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**HACKATHONS & SOCIAL INNOVATION:
EXPLORING THE MAIN FACTORS OF HACKATHONS ACCELERATING THE
EMERGENCE OF TECHNOLOGY-BASED SOCIAL VENTURES**

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Abstract

This paper explores the transformative impact of hackathons in fostering the creation of technology-based social ventures, using the project *Onesta* as a case study. Utilizing an autoethnographic approach, the study reflects on the journey from initial ideation to post-hackathon development, highlighting the crucial role of mentoring and networking in overcoming challenges and sustaining venture growth. Through firsthand insights and experiences, the study emphasizes that hackathons are effective not only in initial prototyping but also in creating valuable long-term relationships essential for venture success. This research contributes to a deeper understanding of hackathons' role, particularly in the social entrepreneurial ecosystem.

Keywords: hackathon, startup, social venture, entrepreneurship, technology, innovation, networking, mentoring

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1. Introduction

In a rapidly evolving world, characterized by a dynamic technological landscape and escalating societal challenges, the urgency to address these issues has never been greater. Contemporary challenges, including mental health, environmental sustainability and food security are becoming more pressing, requiring immediate action to aid those in need. Technological innovations, such as digital tools or solutions, can have a profound impact on these interconnected challenges and can be leveraged to drive the emergence of ventures dedicated to actively creating social value.

Hackathons, as time-bound collaborative events, provide crucial platforms where talented individuals meet to co-create and innovate together. Combining technological know-how and entrepreneurial spirit can generate novel solutions to challenging problems. To better understand the transformative potential of hackathons, this paper focuses on the factors inherent to and extending beyond these events which accelerate the emergence of technology-based social ventures.

In the literature review, we explore current research on hackathons and technology-based social ventures, describing their diverse formats, structures, and purposes. We then examine the interplay between these two domains, with a particular focus on the key factors of hackathons contributing to the emergence of new businesses. The factors currently under investigation encompass the technical proficiency during hackathons, the efficacy of knowledge transfer, and the appropriate selection of stakeholders, among others. This study aims to narrow down these factors, culminating in a research question directing attention to the main factors relevant to accelerating the emergence of technology-based social ventures through hackathons.

The methodology section hereof adopts an autoethnographic approach, employing the authors' personal experiences in developing a technology-based social venture originating from

a hackathon. This autoethnography involves comprehensive data collection, incorporating personal reflections, interviews, and reviews of various materials, contributing to a profound analysis of the emergence of the venture, referred to as *Onesta*. By providing a unique inside perspective, the study aims to identify and lay out the forces that facilitated progress in developing *Onesta*.

The findings section delves into the details of the *Onesta* development journey, covering key phases such as preparation, the hackathon experience and post-hackathon activities, such as follow-up meetings and feedback sessions with judges and mentors. This section also examines the decision to pause the project due to challenges related to legal considerations, technical capabilities, and organizational issues. Reporting on first-hand experiences, this section contributes to a nuanced understanding of the hackathon environment, particularly of post-hackathon effects.

The subsequent discussion explores the transformative potential of hackathons in fostering technological innovation and the emergence of social ventures taking into consideration the personal experiences set out in the findings and the insights gained from the literature review. The paper argues that while hackathons are instrumental in identifying entrepreneurial opportunities, they often lack sustained support for participants to launch and sustain their ventures in the long term. We therefore propose that mentoring and networking, established during hackathons, play a crucial role in overcoming post-event challenges and can significantly contribute to the emergence of technology-based social ventures such as *Onesta*.

The paper concludes with a section addressing the limitations and challenges of the study which also contains suggestions for potential future research and specific recommendations regarding the organization of hackathons, including the inclusion of extensive networking opportunities and qualified mentors, highlighting the importance of these components in creating long-term success.

2. Literature Review (Julia Rodriguez-Bustelo Fricke 53388)

2.1. Hackathons

The meaning of the word “hackathon” can be attributed to its two components “hacking” and “marathon” (Komssi et al. 2014). A marathon is an endurance racing activity that spans an extended duration, which is why participants of a marathon need to possess substantial stamina. In addition, marathons commonly attract a large number of participants (Garbisu-Hualde and Santos-Concejero 2020). Hacking involves proficient and strategic programming aimed at identifying errors in computer systems or data networks to gain unauthorized access. It can also encompass altering or manipulating these networks to accomplish certain goals that usually diverge from the intentions of the data’s owner. Hacking was born in the open-source community, a loosely organized coding collective that collaborates to achieve shared objectives (Gupta and Anand 2017). By breaking down the word *hackathon* into its components and considering the meanings of each, hackathons can be considered as social coding events with wide participation that unfold over a specific duration, requiring participants to show substantial motivation and endurance as they collaborate toward a shared goal (Rys 2023).

Apart from this literal interpretation of the term, finding a precise definition for a hackathon proves challenging due to the absence of a fixed boundary in current literature. Nonetheless, certain recurring characteristics can be identified (Briscoe 2014). Firstly, hackathons commonly have a predefined time limit, communicated before the start of the hackathon and typically lasting no more than a few days (Chia 2017). Secondly, these events foster learning and information sharing, creating an open-minded environment where creativity is encouraged. Hackathons often generate an entrepreneurial as well as team-building spirit among participants (Komssi et al. 2014). Thirdly, hackathons are output-oriented, aiming to create prototypes that justify subsequent investment. Typically, the prototypes resulting from a

hackathon may not be fully marketable and require further refinement, demanding additional time and effort to achieve the final product stage (Komssi et al. 2014).

Hackathons exhibit diverse formats and can be executed in different iterations (Briscoe 2014). For instance, hackathons can differ in their focus, categorizing them as either topic- or technology-focused. In the case of topic-focused hackathons, the focus lies on tackling a specific challenge or business idea, utilizing any technology available. Conversely, technology-focused hackathons prioritize the use of a specific predetermined technology when developing the prototype (Briscoe 2014). Furthermore, hackathons can be classified as either external or internal. While external hackathons are open public events, welcoming participants with diverse backgrounds and skills, internal hackathons are restricted to a specific group, comprising either members or employees of a particular organization, or individuals possessing specific skill sets (Komssi et al. 2014).

Moreover, hackathons can also be distinguished by their mode of operation. While hackathons traditionally have been physical events, hackathons are also often held online (Franco, Presenza, and Petruzelli 2021). While physical hackathons are still perceived as strong platforms for interacting, networking, and collaborating, online versions of hackathons are gaining popularity due to the increased number of participants who can simultaneously take part in one hackathon. Through that increased number of participants, more diversity among participants in terms of geographies, cultures, and time zones can be accomplished. Physical events taking place in one specific location can generally not achieve either the large number of participants or the degree of diversity of participants' backgrounds that online hackathons can offer (Franco, Presenza, and Petruzelli 2021).

Lastly, hackathons can either be of a cooperative or a competitive nature. During hackathons that feature a competitive approach, teams usually are formed at the beginning or pre-defined when participants sign up. Each team competes to create the best prototype to

address a proposed issue, with the winning team receiving funding and resources for further development. Cooperative hackathons also involve team formation activities in the beginning to encourage the learning and knowledge transfer process. However, the several different teams do not compete against each other for a final prize; but rather collaborate during the innovation process. The team formation tends to be more fluid with participants switching between teams during the hackathon in accordance with where which specific skill is needed the most at a certain time. Knowledge is commonly shared not only by single participants but also across different teams to come up with a single most feasible, useful solution that is best for all involved stakeholders (Pe-Than et al. 2018).

It is important to note that the main purpose of most hackathons is to create a software prototype. The prototype can help determine whether the proposed software is worth advancing and putting more resources into (Komssi et al. 2014). While internal hackathons often have the main goal of developing innovative products for a certain organization or company that fits within the current or potential business activities of the company, external hackathons often focus on a social component. The aspiration is to create new innovations that can help improve society by addressing some of the current societal challenges (Franco, Presenza, and Petruzzelli 2021).

The structure of a hackathon can be divided into distinct chronological phases. The first phase typically involves ideation, brainstorming, and team formation, sometimes complemented with optional team-building exercises. This may take place either before the official commencement of the event or within the initial hours after the start. Its primary objective is to establish teams and define a focus on what needs to be coded or developed. Phase two is dedicated to the actual development of a functioning prototype based on the concept presented or discussed before. This is oftentimes the most time-intensive period. Organizers usually provide participants with all essential resources, including equipment, facilities, and

sustenance to ensure that all participants have the necessary tools at their disposal. In the third phase, the concept and the developed prototype are typically pitched to an audience. The pitch serves as a detailed presentation of the idea and outlines the merits and feasibility and reasons why it should be further developed in the future. The audience may include diverse individuals from different backgrounds and expertise areas. In the case of an external hackathon, the audience may encompass potential investors with an interest in exploring new ideas or start-ups. The audience of an internal hackathon often consists of managers or specialists from the organizing company responsible for evaluating the potential of the developed prototype. Phase four entails the relevant members of the audience deliberating on the potential allocation of resources and conveying their decisions of whether the ideas are worth developing further. If the innovation seems promising, the present investors or managers ideally communicate their commitment towards the project for future funding as an integral part of the hackathon process (Komssi et al. 2014).

A hackathon typically engages several distinct stakeholders, as outlined by Franco, Presenza, and Petruzzelli (2021), who list four primary participants in an external hackathon process. Firstly, an organizer or initiator is essential for the occurrence of a public hackathon. The organizer is typically motivated by ethical considerations and desires to foster social innovation. Their main objective is to contribute to society by addressing problems and offering solutions to current needs. To translate the organizer's aspirations into reality, a second group of stakeholders, the participants, comes into play. While participants may be driven by various motives, their primary motivation revolves around a shared goal of creating innovative ideas within a collaborative and creative environment. A third category of stakeholders in a hackathon, although not mandatory, includes mentors. These mentors, often experts such as consultants, entrepreneurs, or professors, occasionally guide participants, helping them focus their efforts on a specific direction to facilitate the delivery of a final project. Lastly, a hackathon

typically involves some form of potential sponsorship or funding of the developed product or idea. Investors can be private individuals seeking to initiate a new venture or in the case of an internal hackathon, the management division of the organizing company. In many instances, the sponsors also serve as initiators, determining the challenge to be addressed during the hackathon. As an external incentive for the participants, investors may offer a monetary prize as a reward for the winning project (Franco, Presenza, and Petruzzelli 2021).

2.2. Technology-based Social Ventures

Social ventures encompass a range of different initiatives, commonly with the unique focus of addressing and alleviating societal challenges (Mair and Noboa 2006). Social ventures range from non-profit endeavors to those with for-profit elements and are diverse in form and size, from small start-ups to big organizations. While some social ventures are founded by established businesses or government initiatives, the vast majority is founded by an individual or a group of individuals, independent from any bigger organization. In literature, these independent social ventures are often referred to as “entrepreneurial social ventures”. This paper exclusively focuses on entrepreneurial social ventures, ensuring that all subsequent mentions of social ventures will relate to the definition previously described for this distinctive category (Katre and Salipante 2012).

Similar to the word hackathon, there are many different interpretations of social entrepreneurship. It functions as the overarching idea for entrepreneurial social ventures, defining the use of resources to develop organizations with the goal of creating social value in many ways through a mission-driven approach - a fundamental component of social ventures.

Margiono, Zolin, and Chang (2018) provide a comprehensive framework for grasping the core characteristics of social entrepreneurship.

1. Mission Driven-Purpose: social ventures set themselves apart by being mission-driven which means prioritizing societal issues over financial gain. This fundamental difference

between social and conventional businesses leads to a distinct approach when launching a business. Successfully founding a social venture also depends on the strategy that navigates social and institutional frameworks in addition to economic obstacles (Robinson 2006).

