un nuovo settore

Examples:

H-ack Auto/ H-ACKERS NETWORKING SURVEY / 6 mesi dopo:

<https://it.surveymonkey.com/s/KDYJGYK>

H-ack Payment/ H-ACKERS NETWORKING SURVEY / 3 mesi dopo:

<https://it.surveymonkey.com/s/5NNJRR6>

Appendix 6: H-ackers Networking Survey – Results

a. Aggregated results of surveys after 3 months and 6 months

Hai continuato a sviluppare l'idea nata durante l'H-ACK?

	3M	6M
Sì, in Farm	2	4
Sì, fuori Farm	11	19
Forse in futuro	42	32
No	127	180

Se sì, che grado di sviluppo dell'idea avete raggiunto?

Abbiamo solo il business plan	18	17
Abbiamo già sviluppato la versione beta	7	5
Abbiamo costituito la start up	1	2

Se sì, Il tuo team attuale da chi è composto?

Tutti i membri del team dell'H-ack	6	4
Una parte dei membri del team dell'H-ack	16	13
Abbiamo aggiunto membri conosciuti all'H-ack, ma che non erano parte del nostro team	1	1
Abbiamo aggiunto membri conosciuti fuori dall'H-ack	5	4

Se no, per quale ragione hai abbandonato l'idea?

Ho altre prospettive lavorative/Non rientra tra le mie priorità	52	78
L'idea non era interessante/fattibile	27	29
Non c'era interesse da parte dell'azienda per cui abbiamo lavorato	57	79
Motivazioni economiche	5	5
Altro	20	21

Conoscevi già i membri del team con cui hai partecipato all'h-ack?

No, nessuno	43
Sì, tutti	5
Sì, alcuni	129

Vogliamo valutare l'impatto che gli H-ack hanno in diversi ambiti. Assegna un punteggio da 1 a 5 alle seguenti affermazioni.

Se dovessi cercare uno sviluppatore/un designer/una figura di marketing o finanza, mi rivolgerei a coloro che ho conosciuto all'H-ack

1 - Assolutamente no	24	13
2 - Probabilmente no	20	42
3 - Non saprei	42	38
4 - Probabilmente sì	58	112
5 - Assolutamente sì	33	11

Ho fatto/ho intenzione di fare domanda di lavoro ad H-Farm

1 - Assolutamente no	52	34
2 - Probabilmente no	34	68
3 - Non saprei	41	45
4 - Probabilmente sì	21	45
5 - Assolutamente sì	29	24

Ho fatto/ho intenzione di fare domanda di lavoro in una delle aziende partecipanti

1 - Assolutamente no	63	43
2 - Probabilmente no	46	63
3 - Non saprei	27	49
4 - Probabilmente sì	22	48
5 - Assolutamente sì	19	13

Durante l'H-ack ho conosciuto figure interessanti per l'idea di start up che avevo in precedenza

1 - Assolutamente no	61	33
2 - Probabilmente no	31	37
3 - Non saprei	35	48
4 - Probabilmente sì	33	67
5 - Assolutamente sì	16	31

L'H-ack mi ha aperto prospettive lavorative in un nuovo settore

1 - Assolutamente no	54	55
2 - Probabilmente no	27	56
3 - Non saprei	47	35
4 - Probabilmente sì	38	48
5 - Assolutamente sì	10	22

b. Results of surveys after 3 months

	HB	HW	HT	HA	HP	
Hai continuato a sviluppare l'idea nata durante l'H-ACK?						
Sì, in Farm	1	1	0	0	0	2
Sì, fuori Farm	5	1	4	0	1	11
Forse in futuro	9	10	17	2	4	42
No	23	29	53	18	4	127
Se sì, che grado di sviluppo dell'idea avete raggiunto?						
solo business plan	5	2	8	1	2	18
versione beta	3	1	3	0	0	7
start up	0	0	1	0	0	1
Se sì, Il tuo team attuale da chi è composto?						
Tutti i membri del team dell'H-ack	1	0	3	0	2	6
Una parte dei membri del team dell'H-ack	5	1	8	1	1	16

Abbiamo aggiunto membri conosciuti all'H-ack, ma che non erano parte del nostro team	0	1	0	0	0	1
Abbiamo aggiunto membri conosciuti fuori dall'H-ack	3	0	2	0	0	5

Se no, per quale ragione hai abbandonato l'idea?

Ho altre prospettive lavorative/Non rientra tra le mie priorità	10	13	19	7	3	52
L'idea non era interessante/fattibile	7	5	12	2	1	27
Non c'era interesse da parte dell'azienda per cui abbiamo lavorato	9	14	24	9	1	57
Motivazioni economiche	2	0	2	0	1	5
Altro	4	6	8	2	0	20

Conoscevi già i membri del team con cui hai partecipato all'h-ack?