2. Constraints on Profit Generation: social ventures typically place constraints on profit generation as their primary focus is to create social value, relegating profit maximization to a secondary role. The profits can be distributed among founders and stakeholders as desired. This sets them apart from charities or voluntary organizations, which face restrictions on profit distribution due to regulatory constraints and non-private ownership status. Some social ventures are structured as fully non-profit entities, meaning that no income can be distributed to owners or stakeholders whatsoever (Margiono, Zolin, and Chang 2018).

3. Adaptability in Funding Sources: social ventures can have access to diverse funding options, including both private and public sources. Private sources can rely on capital from founders and investors, while public sources may consist of government grants and aid. Moreover, some social ventures can be self-sustaining if their activities generate a substantial stream of profits. Funding is a highly relevant topic for social ventures since profits are usually low due to their lower prioritization. The flexibility of funding sources reflects the financial opportunities and problems associated with various initiatives.

4. Dual Nature of Control: Social ventures operate under private or public control, influencing their autonomy and regulatory landscape, depending mostly on their structure and financial channels. Private control thereby refers to more extensive operational freedom and these companies can align their strategies with their private management. Public control entails that a social venture is subject to certain specific institutional and legal restrictions and requirements (Margiono, Zolin, and Chang 2018).

As the complexities of social entrepreneurship and entrepreneurial social ventures are understood, technology plays a bigger and bigger role. Innovation and social impact come

together to create a dynamic environment where technology is used to drive transformative change in the field of social entrepreneurship. Technology-based social ventures are dedicated to addressing societal challenges specifically via innovative technological solutions (Ismail, Sohel, and Ayuniza 2012). Many philanthropic institutions, such as the Bill Gates Foundation, have embraced the integration of innovative technology in the process of solving societal problems. Disease tracking, patient diagnosis, crime reporting, and prediction and response to environmental catastrophes in developing regions are just some of the scenarios that organizations have been proven invaluable to solve through developing new technological, data-driven innovations. The introduction of technology in addressing these challenges is of major importance and can accelerate and multiply the impact of these social ventures. Moreover, social ventures can achieve scalability and replication when employing technological innovations across different geographies, projects, and industries in an efficient and cost-effective manner, surpassing those of traditional social ventures (Ismail, Sohel, and Ayuniza 2012).

A social entrepreneur is the founder of a social venture, whose motivation is found to diverge from that of the founder of a normal start-up. Ghalwash, Tolba, and Ismail (2017) have identified the key drivers of social entrepreneurship as personal experience, aspiration, perseverance, and social networks. The combination of personally experiencing an unsatisfied social need with an aspiration to change the relevant circumstances tends to form the initial driver of founding a social venture. Following the initial set-up, the perseverance of the social entrepreneur is of high relevance to the ongoing success of the social venture: many hurdles and obstacles will need to be identified and overcome when trying to implement social changes in institutions and societies. Lastly, social networks are considered to play a part in motivating an entrepreneur to pursue and develop an initiative. The additional skills and knowledge and the individuals willing to give emotional and factual support which may be found in social

networks are strongly needed for a social entrepreneur to make their venture succeed and grow (Ghalwash, Tolba, and Ismail 2017).

2.3. Relation between Hackathons and Technology-based Social Ventures

The development of successful technology-based social ventures requires a diverse set of skills and expertise from different fields. Beyond fundamental business-related competencies such as problem-solving, communication, and time management, there is a crucial need for soft skills related to tackling societal challenges, alongside an indispensable need for technological proficiency (Visvizi et al. 2022).

When it comes to founding technology-based social ventures, a common challenge consists of the following: IT experts often lack proficiency in business models, management, founding principles, networking, and related legal matters. Conversely, business experts or social entrepreneurs frequently find themselves without technical know-how regarding IT set-up, coding, and data management. This technical gap in utilizing data sources for services and applications is widespread among entrepreneurs in general (Kitsios and Kamariotou 2023). The development of technology-based social ventures, beyond proficiency in business and coding, requires additional expertise in areas such as government affairs, the social sector, legal considerations, public health, non-profit organization development, and regulatory knowledge. Hackathons provide a much-needed link between these types of specialists, offering developers the opportunity to leverage and expand their technological skills for new businesses and for business managers to apply their expertise and management skills in a collaborative effort to develop high-tech prototypes. The collaborative synergy fostered by hackathons, bringing together individuals with diverse expertise, is unique and indispensable for societal progress both in technical innovation and ethical considerations (Zhao, Sun, and Xu 2016).

Another reason why hackathons are an accelerator for technology-based social ventures are the significant funding needs these ventures encounter, especially in their early stages. The

nature of technological innovation requires extensive research and time, particularly during the initial development phase. Once the technology is established, and the product functions effectively, maintenance costs typically diminish compared to other businesses or social ventures, given that technology-based social ventures commonly require fewer human resources and asset expenses (Ismail, Sohel, and Ayuniza 2012).

Hackathons therefore hold special importance for technology-based social ventures: by mobilizing a diverse pool of individuals for an intense period, hackathons contribute invaluable time, resources, and funding opportunities crucial for the initial development stage for technology-based social ventures. This is further highlighted by a hackathon's custom of inviting investors to the final pitch of the hackathon, which establishes a useful platform for securing financial support (Ismail, Sohel, and Ayuniza 2012).

2.4. Key Factors of Hackathons in Driving Technological Innovation

The different factors that cause hackathons to enhance the development of innovation have been researched by several different authors (Toros et al. 2022). Zhao, Sun, and Xu (2016) identified two key factors in a hackathon's environment that influence its impact on open innovation performance. The first key factor is the *technical abilities* available during a hackathon, encompassing both the strictly technical aspect, involving coding proficiency for prototype building, and the creative dimension, which involves applying the coding expertise to diverse settings. The convergence of these two types serves as an essential requirement to enable the development of innovative prototypes.

The second key factor involves *efficient knowledge transfer*, which refers to the successful sharing of available information resources through clear communication. Hackathons need to leverage the expertise of all relevant participants collaboratively to achieve the paramount knowledge transfer. If the goals of the participants are not aligned and

information is not communicated clearly, the diverse environment of a hackathon becomes inefficient (Zhao, Sun, and Xu 2016).

Furthermore, not all types of hackathons have been equally successful in terms of producing feasible, innovative prototypes. Franco, Presenza, and Petruzzelli (2021) have researched which elements specifically make some hackathons more successful in developing viable new ideas than others. These results shed light on the main factors of hackathons that accelerate the emergence of new ventures.

The first process identified by Franco, Presenza, and Petruzzelli (2021) is the *technological infrastructure setup* of a hackathon. This process hints at two ways in which technology is important during a hackathon. Firstly, it must be determined which technology to use to coordinate the different stakeholders involved in the innovation process. This determination can be crucial since the accessibility and ease of use of the technology available in a hackathon will have a significant impact on how effectively the participants will be able to communicate and therefore how successful the hackathon will be. Secondly, the technology that is chosen to build the prototype is also of great relevance: which technology is available can determine how far a prototype can be developed during a hackathon despite the latter's time constraints. In addition, how accessible the provided technology is for participants who are not IT specialists can also be very relevant since it determines how quickly and to which extent those participants can be involved in the hands-on work with the prototype and can experience the prototype's possibilities or limitations in the given time.

The second important process is the *stakeholder selection*. The selection of the involved specialists, mentors and other participants is of major importance, primarily because the selection of diverse and skilled expertise is crucial for the creation of valuable, innovative, and unique ideas. It is important to achieve a diverse environment of participants, however, an environment that is too diverse either in skill set, language, or culture can also lead to

communication impediments which can be detrimental to achieving the desired goals within a hackathon's limited timeframe. In addition, the selection of the participating mentors is also crucial since mentors must have the necessary skills to provide the knowledge and guidance required in the environment of the specific hackathon. Therefore, the proper selection of participants, mentors, and involved specialists is of major importance when evaluating the success of a hackathon.

Awareness creation is the third relevant process which involves the determination and clarification of the most relevant topics that are supposed to be tackled during the event. Creating awareness of the specific goal of a certain hackathon – in case there is one - before it begins allows the alignment and convergence of a common mission of all involved parties and stakeholders. The importance of this process again derives from the fact that hackathons have a limited time frame. If all participants are informed of a hackathon's specific goals in advance, the risk of the expectations of different parties – for example, participants and investors – differing and having to be aligned during the limited time of the hackathon, can be significantly reduced.

In addition, engaging and involving the most important public and private sponsors in the relevant discussion before the hackathon can be fruitful in specifying which new prototypes and products are useful, needed, and wanted by the people who later will fund them. If the sponsors participate in the determination of the final prototype, they will generally be more willing to fund further development thereof, which will make the emergence of a real start-up more likely.

The fourth important process identified by Franco, Presenza, and Petruzzelli (2021) is that of *idea co-creation*. As addressed above, the sharing and sounding of different ideas is the most important characteristic of a hackathon. That exchange is the most significant opportunity provided at a hackathon: a hackathon typically facilitates and enhances knowledge sharing and

innovation by gathering creative and specialized people and providing a space for creativity and exchange. Successful hackathons encourage the evolution of ideas in a common manner, involving several people in the ideation process rather than in an individual manner where only one person develops the idea. Ideas will be exchanged and assessed to build the best, most feasible prototype.

By incorporating many viewpoints from different participants into one prototype and having several people from different fields of expertise work on it, chances are generally higher that the final prototype will be of use. By having many critical minds already examining and considering a prototype's specifications in its early stages during a hackathon, the resulting prototype tends to be of maturity and quality usually requiring several lengthy rounds of separate review and development – otherwise taking up valuable time during the founding stage of the relevant start-up.

Several other papers have pointed out further and slightly differing factors that can enhance the process of innovation achieved in hackathons. Toros et al. (2022) for example found other factors such as increased networking opportunities at the hackathon, democracy during decision-making, non-hierarchical relations between participants, the quality of the provided mentoring at the hackathon and the encouragement of a non-judgmental atmosphere to be among the most important factors when organizing a hackathon to augment the chances of a viable new start-up emerging therefrom. Each of these elements uniquely contributes to fostering a sense of community during the hackathon, creating an enjoyable and collaborative work atmosphere.

Numerous factors across various stages of the start-up creation process have been associated with the acceleration of new businesses through hackathons. Existing literature uniformly agrees that hackathons help to create innovative ideas by being the organizational tool that helps engaged citizens and stakeholders to collaborate and co-create new innovations.

During a hackathon, it is common to collaborate intensely on creative and innovative projects to develop an initial prototype. Additional resources such as time, money, work, and skills need to be invested to build a business. Many researchers state that discovering or detecting an entrepreneurial opportunity is the easier part of the building process while exploiting the opportunity is the harder part (Dehli 2016). Identifying the business opportunity is only the first phase of a venture-building process. Translating the idea into a viable product and sustainable business is another big challenge. Hackathons are of major aid in identifying and initializing a new business opportunity, but they often are criticized for not providing a sustainable way for participants to expand and launch their products into the real market on a long-term basis (Kitsios and Kamariotou, 2023).

The extensive body of research underscores the multifaceted nature of this phenomenon, presenting a myriad of influences. To advance our understanding, this paper aims to analyze and tailor this comprehensive list of contributing factors specifically for technology-based social ventures. It also explores factors emerging from and beyond the hackathon context. Recognizing the need for further research, the authors emphasize the importance of identifying processes and factors that mainly contribute to the relationship between hackathons and the emergence of ventures that combine technological innovation and create social impact. Thus, the research question that this paper will focus on is as follows: *What are the main factors of hackathons accelerating the emergence of technology-based social ventures?*

3. Methodology (Group part)

3.1. Autoethnography

This paper employs an autoethnographic approach, leveraging personal experiences and observations from the authors' journey of building their own technology-based social venture during participation in a hackathon. This autoethnography will pinpoint the primary factors that

were particularly salient and impactful in this specific case. By shifting the focus from a multitude of variables to our core factors, this paper pursues to provide a clearer and more nuanced understanding of how hackathons can accelerate the emergence of technology-based social ventures specifically.

In this study, we use autoethnography, a blend of autobiography and ethnography. Through memory, reflection, and a variety of data formats, such as written and visual materials, we navigate the intersection of self-reflection and cultural observation. While autobiography is a form of storytelling, ethnography involves observing, participating, and writing about a cultural experience (Ellis, Adams, and Bochner 2011).

Autoethnography captures meaningful experiences, that cannot be captured with conventional research methods. This form of social research provides the reader with an insider's perspective, making them feel part of the event (Adams, Ellis, and Jones 2017). It is a form of research that challenges traditional research norms by incorporating the selection and retrospection of past personal and interpersonal events. By comparing our experiences with existing literature, we provide a unique angle to the reader, presenting a novel narrative that is both a profound and vivid description and a thorough analysis of the event. The integration of autoethnography adds a personal touch, making the reader actively engage with our journey and thereby creating a better understanding of the hackathon experience.

The data collection process for this study necessitated a thorough examination of numerous sources. Reviewing notes and pictures from meetings and coworking sessions, along with examining previous prototypes and documents, proved essential in regaining a clear understanding of the application's development process over the preceding months. To ensure a comprehensive grasp of the material, we also carefully analyzed course notes and the curriculum from which the initial idea originated.

Data Source	Type of Data	Content/ Details
Meetings and coworking sessions	Notes and pictures	Insights into collaborative development and alignment sessions
Debrief of hackathon organizer on event	Blog entries	Insights from the organizer's perspective posted on his website and on social media
Previous prototypes and documents	Prototypes, documents	Historical context of the application's development
Course notes and curriculum	Academic material	Foundation and origin of the initial idea
Interviews with investor and team members	Verbal data and notes	Perspectives, insights, and experiences of key stakeholders
Interview for external master thesis	Transcripts	Emotional states, challenges and positive aspects of events
Podcast from investor and renowned entrepreneur	Audio Data	Business advice on the app
Articles on organizing company's website and social media	Published content	Progress updates and insights shared by the organizing company
Articles on university's website and social media	Published content	External perspectives and coverage on the university's website and social media

Figure 1 Data Collection

Furthermore, gathering information through interviews with our investor and team members significantly contributed to the dataset. Post-hackathon, we were interviewed by another participant for their study on hackathons. These transcripts were crucial in reconstructing our emotional state, challenges, and positive aspects of the event. The organizing company of the hackathon also published several articles on our project's progress on their website and shared them on social media, which we also reviewed (appendix 1). The investing mentor and organizer of the hackathon also published a podcast session on our business case featuring a world-renowned entrepreneur and expert in innovation that we examined (appendix 2). Moreover, our university featured an article about our project on their website and reposted it on LinkedIn. As described above, we were able to collect data from various angles, which improved the accuracy and depth of our findings.

3.2. Context of Onesta

The main goal of our project was to tackle mental health challenges among university students. Academic pressures, heightened stress levels and environmental factors such as peer, performance, and community pressure contribute to the difficulties students face (Yikealo, Yemane, and Karvinen 2018). Students often hesitate to seek assistance for mental health issues due to its persisting stigma or as they are confronting self-perceptions that their problems may not be significant enough for proper treatment, time constraints, and a shortage of available psychologists (Czyz et al. 2013).

Our awareness originated from personal experiences at our university. A significant number of students, despite the stress and ambition associated with student life at our university, do not openly seek professional help. Those who do often encounter long waiting times for appointments with the school's psychology department, in particular during the early weeks of the semester. These difficulties arise from transitioning to a new city, adapting to a different culture, being separated from support networks, and navigating a new university environment.

To address this gap, we developed *Onesta*, a peer support app created by students for students. The core idea is to provide students a platform for quick, affordable, and convenient conversations to improve their mental well-being. Users can download the app, register, select a talk buddy, and schedule a session to speak about anything on their minds. The talk buddies are at least master's-level psychology students on their path to becoming therapists, offering peer-to-peer support. These psychology students are well-suited for this role, possessing theoretical knowledge and sharing similar student experiences, given their proximity in life stage and age. Our app was designed not to replace professional therapy but to serve as a complementary tool, offering an additional option for students seeking support (appendix 3).

The idea for our application originated during a class we attended during our master's program titled "Organizing for Good in the Digital Age". This course was designed to equip

students with the knowledge how to leverage technology to create positive impacts. One such challenge, providing accessible mental health care for students, was shared by four students which would later form the core team of *Onesta*.

After group formation, we delved into brainstorming sessions focused on how technology could enhance or solve specific issues related to our societal challenge. Over the course of six weeks, we refined ideas and value propositions, conducted market research, created prototypes, engaged in feedback interviews, and presented our final projects. An entrepreneur named John, who was actively involved in developing a cooperative, gamified problem-solving platform for social impact projects, provided feedback during the pitch evaluation. Intrigued by his positive feedback, we participated in a hackathon he organized, enthusiastically embracing the opportunity to further develop our ideas and address the prevailing stigma around mental health.

The structure of the hackathon consisted of two parts: the initial ideation phase, bringing together individuals such as students, employees, investors, and philanthropists. The subsequent phase, known as the buildathon, occurred a week later, allowing the winning team the opportunity to evolve their prototype into a fully functioning website or application.

Applying the classification principles set out in the literature review, our participation in the hackathon aligns with the classification of a topic-focused hackathon, emphasizing the creation of ideas with societal benefits. Furthermore, it was a gathering open to anyone, hosted on-site in Lisbon with a dynamic nature combining cooperative and competitive aspects. Team compositions were flexible, and the overall atmosphere prioritized cooperative knowledge and skill transfer among individuals and teams. The event nevertheless was still maintaining a competitive element through the inclusion of the prize being the opportunity for the winning team to participate in the subsequent buildathon.

4. Findings (Hannah Langenbach 53327)

4.1. The Ideathon

A few days before the ideathon, all project leads were invited to an extensive lunch meeting to align on the expectations for the following ideathon and to get to know their projects. John, the organizer of the event, spent a considerable amount of time to brief us about its setting and scope, and to clarify any doubts or concerns.

[Field notes from Ideathon April 15, 23]

As first-time hackathon participants, we were excited, curious and open to embrace anything that could unfold during the event. On the day of the ideathon, the Lisbon venue gradually filled up from 9 am, reaching a final attendance of approximately 50-60 people. John opened the event with a welcoming speech, briefly providing an overview of the day's proceedings. During his speech, John shared a powerful quote: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has". This quote instilled a sense of hope and dedication in us, reinforcing our belief that we were in the ideal place to bring our idea forward.

After this inspiring start, the program transitioned into an icebreaker session where each participant was encouraged to give a brief introduction, sharing their motivation, professional background, and even revealing their self-proclaimed superpower. This exercise served as a valuable opportunity to get an idea of the skill sets present among the participants and to understand the collaborative potential at the figurative table.

The second point on the agenda consisted of team leaders presenting their project ideas to the participants. This provided the latter with an initial understanding of the projects available at the hackathon, helping the participants in selecting which project to join in accordance with their respective preferences. It also provided them with insights into where applying their expertise and skills could be most valuable. Following the pitches, participants had an

opportunity to mingle and form teams according to their preferences. Our group attracted a lot of interested individuals who approached us with questions, concerns, or feedback. About 15 participants with diverse backgrounds were intrigued by our idea and decided to join our team, immediately expressing their commitment to contribute to our project.

The subsequent phase of the ideathon centered on crafting an aspirational press release envisioning the future of our app just before its launch to define our goals and identify the essential milestones to reach those. Aligning the opinions of 15 individuals proved to be a challenging endeavor, with conversations frequently straying from the topic at hand as new questions and concerns emerged. This backward engineering exercise, despite the coordination issues, really helped us understand the project's scope and instilled optimism about what might be possible to achieve, especially when presenting the articles to the entire group (appendix 4).

The next point on the agenda included market research and creating user stories, a crucial step to comprehend the existing competitive landscape and avoid "tar pit" ideas. To enhance efficiency, we divided our group and assigned responsibilities with tasks about either conducting market research or creating the most important user stories for our app.

Following the completion of the market research, it was time for a long overdue break. We grabbed a few slices of pizza that were sponsored by the event and went outside to get some fresh air and recenter again from all the overwhelming impressions. Following the break, the participants' focus was directed to the creation of a prototype, which we had already created during our class so that we already had a clear roadmap of the necessary click paths for our users. Our team therefore was able to start refining and enhancing the prototype, expanding on the groundwork we had already laid.

In the meantime, eight mentors noticeably entered the venue, their arrival filling the atmosphere with a mixture of anticipation and nervousness. John asked all participants to gather for a crucial announcement regarding the next item on the agenda: the feedback interviews. The

mentors, with diverse backgrounds such as entrepreneurship, law, and psychology, all introduced themselves to the group. Due to the number of mentors, it was however challenging to absorb and recall each mentor's unique background and expertise when the actual interviews started.

Each of the four interview rounds, consisting of a short pitch of the idea from the relevant project team and a short question and feedback session with two of the mentors, provided an overabundance of questions and insights. There was a noticeable sense of urgency due to the time constraints and quick changes between rounds, which gave us little time to even prepare or take notes in between interviews. The pressure increased as we struggled with precisely recalling each mentor's background and were missing that knowledge to adequately pinpoint our questions towards the mentors. However, each transition gave us an opportunity to polish our pitch and try to increasingly condense the most important parts into a few short minutes.

In the first round of interviews, facing Marc and Peter, two mentors with strong financial and entrepreneurial backgrounds, our pitch was still uncoordinated, and we failed to even clarify which member of the team should present our project or to identify or state our main open issues. While our goal for the app going into the ideathon was to create social value, we had to deal with a lot of inquiries centered on revenue generation and profitability. These exchanges left us feeling frustrated and disheartened, wondering whether the value of our idea was solely dependent on its profit potential. A renewed sense of optimism however surfaced as the interviews that followed covered legal and psychological issues, topics we had explored in greater detail during earlier stages of the hackathon. These latter discussions, by alleviating our previous worries and offering new insights, reinforced our faith in our project's potential. Overall, despite some of the feedback sessions being difficult, all of them ultimately served as an outlet for a variety of insightful opinions that helped us hone and advance the project.

After the interviews, only two more points were left on the agenda: the pitch preparation and the pitch contest. While the pressure was growing, we were asked to put together a presentation that would tell our app's story in an engaging narrative, showing how well we understood any challenges at hand, and offering a feasible solution. Equipped with the insights obtained from our feedback interviews, we attempted to not only conceptualize the potential positive impact of our application but also to clarify how our concept might be developed and implemented in a feasible manner. Despite having a preliminary presentation ready before the ideathon, we felt we were missing time to polish our presentation to the level required in the circumstances.

As the pitch contest commenced, the pressure and nervousness intensified. Each project team's lead was required to pitch their project to a panel of five judges, followed by a brief Q&A session that only allowed for a limited feedback and ensuing exchange. Unfortunately, due to the time restriction, we received only two feedbacks, which had conflicting content and therefore made it difficult for us to assess how well our idea was received by the judges overall. Following the pitches, the judges extended first offers to each team, not disclosed to the audience. Our team received multiple offers and strategically opted for the one with the most favorable project valuation. However, as other judges readjusted their offers, we ended up accepting a total of four offers, all with identical valuations. This tactical decision, suggested by John, ultimately secured our victory in the pitch contest.