No, nessuno	12	10	15	2	4	43
Sì, tutti	0	2	2	1	0	5
Sì, alcuni	25	27	55	17	5	129

Vogliamo valutare l'impatto che gli H-ack hanno in diversi ambiti. Assegna un punteggio da 1 a 5 alle seguenti affermazioni.

Se dovessi cercare uno sviluppatore/un designer/una figura di marketing o finanza, mi rivolgerei a coloro che ho conosciuto all'H-ack

1	7	5	11	1	0	24
2	1	5	10	3	1	20
3	6	12	14	8	2	42
4	19	11	21	4	3	58
5	4	6	16	4	3	33

Ho fatto/ho intenzione di fare domanda di lavoro ad H-Farm

1	10	12	23	4	3	52
2	9	8	14	3	0	34
3	8	11	15	6	1	41
4	7	3	8	0	3	21
5	3	5	12	7	2	29

Ho fatto/ho intenzione di fare domanda di lavoro in una delle aziende partecipanti

1	15	16	22	5	5	63
2	11	8	18	7	2	46
3	7	6	11	3	0	27
4	3	6	10	3	0	22
5	1	3	11	2	2	19

Durante l'H-ack ho conosciuto figure interessanti per l'idea di startup che avevo in precedenza

1	10	17	28	4	2	61
2	4	8	14	4	1	31
3	9	4	13	6	3	35
4	10	6	10	6	1	33
5	3	4	7	0	2	16

L'H-ack mi ha aperto prospettive lavorative in un nuovo settore

1	10	14	23	5	2	54
2	5	6	9	5	2	27
3	11	10	20	5	1	47
4	8	8	14	5	3	38
5	2	1	6	0	1	10

c. Results of surveys after 6 months

	HF	HB	HW	HT	HA	
Hai continuato a sviluppare l'idea nata durante l'H-ACK?						
Sì, in Farm	1	0	3	0	0	4
Sì, fuori Farm	1	4	1	3	10	19
Forse in futuro	8	0	9	9	6	32
No	31	18	39	53	39	180
Se sì, che grado di sviluppo dell'idea avete raggiunto?						
Abbiamo solo il business plan	3	2	3	6	3	17
Abbiamo già sviluppato la versione beta	0	3	2	0	0	5
Abbiamo costituito la start up	0	1	1	0	0	2
Se sì, Il tuo team attuale da chi è composto?						
Tutti i membri del team dell'H-ack	0	4	0	0	0	4
Una parte dei membri del team dell'H-ack	1	2	5	3	2	13
Abbiamo aggiunto membri conosciuti all'H-ack, ma che non erano parte del nostro team	0	0	0	0	1	1
Abbiamo aggiunto membri conosciuti fuori dall'H-ack	1	0	1	2	0	4
Se no, per quale ragione hai abbandonato l'idea?						
Ho altre prospettive lavorative/Non rientra tra le mie priorità	16	9	19	20	14	78
L'idea non era interessante/fattibile	5	2	7	9	6	29
Non c'era interesse da parte dell'azienda per cui abbiamo lavorato	11	5	17	27	19	79
Motivazioni economiche	0	0	1	2	2	5
Altro	6	2	4	5	4	21

**Vogliamo valutare l'impatto che gli H-ack hanno in diversi ambiti.
Assegna un punteggio da 1 a 5 alle seguenti affermazioni.**

Se dovessi cercare uno sviluppatore/un designer/una figura di marketing o finanza, mi rivolgerei a coloro che ho conosciuto all'H-ack

1	3	0	4	4	2	13
2	4	4	11	12	11	42
3	6	2	11	13	6	38
4	25	14	21	32	20	112
5	1	0	5	3	2	11

Ho fatto/ho intenzione di fare domanda di lavoro ad H-Farm

1	4	4	10	10	6	34
2	11	8	17	21	11	68
3	9	2	10	15	9	45
4	6	6	11	12	10	45
5	9	0	4	6	5	24

Ho fatto/ho intenzione di fare domanda di lavoro in una delle aziende partecipanti

1	6	2	13	11	11	43
2	4	6	15	25	13	63
3	7	6	14	11	11	49
4	17	6	7	14	4	48
5	5	0	3	3	2	13

Durante l'H-ack ho conosciuto figure interessanti per l'idea di start up che avevo in precedenza

1	7	2	8	10	6	33
2	5	4	7	12	9	37
3	5	5	14	17	7	48
4	14	6	16	17	14	67
5	8	3	7	8	5	31

L'H-ack mi ha aperto prospettive lavorative in un nuovo settore

1	12	3	12	19	9	55
2	7	4	16	20	9	56
3	9	4	7	9	6	35
4	8	7	11	11	11	48
5	3	2	6	5	6	22