[Interview transcripts for External Master Thesis April 2023] After a twelve-hour stretch of collaboration, the hackathon ended past 9 pm. The stress and intensity of the day and the eventual victory left us feeling physically exhausted and emotionally overwhelmed. Even though we had had little time for rest, food, or fresh air because of the persistent pace, we felt that there remained so many actions and discussion yet to be undertaken. During the intense and concentrated periods of work, time always seemed like the biggest limitation of the day.

Reflecting on this experience, we conclude that the purpose and our main benefit of the ideathon was not to create an entirely new idea but rather to use this platform to refine and validate our existing concept. Despite entering with the intention to stay receptive to feedback and variations of our concept, we found that many people were genuinely convinced of our idea and therefore we did not change the initial idea completely within the frame of the ideathon.

While the ideathon initially aimed for a big picture focus due to time constraints, the involvement of numerous individuals sometimes let us face challenges concentrating too much on details. We felt that we had to justify too frequently why certain aspects of our potential venture had not yet been determined or decided. In justifying our evolving project, we reminded others that it was a work in progress, emphasizing the purpose of our presence at the hackathon being to challenge and improve our idea.

After the announcement of us being the winning team, a wave of congratulations, praise and offers of assistance from the ideathon's participants, judges, and mentors swept over our group, affirming the belief in our project's potential and making us excited about the momentum to follow. The enriching experience, including the feedback sessions and the collaboration with diverse backgrounds, provided not only valuable insights but also support and motivation to continue the refinement and expansion of our project.

After the ideathon, we took a proactive approach to express gratitude and seek insights from judges and participants, emphasizing their essential contribution to determining the course of our project. Meetings with mentors, including those from the judging panel, offered meaningful opportunities to gather a more conceptual understanding and real-world application. The two mentors who had taken part in our first feedback interview and who were also part of the judging panel agreed to meet with our team. Their business-based viewpoint offered a special blend of conceptual understanding and real-world application, which greatly aided our post-hackathon contemplations. Both mentors' dedication to staying in touch with us and

agreeing to meet us after the official event highlighted the spirit of cooperation fostered throughout the hackathon.

Winning the ideathon meant advancing to the buildathon, a turning point in our journey where our idea would receive development aid. The buildathon was not just a chronological progression but a transformation, symbolizing the transition from concept to digital reality. We were excited about how our app could take off in the digital world, an interesting intersection where theory meets praxis, showcasing transformation potential of innovation.

4.2. The Buildathon

[Field notes from Buildathon April 22, 2023]

One week later, we engaged in the buildathon, another pivotal event for the development of our venture. The week between the events allowed us to recover from the stress of the ideathon, to pause and to reflect on and consider the wealth of received feedback and collaborative ideas, allowing us to start the buildathon with a more refined vision of our project and a clearer understanding of the requirements for progress and the necessary next steps (appendix 5). The prospect of leaving the buildathon with a fully functioning website fueled our excitement and motivation.

Hosted in a cozy co-working space in central Lisbon, the smaller group of eleven created a more intimate setting than in the previous ideathon. It was a significant change from the bustling energy of the ideathon and constituted a more concentrated and organized collaboration environment. Despite winning the pitch contest as a larger group, we decided to adhere to the core team for the buildathon, extending invitations to others as a gesture without obligation.

During the buildathon, the dynamics were much more fluid, making our ideas flow more easily and the bond within our group grew stronger. It felt like the journey we were on together was more than just winning a prize during the ideathon - it was an intrinsic motivation to achieve a common goal of helping people in need. We started by splitting the group into three different

teams - the strategic thinkers, the interviewers, and the developers. The strategic thinkers identified the remaining tasks and reviewed, while two mentors joined, eager to become familiar with our project and to contribute their expertise where needed. The first mentor, an entrepreneur in the mental health app space who provided an inside look and also presented an opportunity to investigate cutting-edge technologies. This mentor offered his AI plug-in for free, enhancing our app's differentiation. The second mentor, a lawyer, provided crucial legal advice given the ethical, moral, and legal considerations in this complex and sensitive sector.

The interviewers conducted ten open-ended user interviews in diverse locations to gather insights about users' coping mechanisms during challenging times and sought feedback to adjust the prototype (appendix 7). Simultaneously, John and some participants from the tech industry, including a remote developer from California, formed the third group. The solo developer then continued to implement the user stories, aiming for a fully functioning minimum viable product by the end of the buildathon. The day that we presented our final idea to the class, John told us "What if I tell you that we can do it within a weekend?". Despite not achieving the promised MVP within the buildathon, our confidence remained high that with a modest increase in time, we could successfully complete the MVP in the coming days.

4.3. Follow Up Meetings

[Field notes from Feedback Meeting April 24, 2023] In the hope of learning more of potential problems of the project, we approached Peter, one of the judges who decided not to invest in our project, for feedback on our pitch. During the pitch contest, he gave the impression of being a strict and serious person. In stark contrast, our next one-on-one conversation with him showed him to be exceptionally kind and supportive of our idea. During our personal exchange, Peter became a mentor who cared about our development, giving us priceless advice and insights based on his background in the startup scene. His helpful constructive criticism aided us in recognizing the problems we needed to solve and determining whether our app in

its current configuration offered a valid solution. This interaction was more than just objective feedback and rather felt like a mentoring experience that made us reevaluate our own beliefs and conceptions. The shift in attitude from a perceived harshness at the beginning of our interaction with Peter during the ideathon to the extremely supportive sharing of helpful advice revealed how asking for feedback should always be pursued because it may have an extremely beneficial, even transformative effect and can lead to unexpected mentorship.

[Field notes from Feedback Meeting April 28, 2023] A couple of days after our conversation with Peter, our team lead had a meeting with Marc, another hackathon judge, that also extended beyond merely giving quick feedback. Based on the intensity of the session and its duration of three and a half hours, this meeting was a dedicated interaction on both sides that covered a wide range of topics, including our concept, business model, strategy, and vision. The meeting could therefore also be characterized as a mentoring session. During the session, Marc gave us valuable tips on how to work with investors and incubators as well as information about regulations, company formation, equity distribution, funding strategies, accountability frameworks, exit plans, and much more. During this meeting, Marc proposed to provide ongoing mentoring to our project, using his expertise gained in Silicon Valley. Being our main challenger - especially because he encouraged us to think more in a business sense than we had been until then - it would have been a brave choice to get him on board. His business acumen and his generous willingness to share it with us would have been indispensable, had we been looking to develop our project into a profit-driven venture. Nevertheless, as we intended to build the app primarily for the university's and our fellow student's benefit, Marc accordingly was not the perfect match to mentor us in pursuing our specific idea.

[Field notes from Meeting April 28, 23] During the next gathering with the core team and our investor, we reached a major milestone within our project, collectively choosing the name for our brand. After extensive research and careful consideration, we all agreed on the

name *Onesta* and secured the respective domain, “*onesta.space*”. We felt a sense of relief which felt energizing to our creative outflow. The name was an important piece of our corporate identity and unlocked the opportunity to finally create a logo and official pitch deck, which solidified our brand and made us feel very proud (appendix 3). This process allowed us to integrate and showcase our extensive groundwork, including market research, our mission, business model, differentiation and other key components into a pitch deck. As a result, we were able to refine our prototype (appendix 6).

[Field notes from meeting on May 04, 2023; Articles published on May 30, 2023]

Having started the application in class, one of the feedback interviews we conducted was with the chair professor in our school’s innovation center for social impact. We reached out to her again after the hackathon and received an invitation for a feedback interview, facilitated by the initial contact with her through the university. Due to her extensive experience in the entrepreneurial scene, she was able to provide us with important contacts that further extended our network. Her overall enthusiasm and confidence in our idea, along with her trust that we would be able to tackle one of the school’s biggest problems increased our motivation to proceed further. We highly valued her input as she represented the intersection of social innovation and our school’s underlying problems, making her an expert in the exact field we needed.

[Field notes from May to September 2023] In the meantime, we started meeting with our university’s psychology department to collaborate on our project. This department is responsible to provide crucial mental health support to students, connecting them with psychologists to address their problems. Recognizing the persisting waiting times for students, the department expressed high interest in our idea, envisioning its potential to support their work and increase student satisfaction and mental well-being. Initially, this collaboration

seemed very promising, but ultimately the department was unable to allocate time and financial resources to support our project.

[Field notes and articles published from May to September 2023] Besides the psychology department, also other departments have become well-informed about the details of our project, with many faculty members reaching out to us to as they were genuinely interested in our approach. One notable aspect was the publication of an article on the university's website and social media accounts, showcasing our project and raising awareness within the academic community (appendix 1). Some also tried to proactively engage in our project by providing suggestions for relevant events, such as mental health talks and panel discussions, but also enriched our network by connecting us with additional contacts. Having the university support our project was of immense importance for us which increased not only the project valuation but also the credibility, contact reach, and much more. The standing of our project but also our insights gained have significantly improved from these initiatives within our university.

[Field notes from several coworking sessions in May 2023] A series of coworking meetings followed with our investor and the core team, unfolding a collaborative environment regularly where each event promised a certain progress. As some of the gatherings were coordinated via John's social project website, other contributors and helpers from diverse backgrounds, from Russian psychologists to French tech developers, joined in. Having different perspectives enriched our coworking sessions, providing additional insights and feedback.

[Podcast published on May 22, 2023] Adding to our momentum, John hosted a podcast featuring a world-renowned expert in innovation. They discuss the scenario of our app and potential next steps, covering frameworks and giving an overview of the mindset necessary to approach intimidating problems. Hence, we did not just get more reach and credibility, but also basically got a 90-minute business coaching session for free (appendix 2).

During the summer break, we faced some organizational challenges. With the team being dispersed across three countries and involved in time-consuming internships, coordinating communication for critical decisions such as which type of funding to use, how to overcome legal restrictions, and what features to include in the application, became increasingly difficult. Keeping a good communication and task divisions proved to be much harder than in Lisbon, ultimately resulting in a noticeable drop in motivation and confidence. Despite these hurdles, we tried to stay in contact with our investor and were simultaneously working on essential tasks such as survey distribution, competitor research and figuring out how to raise additional funding to complete our MVP. Realizing that several months have passed since the hackathon, yet still lacking a tangible product for market testing, left us feeling frustrated. The initial plan was to launch the application in September in cooperation with the psychology department but both parties could not deliver what has been brought to the table initially. However, as we knew that we would reunite in September, we were optimistic about the project picking up again.

[Field notes from meeting on September 17, 2023] After returning to our university, the initial days seemed promising as we got an interesting mail from a faculty member, offering us a one-to-one Q&A session with a visiting mental health expert. The talk presented an opportunity for us to learn more about the current research and existing landscape in the field, but ultimately also led to our decision to pause *Onesta* due to its complexity regarding the lack of psychological expertise and legal concerns. As we have already been losing momentum over the summer, this talk echoed our growing doubts and reinforced our decision to focus our energies on our academic pursuits for now.

While we mainly got positive feedback and encouragement throughout the development process, we also faced some critiques and concerns, particularly concerning similar existing ideas on the market or ethical concerns in this highly sensitive sector. While nearing the

intended launch in September, the necessity for extensive psychological and legal expertise to avoid significant legal complications became evident. These concerns, combined with feedback from experts who gained decades of experience in this field, increased our doubts on *Onesta's* viability and our capabilities as university students to innovate in such a complex area.

Additionally, we were stuck with our MVP, lacking the technical skills to integrate essential features which is why we were dependent on further external development aid. We found a company that could implement these changes and our investor was willing to fund a big portion of the advancements but insisted on including some features that did not align with our vision for Nova's psychology department. Hence, we faced the choice of whether to accept funding that compromised our goals or seek alternative funding sources such as crowdfunding.

These challenges led to a loss of momentum, and ultimately, to the decision to pause *Onesta* until after our studies. In the meantime, we aim to enhance the skills essential for advancing the project. With one team member embarking on a role as a no-code developer, another involved in crisis chat support for students, and a third working alongside a therapist, we expect to improve not only our technical abilities but also our understanding of psychological and legal aspects. Despite the setbacks, we remain convinced of *Onesta's* potential to not only help our university but also improve student mental health globally. Therefore, we plan to further develop *Onesta* when we can dedicate the necessary time and resources to address these challenges.

The following table provides a structured overview of the key aspects and challenges encountered at different stages of the *Onesta* project development, encompassing the pre-hackathon phase, ideathon, buildathon and post-hackathon activities. Each phase has unique characteristics and challenges that help illuminate the project's journey. This breakdown aids to comprehend the complex dynamics at hand when creating a technology-based social venture

and provides not only a chronological roadmap but also offers insights into the challenges inherent in the development of our application.

	Key Aspects	Key Challenges
Pre-Hackathon	Idea development in class, team building, define the team’s vision	Aligning expectations
Ideathon	Idea co-creation, refinement of ideas, incorporating diverse participant viewpoints, feedback interviews, prototype development, pitch presentation	Need for clear leadership and decision-making, managing team dynamics, aligning project goals with social impact, ensure feasibility of proposed solutions
Buildathon	Idea and prototype refinement, development of user stories application development, user interviews, expert feedbacks	Technical challenges, integrating complex features, resource constraints
Post-hackathon	Further development of MVP, leveraging hackathon momentum, brand building, university collaboration, networking, mentoring	Aligning business goals, legal & ethical considerations, organizational issues, technological constraints, securing funding and more expertise for continued development, ensuring lasting positive impact

Figure 2 Onesta's journey

5. Discussion (Group part)

5.1. Hackathon Factors Influencing the Emergence of Onesta

As highlighted in the literature review, current research has already illuminated numerous factors in understanding the significant role that hackathons play in fostering the emergence of innovative startups. These factors revolve around various dimensions, including the strategic use of technology, the appropriate selection of stakeholders, generating awareness, the co-creation of collaborative ideas, the nurturing of a non-judgmental atmosphere, non-hierarchical relations, and democratic decision-making processes. The number and diversity of factors identified by different authors showcase the complexity of the relationship between hackathons and the emergence of innovations. This paper aims to simplify this complexity by focusing on a relatively underexplored niche: the impact of hackathons on the emergence of technology-based social ventures. The hackathon in which we participated was able to

transform our initial idea from a university course into a work-in-progress website that would otherwise have been disregarded after the end of the course. Several factors regarding that hackathon, which are also mentioned in the literature review, facilitated *Onesta's* emergence.

Firstly, the hackathon fostered an environment of *idea co-creation*. The successful emergence of idea co-creation was inter alia enabled by the *non-hierarchical relations* between the participants and a generally *non-judgmental atmosphere* where everyone's opinion was heard. One example of this was the co-creation of the aspirational press release. Before drafting the text, every team member engaged in brainstorming and wrote their respective contribution on sticky notes, resulting in a big mind map that was used to write the final aspirational press release. The opinions of each member of the team were thereby gathered and considered, making every contribution matter. This is a good example of a successful idea co-creation, facilitated through the ideathon: If we would not have had all the input from our eleven team members, we would not have been able to consider and include as many details and remarks in the aspirational press release as we did.

Nevertheless, having many opinions included and considered at every step of the process with no one being in full charge of making final decisions sometimes slowed down the process, for example, in the form of ineffective, lengthy discussions with no clear result. For instance, despite of excessive prior discussions among all team members, the creation of our final pitch ultimately fell to our team leader, who then had to manage it single-handedly and under time pressure. Trying to take everyone's opinions into consideration can be very time and energy consuming. We have experienced that idea co-creation is very fruitful and adds a lot of creativity to the process but there needs to be a clear definition of each member's role with a clear team lead or core team that gets the final saying in decisions for tasks to get done efficiently. The final pitch presentation, although mainly done by the team lead alone, still was

a co-creation in the sense that it included different viewpoints, incorporating insights collected throughout the whole ideathon.

Secondly, *efficient knowledge transfer* proved to be another invaluable factor in the emergence of our application. During the different phases of the ideathon, all kinds of participants and mentors, even though not part of our team, provided their input and their skills to help us refine our idea. Many offered to assist us in case their expertise was relevant to specific needs. A good example of efficient knowledge transfer were the feedback interviews that were integrated in the ideathon process. The mentors organized by John for the feedback interviews had very different backgrounds in different fields such as entrepreneurship, business, and psychology and therefore gave us very diverse tips for the development of our application. One of the valuable tips we got from the mentors, for example, was to cover the legal issues that could arise from developing and launching an application in the mental health field by employing disclaimers drafted by a legal expert in that field. All this feedback was invaluable and if possible, successively incorporated into our prototype during the buildathon.

Knowledge transfer, however, was not that efficient at all stages of the hackathon. For example, at the end of the hackathon when all the pitches were made to a panel of five judges who were then able to give feedback on the ideas as well as the presentations. The problem was that only a total of two minutes of feedback were allowed for each presentation, resulting in only one or at maximum two judges being able to give each team their feedback. The feedback from the rest of the judges was never communicated, only reflected in their final decision whether to invest in a certain idea or not. The knowledge transfer from the judges during the ideathon could therefore be classified as incomplete. Since the judges at the pitch presentations were highly experienced experts, some having hands-on experience in launching social start-ups, we were eager to receive all their feedback. Following the hackathon, we proactively

reached out to each judge individually to solicit their insights, as we recognized the value of that knowledge transfer that had unfortunately been suppressed during the event.

Thirdly, the strategic *creation of awareness* prior to the hackathon not only streamlined the time-efficient execution of essential tasks but also laid the groundwork for effective coordination among participants. All participants were required to submit an online application, encompassing their skill set, communication preferences, and an overview of the hackathon's aspiration to address urgent societal challenges. Furthermore, as mentioned in the Findings section, a pre-hackathon meeting brought together team leaders and organizer John to specify the event's central purpose and align expectations, establishing a shared understanding well in advance.

However, it is worth noting that the advance creation of awareness fell short in one respect. As some key stakeholders, including mentors and investors, were not present in the preparatory meeting, not all individuals possessed the same level of awareness regarding the event's primary focus. This discrepancy became notable in the feedback interviews. Two of the mentors, Marc and Peter, mainly gave us feedback on launching our application as a business-to-business product to maximize profitability, which was not compatible with our intention of providing free mental health support for social benefit. With greater awareness of the hackathon's social orientation, these mentors might have provided more helpful advice. This misalignment, particularly concerning the emphasis on social good over profit generation, highlights the need for increased awareness among all stakeholders, including invited mentors and judges, in hackathons with a clearly defined social goal.

Fourthly, we opted for a no-code platform to establish the technical infrastructure for our application, guided by John's recommendation and his experience in relevant platforms, foregoing further research on potential alternatives. The selected platform is renowned for its user-friendly website building capabilities, also for users with limited technical expertise.

However, despite our efforts at and after the buildathon, we encountered challenging obstacles that hindered our product from evolving into a fully functional solution ready for market testing. For example, integrating a video function resulted to be more complicated than anticipated and could not be achieved until now. While this platform initially appeared to be a suitable technological choice, we unfortunately lacked the necessary *technical abilities* and development support to fully refine the application for launch. Consequently, additional and qualified professional development aid was essential to finish the MVP post-buildathon.

Lastly, the *stakeholder selection* for the hackathon facilitated interactions with experts from diverse backgrounds to challenge and refine our idea. Being able to engage with entrepreneurs, developers and psychology experts tested the feasibility of our idea in terms of IT development, psychological aspects and entrepreneurial opportunities. Despite the diverse participant pool, the varied skills available at the hackathon were however still not sufficient to completely fill the three biggest gaps in our expertise: technology, psychology, and legal knowledge. After the hackathon, we still lacked a fully functional prototype, psychology students as volunteers for our application and legally sound disclaimers. Accordingly, we were still heavily dependent on a growing network and further development aid to build a launchable product highlighting the challenges in converting an initial prototype into a realized product.

All the underlying factors of hackathons identified in this paper, have strongly contributed to the emergence of *Onesta*, however are mainly limited to the scope of the event itself. The focus of this paper, however, goes beyond the hackathon. Despite the numerous benefits accrued during the hackathon, in line with the findings from various studies, we have found them to be insufficient for the launch of *Onesta*. In this context, we aim to shed some light on the typical post-hackathon event occurrences and the crucial factors which derive from the participation in a hackathon.

As mentioned in the literature review, hackathons serve as a valuable platform for ideation around new business opportunities. However, they often lack providing sustained support necessary to translate initial ideas into a viable business. While the hackathon we participated in offered short-term benefits, the enduring relationships that resulted and developed thereafter proved paramount in developing *Onesta*. Based on our experiences, we assert that sustained mentoring and networking opportunities are the most impactful contributions a hackathon can make towards building a new technology-based social venture. By facilitating connections that extend beyond the hackathon, coupled with essential guidance from mentors, hackathons can effectively lay the groundwork for overcoming the common challenge of ideas stagnating after the event. The enduring spirit of networking and mentoring post-hackathon significantly allowed us to push forward the development of the venture which might not have otherwise come to fruition.

The figure below illustrates the journey of our application, showcasing its evolution from the ideathon stage through the buildathon and into the post-hackathon phase. This framework encompasses the most important factors that significantly contributed to the development of *Onesta*, encompassing the outcomes from the idea to the actual application. The figure underlines the continuous efforts required beyond the confines of the hackathon environment, given the multitude of challenges we encountered that surpassed our capacity to address independently, due to a lack of expertise in many fields. It shows that certain factors unfold their influence primarily within the event itself, providing more immediate solutions. While these elements enhance the quality of networking and mentoring offered during the hackathon, they are viewed as less significant and all-encompassing. In contrast, the two overarching factors networking and mentoring are identified as being more crucial and long-term oriented. These factors are vital in bridging a variety of issues that cannot be adequately

addressed by individual factors alone. Building a social venture, necessitates a sustained, coordinated effort extending beyond the hackathon.

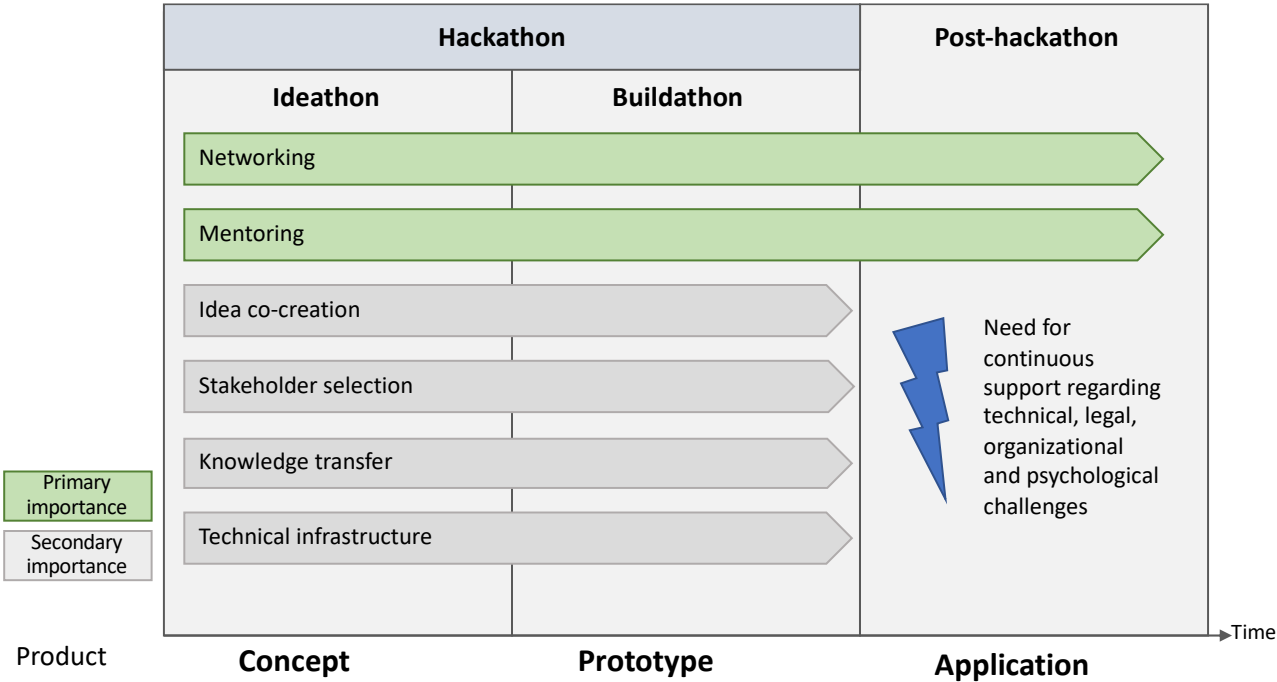


Figure 3 Critical factors accelerating the emergence of Onesta

5.2. Networking

The literature review and our experience have confirmed that building an innovative technology-based social venture tends to require the expertise of a range of specialists with different backgrounds. Hackathons have a unique way of uniting people who would not have usually met and inducing knowledge sharing that would otherwise not have taken place (Dehli 2016). Through this reunion of different specialists, participants get the unique chance to build a social network that is more fruitful and diverse in terms of cultural, regional, and skill-related backgrounds than an individual could build on their own in such a short time. Participants and organizers often form lasting connections, which can be leveraged for ongoing support, mentorship, and funding which are of major importance when building a social venture. It can even be argued that the most important output of a hackathon is not the tangible output such as a prototype but rather the community that develops throughout the hackathon (Briscoe 2014).

One of the most valuable experiences during our hackathon was that it provided the ability to create the necessary network to allow us to move our project significantly forward even after the hackathon. Even though we had been highly passionate and ambitious about our idea after the university course, we found ourselves lacking the necessary experience, skills, and network needed to create a business. By contrast, after having taken part in the hackathon, we not only had been able to extensively advance our idea and prototype via our participation at the hackathon but also gained contacts and an expanding network on which we were thereafter able to build on for the future development of *Onesta*.

The networking opportunities created by attending the hackathon aided our project most significantly in two ways. Firstly, they opened doors by enabling us to build new connections to experts in their respective fields. Starting as a team of four female students in the same master program and of roughly the same age, each of our networks was largely homogeneous, with many contacts in business-related academia and few contacts to experienced practitioners in the social, psychology, and technology sectors – the input of which our project obviously required to have a chance at success.

The hackathon facilitated direct connections with psychologists, entrepreneurs, and especially technology experts who would otherwise have been out of our reach. For instance, on the second day of the hackathon, the buildathon phase, we connected with a highly skilled and motivated technology expert from California. This specialized web developer, whom we certainly would not have been able to identify, approach or convince to engage in the early stages of *Onesta's* development, generously assisted in building our MVP, contributing significantly to the overall development of the website. This generous expert's input was even provided on the weekend and completely free of charge. The networking started during the hackathon and extended beyond the event, with various experts across multiple disciplines offering their continued support. We later made innumerable connections on LinkedIn, gaining

invaluable assistance from all kinds of participants of the initial hackathon that offered further support. An example demonstrating the hackathon's role in enhancing our networking opportunities well beyond its duration and initial scope was our investor's producing a podcast episode featuring a globally recognized innovation expert. The two experts discussed the winning project of the hackathon during the podcast which not only broadened our exposure to the general population but also provided us with insightful feedback from another experienced professional in the field.

Secondly, next to directly expanding our network, the hackathon also indirectly broadened our network after the event had taken place. Winning the pitch contest at the hackathon improved the university's perception of our project and facilitated important relationships with members of the mental health department at Nova SBE. The collaboration with them was instrumental to gain credibility for our project and will be instrumental to promote user adoption on campus once the application is launched. Our project's winning the hackathon also facilitated contacts with the university's Impact Entrepreneurship and Innovation faculty, renowned for their extensive experience and vast network within the entrepreneurial sector. A proof this faculty furthermore facilitated the introduction to other key contacts within the university and other institutions, potentially further expanding the reach of our application. Moreover, our school published an article about our application on LinkedIn and on Nova's website, effectively increasing awareness about our project. As of now, John has assessed the project's current value at around EUR 25,000, primarily attributed to the network and standing we have been able to cultivate at the university. We are convinced that winning the pitch contest has undeniably enhanced the credibility of our project among key contacts within our university. Gaining the necessary recognition would have likely been immensely more time-consuming and challenging without this accomplishment.

5.3. Mentoring

The second factor resulting from the hackathon which we found to be decisive in the long-term creation of *Onesta* is mentoring, in particular due to our team's limited work experience. At the hackathon, mentors challenged our concept, providing constructive feedback and helping us to keep our focus on the right things. Also our follow up meetings with previous hackathon judges such as Marc and Peter proved to be invaluable. However overall, John was by far the most important mentor for *Onesta*.

John's diverse expertise, ranging from web development and entrepreneurship to leadership, offered indispensable crucial and competent guidance in creating our venture. We kept in touch throughout the entire process, reaching out whenever challenges arose. John accordingly was always up to date about our progress and struggles and could invariably provide valuable insights and recommendations. After the hackathon, we had countless meetings with John during which he helped us with key aspects such as refining user stories and prototypes, identifying new avenues for improvements and finding funding, involving investor communication, to name a few. For example, his advice to conduct thorough research before settling on a company name was a vital step that enabled us to secure the corresponding domain and to establish our corporate identity. John further assisted us in selecting the most suitable platform for developing our application. Next to being a big supporter of our concept, he also was constantly challenging our ideas and offering alternatives or more feasible solutions. Without his guidance and advice, we would not have known which steps to prioritize at what time of the process.

Not only John's entrepreneurial and technological expertise but most notably, his unwavering moral support and encouragement were decisive in enabling us to develop *Onesta* thus far. Having someone believe not solely in the viability of the idea but also in our being able to develop it, helped us to overcome our lack of confidence and of knowledge of how to

proceed. He encouraged us to keep our efforts up in building our social venture in addition to our study load. Creating a new business or institution, especially in the social sector where profits will presumably not be high, requires determination and endurance. Without John's support, we might have completely stopped our project, having lost confidence in our capabilities or motivation along the way. When building a technology-based social venture, we believe that psychological aspects of motivation and willingness to stay with the project are almost as necessary as capabilities in coding, work experience, or entrepreneurial knowledge. Through any concerns which arose regarding the ethical and legal challenges associated with our idea, John reminded us that creating a venture always inherently involves overcoming significant obstacles and highlighted the potential value of our idea for society, raising our intrinsic motivation to develop the application and help our fellow students.

Mentoring can especially become valuable regarding funding-related issues. Given that our application would operate without a profit-oriented focus, securing investment sponsors proved to be a critical and difficult step. All our investors were connections John cultivated through his experience as a known and respected founder in the tech venture scene. John's mentorship gave credibility to *Onesta*, presumably influencing investors to trust and support our project, effectively making John's network an extension of our own. Furthermore, John's vast network, including IT developers, psychologists, legal experts, and business professionals, opened essential doors for *Onesta's* development. All these specialists were motivated and willing to help us due to their knowing John and valuing his assessment of promising ideas. We were able to forgo specific funding needs due to the pro bono support generously provided by several of these experts.

When choosing a mentor for a potential venture, it is critical to find a mentor whose vision aligns with the project's specific goals. During a follow-up meeting another judge, Marc, offered to mentor us with a profit-driven approach. While Marc's input was valuable, we

decided not to pursue the offered mentorship, recognizing that following our mission to help students from our university for free was more important to us than *Onesta's* becoming profitable. Marc's mentorship could potentially have completely changed our venture's projection and have stunted our idea of providing free care for mental health challenges. John's background as an experienced entrepreneur, his track record of founding companies, and his commitment to supporting specifically social ventures made him the perfect fit for our project.

To conclude this discussion, we can confirm that *Onesta's* existence highly depended on the hackathon that we were able to take part in. Without the hackathon, our project would probably have ended at the termination of the academic course, lacking the motivation, expertise, and funding required for further development. Most importantly, we would presumably not have been able to overcome our lack of confidence in the potential feasibility and outcomes of our idea. The hackathon, combined with mentoring and networking opportunities available to us, thereafter, transformed our initial class project into a functioning website, making *Onesta's* further development possible.

6. Concluding Reflections

6.1. Limitations

We examined the relationship between hackathons and the emergence of technology-based social ventures through an autoethnographic approach, thereby incorporating our personal experiences in the analysis. Relying on autoethnography, despite its suitability for this unique context, possesses inherent limitations that will be discussed in the upcoming section.

Since autoethnography relies mainly on individuals' personal experiences, the subjectivity of the reported events is inevitable. To mitigate this, we incorporated viewpoints from several stakeholders involved in the process of building *Onesta*, including team members and mentors. We included their experiences and reports to enrich our analysis and enhance

result accuracy. Compared to more quantitative research methods, autoethnography's dependence on subjective experiences makes it more difficult to validate findings. We believe that adding more quantitative data in the future could enhance the robustness of our research.

Furthermore, we recognize that biases such as confirmation bias persist, i.e. the tendency to interpret the environment or new information in a manner confirming one's current already existing beliefs and opinions. To reduce this, we committed to rigorously scrutinizing our findings and looked to always seek alternative explanations actively. While we tried to minimize our biases, achieving a complete elimination of all biases is unrealistic. It is therefore essential to keep this limitation in mind when interpreting our results.

Additionally, our study's scope is limited to the unique circumstances surrounding our project. We benefited from the involvement of John, who was initiating his company and sought a flagship project – and our venture fit the profile he had in mind. This specific dynamic, marked by our mentor's high level of commitment and reliance on our project's success, may not be replicable in other contexts. Moreover, having entered the hackathon with an already developed concept and prototype may have positively affected our chances of success. The applicability of our findings may not extend to all hackathons or technology-based social ventures. Since such events and ventures can have very distinct appearances and forms, our results may not be generally representative.

Furthermore, the autoethnography approach necessitated the inclusion of confidential talks and meetings with third-party individuals from which we cited private opinions, attitudes, and reactions when they were relevant to our story and our resulting findings. To ensure the privacy and confidentiality of all involved parties, we have used pseudonyms for all mentioned characters in this paper. Finally, the time frame of this study and the development of our application should be considered. *Onesta* remains in the developmental phase and is currently on hold, the prognosis of its success is uncertain, which could impact the validity of our results.

The public launch will occur only after this paper is completed and could influence the interpretation of the results.

6.2. Future Research & Recommendations

This study fills a gap in the current literature on hackathons and start-ups. While considerable research has been published on the relationship between hackathons and the emergence of innovative ideas or start-ups, little to no research can be found on the relationship between hackathons and the emergence of technology-based social ventures. In our current environment of increasing digitalization and globalization, fostering innovations with social impact and supporting organizations that focus on making a positive impact via hackathons can have a major influence. The importance of this impact can surpass the boundaries of a single community, region or country and can potentially resonate globally. In this digital world, innovations from one continent can easily transverse international borders and help people far away. It is therefore of great relevance to societies around the world that the development of more technology-based social ventures is fostered and encouraged. These kinds of projects can address global issues and significantly improve the lives of people everywhere. Cooperative endeavors aimed at propelling technology-based solutions highlight the significance of a collective dedication to positive change on a global scale.

The concluding outlook of this paper is the following: several promising avenues for future research are recognizable which could further enhance the understanding of the subject. Considering the above-mentioned limitations, our autoethnographic findings should be complemented by conducting additional quantitative and qualitative research. A compelling future research topic could be the long-term sustainability and success of technology-based social ventures originating from hackathons, exploring the specific factors contributing to their growth, survival, and scalability beyond their initial stages and whether either of these can be traced back to having been created via a hackathon.

Additionally, we believe ongoing research to be necessary to validate and extend our understanding of the relationship between hackathons and the emergence of technology-based social ventures in diverse contexts and under varied conditions. Conducting comparative analyses between different countries or regions could be interesting, examining the precise cultural, economic, and regulatory factors affecting hackathon outcomes in fostering social ventures. Such analyses may identify adaptable best practices on a global scale.

Our findings yield several recommendations for hackathon organizers on promoting the evolution of hackathons effectively to facilitate the emergence of technology-based social ventures. Firstly, considering the challenges faced in knowledge transfer during the hackathon, we propose the implementation of more effective feedback mechanisms during future hackathons. To enhance the exchange of valuable insights from experienced judges, we suggest extending the feedback time allocated to judges during and after the pitch presentations. Additionally, we recommend establishing a structured feedback process that ensures clear communication of the feedback from all judges to all participating teams. This will enable teams to benefit fully from the experience and expertise present at such events, creating a more productive and collaborative environment for innovation.

Secondly, adequate time and resource management are vital for the hackathon's success. A two-day duration, as we experienced, allows sufficient time to brainstorm, develop and iterate on their ideas. Shortening it to one day as many hackathons are organized, risks compromising the quality of the solutions. Even with a pre-developed idea, our two-day hackathon did not result in a fully launchable MVP, mainly due to time constraints, emphasizing the importance of pre-hackathon activities such as team building and aligning expectations. These efforts contribute to enhancing outcomes by allowing more dedicated time to focus on developing the actual idea. Another factor that may have benefited the emergence of the MVP would be increasing the funding opportunities when winning the ideathon or introducing other incentives

to the winning team such as dedicated mentoring or a more experienced technology team. Due to limitations in the technical expertise, an additional funding could have enabled to hire external development help. Thus, careful planning, a two-day duration, and strategic financial investments, including tailored incentives, are crucial for hackathons aiming to produce viable prototypes with market potential.

Thirdly, considering our difficulties in decision making that became apparent at times during idea co-creation, it is essential to define an appropriate number of participants for the individual teams as well as the whole hackathon in general. While a hackathon benefits from a significant number of participants, it is essential to strike a balance. Too many participants can become unwieldy, making it challenging for organizers to manage and for participants to collaborate effectively. It might be helpful to set up the teams before the hackathon starts. This ensures that groups are of a manageable size and can collaborate efficiently without having to use up too much time in team finding and building. In our case, we were already a set team of four core members before the hackathon started, which proved helpful when making decisions. During the hackathon, around eleven further participants were involved in our project. If we would not have had the set core team of four decision-makers, we would have had difficulties to reach the required conclusions in the given time frame since all participants had very different opinions.

Lastly, conducting thorough satisfaction evaluations for both organizers and participants after the hackathon is essential. Such evaluations play a pivotal role in pinpointing the event's strengths and weaknesses and pave the way for essential improvements in future iterations of the event. Thorough feedback loops of held events ensure a more efficient and strategic execution of future hackathons, ultimately enhancing the overall experience for all stakeholders.

6.3. In Conclusion

This comprehensive study explores the role of hackathons in accelerating the development of technology-based social ventures, with a specific focus on the project *Onesta*, a free mental health application for students. Employing an autoethnographic approach, this study presents a personal perspective on the entire journey from pre-hackathon preparations to post-event activities. While offering first-hand insights, this approach inherently entails subjectivity and potential biases.

The results indicate that while hackathons are effective in idea generation and initial prototype development, their main value lies in fostering enduring relationships and networking opportunities. These interactions, particularly in mentoring and networking, emerge as central factors influencing the success of hackathons to facilitate the creation of innovations and support long-term development. These connections prove crucial for overcoming post-hackathon challenges, including technological, legal, and organizational obstacles. The journey of a venture extends far beyond the hackathon, requiring adaptability, interdisciplinary collaboration and continuous learning. Moreover, the relationships built through the event significantly enhance motivation, dedication, and creativity.

Crystalizing these two main determining factors can help hackathon organizers in structuring their events more effectively, with a higher success rate in resulting viable technology-based social ventures. The experiences and insights provided from the *Onesta* project offer practical lessons for hackathon organizers, highlighting the need for structured mentoring and sustained support from network connections, especially in complex and sensitive sectors like mental health. The thesis also contributes valuable recommendations for future research and practice in the field of social entrepreneurship, emphasizing the necessity for a holistic approach to design a hackathon that goes beyond the sole product development and focuses on building a nurturing ecosystem for innovation.

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Appendices

Appendix 1 – Nova Article about *Onesta*

17/12/2023, 12:07

Onesta: Nova SBE Students Present Idea to Mitigate Youth Mental Health Problems

STUDENT HUB EN PT CN

NOVA



< BACK

Society | 30 May 2023

Onesta: Nova SBE Students Present Idea to Mitigate Youth Mental Health Problems

Youth mental health problems are growing at a fast pace. Despite there being many technological solutions to stay connected, those don't prevent feelings of loneliness. Dorra Ben Tahar, Hannah Langenbach, Julia Rodriguez-Bustelo Fricke, and Lilian Friedrich, four Nova SBE students, want to tackle this ongoing crisis.

To do so, they created **Onesta – Your Safe Space**, an app that connects students with volunteer-staffed psychology students and graduates to provide quick, cheap, and convenient peer-to-peer support. This enables a feeling of community and belonging, greater social connectiveness, emotional support due to the virtual safe space with people in similar stages in life, and many more.

Onesta was the winning project of the latest **Problematic Ideathon** edition, a high-profile platform that connects idea generators, funders, software developers, designers, UX researchers, etc., intending to address societal challenges. The 4 students came up with the idea and prototyped the app in professor Paolo Leone's course "Organizing for Good in the Digital Age". In this new exciting project-based course, Paolo Leone, an Assistant Professor in Social Innovation, and member of the ERA Chair in Social Innovation, helps students build new apps to address societal challenges. **More than an idea, Onesta is a living example of how teaching can go beyond the classroom and support the generation of solutions that create impact and value for society.**

After winning the Hackathon, Onesta's first steps will be to approach psychology or psychotherapy students in their Master's to help users while targeting Nova SBE students as the initial app users. Sessions can be scheduled in advance, but in the future, the app also aims to provide instant support by setting up a hotline amongst registered psychology students, using AI, or redirecting them to an institutional hotline for urgent cases.

The pilot will start at Nova SBE at the beginning of September. In the meantime, users and providers will be invited to test the platform and the overall concept, helping improve the brand and clarifying its strategy. In parallel, Dorra, Hannah, Julia, and Lilian will conduct more research through qualitative and quantitative surveys and interviews, collecting feedback, mentoring, and coaching from previous judges, investors, other successful entrepreneurs, and many more. Moreover, the students will seek collaboration with potential stakeholders such as the Well-being at Nova SBE office or other people with legal, technological, or psychological expertise.

<https://www.novasbe.unl.pt/en/whats-happening/news/news-detail/id/1010/onesta-nova-sbe-students-present-idea-to-mitigate-youth-mental-health-problems>

1/3

Appendix 2 – Podcast with renowned entrepreneur on business advice for our app

Podcast Episode
Ep 9: Getting to What Works Faster
 Problematic

22 May · 26 sec left

Episode Description

Methodologies like Lean Startup and Customer Development can help us short circuit the long journey of getting to a product that customers love. Aaron Eden tells us how.

Aaron Eden is a world-renowned expert in innovation having helped a number of large companies make new and disruptive products as well as radical improvements to existing, marginally-successful products. Today he talks us through a scenario of how he would work with the winner from our last event on de-risking aspects of their proposed talk buddy system to combat the mental health crisis in universities. We cover frameworks like the value proposition designer, business model canvas, D4D Next Tool and skills like conducting

Appendix 3 – Board visualizing user stories and next steps of project

Problematic: Onesta Board

v2

- create a short tutorial video (ca. 30sec) about how to use the app from the user perspective and one from the talk buddy perspective to prevent abuse of "demo" button by logging in anonymously
- Find a talk buddy for tough conversations
- on the homepage, also add the information or a button "become a talk buddy" so that also talk buddies know where to register (link:onest.space)

v1/ MVP

- OPEN QUESTIONS V1
- Tech Work: Figure out video/telephony
- Anyone Tech Work: receive an email with calendar invite (incl. video call link) when session is confirmed and a reminder 1hr before start time so that I do not miss scheduled appointments
- Talk Buddy Tech Work: talk buddies need a no-hassle way to setup recurring availability so they don't have to login each week and specify individual slots
- Talk Requestor V1: should have to accept the privacy policy/ disclaimer and agree that I do not have a severe problem (suicidal thoughts, harm myself, etc.) so that I know that my information will be kept private, that I will not receive medical

Working on Now

- Anyone: Delete dummy data and add selves as Talk Buddies. Specify some availability over next weeks and solicit bookings from friends

Completed: Ready for testing

- Anyone: look at own profile and of the other party to get a feeling about who they are talking to
- Anyone: look at own schedule to keep track of time management and have ability to cancel self-serve if I can no longer make the session
- Anyone: able to communicate with the other party prior to the session to coordinate and also gain assurance/confidence
- Anyone: ability to rate the conversation thumbs up/down and leave explanation to keep high quality experiences for others and prevent abuse

Complete

- Talk Budd: I should be public pro gender, age descriptio whom help
- Talk Budd: I should be proposed parties kn happening
- Talk Requ: I should se date in the flexibility ; talk buddy, first or Op first)
- Talk Requ: I should be

Appendix 4 – Pitch Deck



MEET SAM

Sam is a 21-year-old student majoring in Finance at NOVA SBE. He has a heavy workload, juggling assignments, exams, and extracurricular activities.

Sam often feels **overwhelmed** and **stressed** due to the high expectations and intense competition in the academic environment. Sam knows about **mental health**, but he is **hesitant** to seek professional therapy due to various reasons:

- cost
- stigma
- time constraints
- lack of easy access
- lack of availability when in need

MANY STUDENTS LIKE SAM FACE EMOTIONAL DISTRESS AND SEEK SOMEONE TO TALK TO BUT HESITATE TO REACH OUT TO FORMAL THERAPY

only 15% seek professional help

THIS IS WHERE ONESTA COMES IN

psychology students struggle to find opportunities to gain experience

Facts and Figures



in 2020, approx. **380'235** students were enrolled in higher education in Portugal

(OECD INDICATORS)



1 out of 5 students suffers from a mental illness

(UNIVERSITY OF ÉVORA)


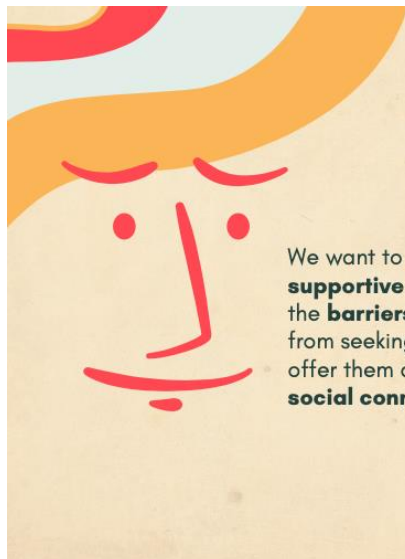


Portugal has Europe's **2nd** highest prevalence of psychiatric illnesses (**22.9%**)

(SOCIETY OF PSYCHIATRY)


57% of Portuguese population presents some sort of psychological distress

(SOCIETY OF PSYCHIATRY)



Our Mission


We want to provide a **safe** and **supportive space** by **breaking down** the **barriers** that prevent young people from seeking the help they need and offer them a **feeling of belonging** and **social connectedness**



Bridging the Gap

Unlocking the power of semi-professional peer-to-peer support

Web-App connecting university students with volunteer-staffed master students & graduates in psychology, providing **quick**, **free**, and **convenient** peer-to-peer support in times of emotional need.

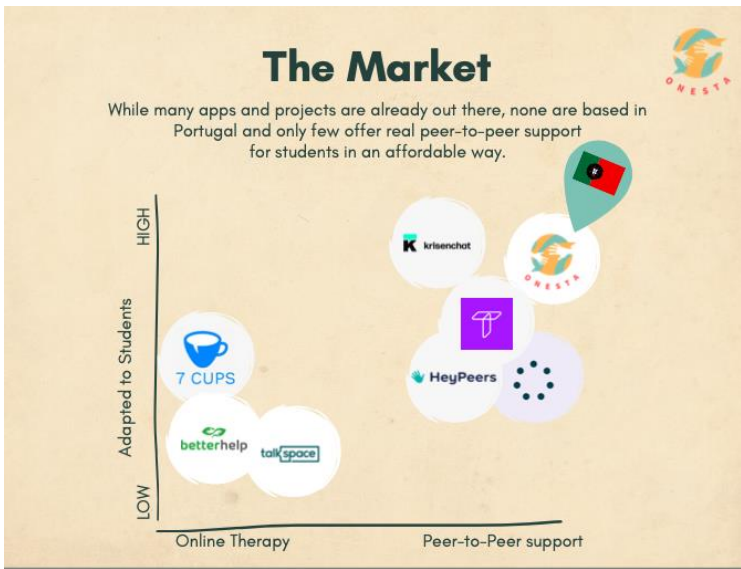


How it works

Selection of talk-session via **availability** or **talk-buddy**

video call and **chat-option**

quick. easy. accessible.



Benefits of peer-to-peer support

What is it about?


- powerful **therapeutic method** in psychology, frequently used when dealing with stress, depression, and burnout
- built on **common trust** among individuals, enabling them to express issues that are difficult to express in classic mentorship.
- consists of **sharing knowledge** or **experience**, providing emotional and social **support**, or giving practical advice

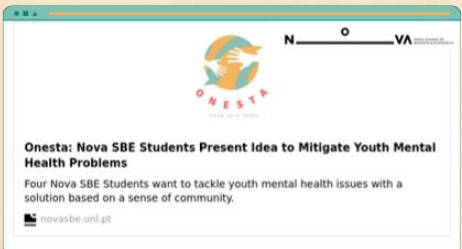
WHY?

quick, affordable & easy access


**MUTUAL UNDERSTANDING
GREATER SOCIAL CONNECTEDNESS
FEELINGS OF BELONGING
SAFE SPACE**

First visibility gained by our university







Onesta: Nova SBE Students Present Idea to Mitigate Youth Mental Health Problems
Four Nova SBE Students want to tackle youth mental health issues with a solution based on a sense of community.



Nova School of Business and Economics is one of the best business schools worldwide




Nova School of Business and Economics on LinkedIn: Onesta:...
Mental health problems among young...




Nova SBE Leadership for Impact Knowledge Center on LinkedIn:...
A round of applause to Dorra Ben Tahar,...

Proof of Concept




Thus far, we already conducted feedback surveys, had meetings with potential partners (Life at Nova department, NOVA SBE) and competitors (Krisenchat)


How do you cope during low moments?



Coping Mechanism	Frequency (0-6)
Other	1
Meditation	3
Sports	4
Talking to someone	5
Music	6





Obstacles to seeking mental health support




Obstacle	Frequency (0-5)
Waiting Lists	1
Lack of time	2
Transportation	2
Lack of information	2.5
Mental health stigma	3
Underestimation / Unawareness of own wellbeing issues	4
High fees	4.5

Business Model






University buys subscription for the students who seek support



Psychology Students gain experience and potentially let it count as internship



Onesta provides a safe and secure platform to schedule video calls at no cost for the student



Appendix 5 – Aspirational Press Release during Buildathon

New Wellbeing App Aims to Reduce Mental Health Stigma and Empower Students

Portugal - September 15th, 2023 - A new wellbeing app has been launched that aims to be the go-to app for university students or young adults who are struggling emotionally and want someone to talk to. The app virtually connects these students with "talk buddies" - aspiring psychology students who have undergone a dedicated onboarding and training program or even professional psychologists. The goal is to help students work through emotional issues and guide them through their everyday life.

The app's vision is to reduce the stigma surrounding mental health and empower more people to improve their own mental wellbeing. "We aim to generate a more mentally stable and happy generation, where everyone feels that their concerns are significant and deserving of attention" said the app's founder.

According to recent studies, 65% of students report poor mental health, while only 15% seek professional help. Portugal is ranked in the top three countries struggling with high depression rates. The stigma surrounding mental health and the cost of therapy are just a few of the obstacles that prevent people from getting the help they need.

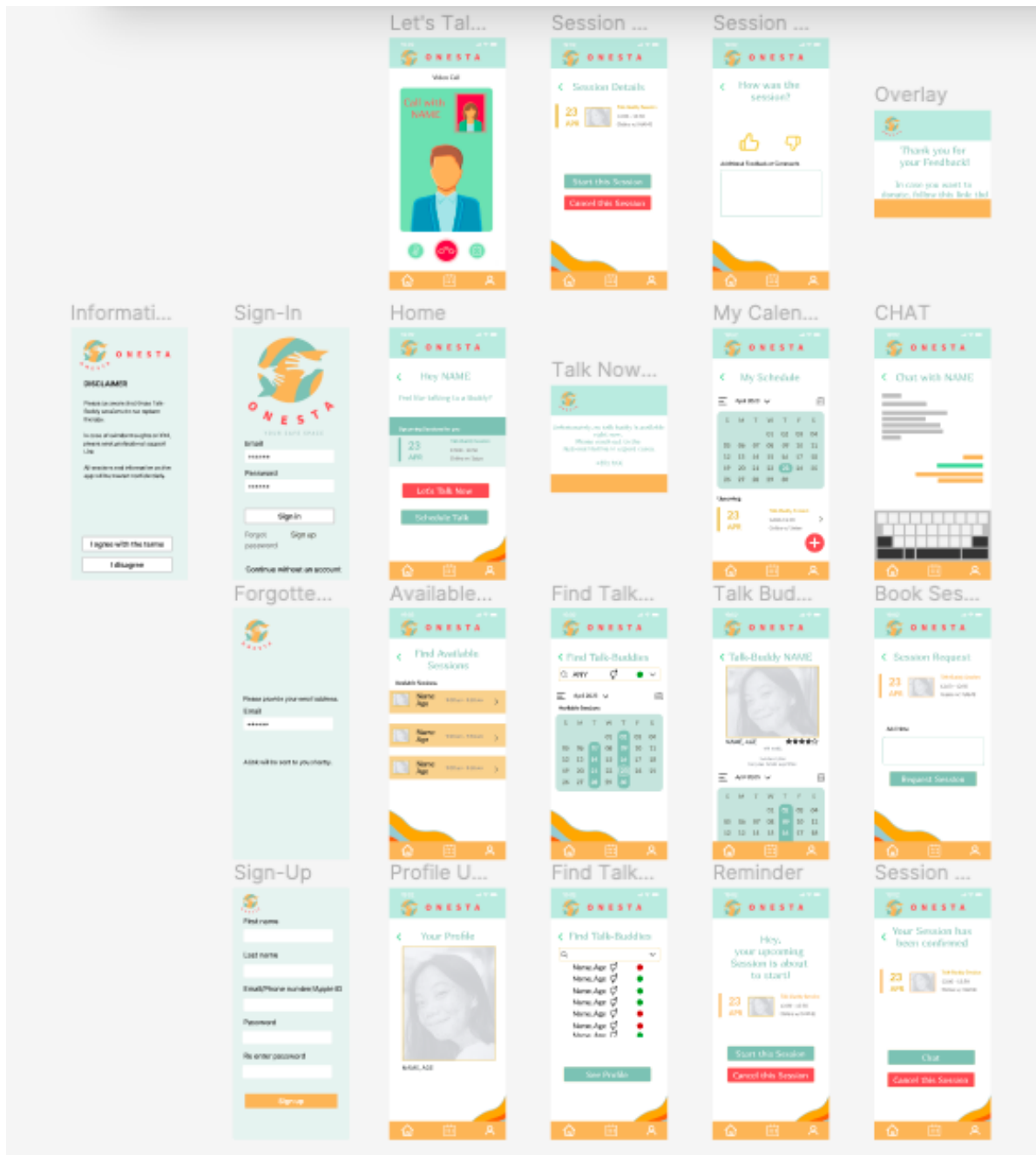
The app's value proposition is that it offers peer-to-peer counseling that is fast, convenient, online, and donation-based, making it accessible to all students in Portugal. Users can schedule an appointment whenever they need it, either instantly or at some point in the future- providing maximum flexibility. Sessions take place in a virtual safe space, still having the option to schedule follow up meetings- online or in person.

Talk buddies who participate in the program will receive valuable experience, a donation, and an intensive training program that will provide them with a certificate after a final assessment by professional psychologists.

"We are excited to offer a solution that connects struggling students with talk buddies who can provide them with the support and guidance they need," said the app's founder. "Our mission is to break down the barriers that prevent people from seeking the help they need and to provide a safe and supportive space for anyone who needs it."

The app is now available for download on the App Store and Google Play.

Appendix 6 – Prototype



Appendix 7 – Notes from user interviews during Buildathon

Street Feedback - Users

User 1

- talks to friends, has been to mental coach once would use it
- When want a different opinion than from you're friend
- When you already talked to friend and did not help
- Loved the idea, would definitely use it
- "Is it also available in Switzerland?"

User 2

- talk to friends
- At old work got therapy sessions for Free and loved it (had at a time where she felt at a very good mental state)
- Believes we should go to therapy once a week
- Would definitely use the app
- Loves the idea

User 3

- Talks to her mom
- Also went to the therapist
- Would use it but would be skeptical about the credibility
- Would believe in the credibility of her therapist would recommend it to her
- If doctors would recommend
- nice colors
- Like the colors, they are bright
- Maybe put the logo more abstract

User 4

- talks to friends/listens to music/church groups
- Never thought of going to the therapist because it is way too expensive
- Does not have big problems
- Would definitely use it