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**Lean Startup: Improving an MVP with service design tools**

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**Master Thesis**

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**“I wish there was a way to know you're in the good old days before you've actually left them.”**

Andy Bernard – “The Office”

## **Abstract**

The context of the project developed is a start-up company service, in its first stages of life. Being an MVP, this service needs the correct approach in order to turn this minimum viable product, in something that can be sold. Not only regarding of it being a MVP, but also the whole context of being a start-up in an entrepreneurship context, affects the whole picture.

This study goes to the core of the problem, creating a new technique involving lean start-up iteration cycles and service design methods combined, in order to develop a correct and effective service on a start-up company. This technique combines the iteration cycle of “Build-Measure-Learn” with the Multilevel Service Design from MINDS method, in order to develop/improve a service in a start-up company, reducing costs and improving the chances of success.

This technique is also a starting point to other research in this field that are looking for development techniques that are not yet searched or developed.

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## **List of abbreviations**

**MVP** – Minimum Viable Product

## 1 Introduction

### 1.1 Project Background

In the present time, with all the conditionings that were put on to all the companies for three years due to Covid, the market is weak and in need for a boost. Entrepreneurship is one of the many pillars in which the society is relying on, and it brings on many new advantages like “creation of new jobs, the emergence of new innovations and new knowledge spillovers” (Adjei, 2021) stimulating competition among a certain market having ultimately an impact on productivity and employment growth (Rosado-Cubero, Freire-Rubio, & Hernández, 2022).

Entrepreneurs bet mainly on start-ups or small businesses where they can be prudent and test innovative new product ideas in the same market as the giant competitors by taking controlled risks (Adjei, 2021; Rosado-Cubero et al., 2022). Startup companies are seen by the decisors in regional markets as the opportunity for development, economic diversity, and industry density, influencing the later development and wealth of that region (Adjei, 2021).

Having this in mind, the investment in new, creative, and innovative products or services are in the core of the main reasons to create and invest in start-up companies (Adjei, 2021) and are also the product of that investment. Start-ups base their operations, as said before on the creation and exploration of new products or services in a certain limited market (Adjei, 2021; Silva, Kaczam, Dantas, & Janguia, 2021). Startups are characterized by having high maneuverability in terms of adapting to changes in the market, flexibility and dynamism supported by technological tools. These companies have a short time in the market, are based on rapid growth and application business model, and focus the investment on “Research, Development and Innovation” (Silva et al., 2021).

Considering what is previously mentioned, IT startups, as mentioned by Choi, Sung, and Park (2020), have multiple definitions related to them, but the most important thing about them is the connection to technology and the creation of new products and services with it. Having said that, a technology startup is also usually seen as the source of employment, that leads to new demand and highly skilled labor (Choi et al., 2020). Not only on employment, but also regarding innovation, this dynamic sector has an interesting effect in innovation, through the creation and development of interesting new ideas, that turn out to become unprecedented products ready to enter the market (Choi et al., 2020).

The new tools or services that are developed on the scope of start-ups and entrepreneurship can be controlled and adapted according to many methodologies among them, the Lean Methodologies, Agile project Management or service design thinking (Sońta-Drączkowska, 2019). In the lean methodologies, the lean startup stands out, being a technique based on the overall principles of the Lean methodology, and proposing a new measure unit, the validated learning. This measure unit is based on the “Build-Measure-Learn” circuit, where the main goal is to eliminate unnecessary waste (Ries, 2011). Not only these facts, but also the client side is considered. Companies are now more dependent on the service provided, since the customers have interaction in several touch points throughout their journey (Lemon & Verhoef, 2016). Customer experience is more and more difficult to manage, because of the multiple touchpoints as mentioned and the rapid spread of information nowadays. This requires companies to develop new ways to integrate the several functions of a business, to offer a more integrated and uniformized service (Lemon & Verhoef, 2016).

In this line of thought, companies must create conditions for the existence of several iterations throughout the development of a new service or product to explore, ideate, reflect, and implement improvements in the services that are being created to the customer, always keeping a service-dominant logic perspective (Teixeira et al., 2016). The continuous improvement must be taken in consideration not only in development phases but also along the several points that somehow influence the final product/service delivered. The improvement is only correctly applied when there is documentation regarding the several processes used, allowing the systematization of these, creating a path to acknowledging them and allowing to know how they are done and use them in the future applying the same methods. This new product, developed by a startup is called a minimum viable product in its first stages of life, and this version of the product allows the function of the build-measure-learn circuit with the lowest time waste, allowing this circuit to move faster and get results in the same pace.

## **1.2 Research Question**

The main objective on this research is to find through the analysis of the current use of a platform developed by an IT startup, how this MVP can be upgraded using several methodologies combined, to maximize its potential. The research question in which the thesis is based upon is:

How to improve an MVP in an IT start-up company, based on integrated methodologies between lean start-up and service design?

The methodologies used throughout the document are based in a case study of an IT start-up company that will be analyzed in the context of a new service that is being developed. This service circles around project management based on adaptable processes. Its main capability claims to be helping on project/process management recurring to many adaptable tools, with which teams are already familiar with. Among the several advantages of SCRAIM, which is the name of the platform, the company states some of them to be the easy accessibility since it is an online platform, flexibility demonstrated through the cooperativeness of the platform and agility and reliability on managing easy and simple tasks.

## **1.3 Project Development**

The order of work is based upon the objective previously mentioned, starting on the analysis of the platform through the documentation gathered related to it and the exploration by testing directly on the platform. A mapping of the multilevel service design levels is also necessary to understand the entities that play an important role in this service, as well as the vision and values of the company. On a second hand, the internal and external perspectives over the service and company are going to be analyzed. A first look will be taken on the different actors involved on the tasks related to SCRAIM, then an overview on the contact methods used by the employees of Strongstep. All these small tasks will help to understand the current customer experience as well as to understand which updates the platform needs to be in line with what customers want.

Finally, the most important part is carried through the interviews to both the employees of Strongstep and to the clients that have business relations with the company. The objective of the internal interviews is to understand how communication with customers and the use of the platform is perceived by the commercial division, and to understand what the insights of the

development team on the platform are and on the future developments to be made. On an external point of view, the interviews will divide on the customer side that is already familiar with the platform and on the customers that don't know how SCRAIM works and that need a tool to manage processes or tasks. These interviews will give a real and precise perspective on how the features are working, the customer experience and the main point to focus on.

The last part of this research is related to the application of the several methodologies available to improve the minimum viable product that is SCRAIM. Going through Lean methodologies to maximize the quality and outcomes of the service, minimizing the waste that comes along the way, crossing it with service design tools having in attention what are the customer needs and how this service can bridge them will bring many advantages not only for the product and for the client, but also for the company.

This research will hopefully allow this IT startup improving the service that is already being provided to their customers for free as a pilot test and put it on the market as a full complete service. This will also allow to understand how other companies with the same positioning as this one, can improve their services or products applying different methodologies in order to make-the-most-of their capabilities and resources.

## 2 Theoretical Framework

Throughout this section, there are going to be approached several topics that are essential to the development of this dissertation. On a first look, there will be a brief overview on the innovation and technological entrepreneurship, getting to understand how these characteristics affect the later development of a company or the creation of new services. Related to that is the customer experience and customer journey. Always connected, these two definitions are essential to understand the power of the customer perspective, as well as where they stand in the service provision. Looking over to lean methodology, there is a more detailed view on lean start-up, being this the characteristic more connected to this study. In order to develop the correct approach to the research question, the service design is also reviewed as well as several methodologies that are key to better acknowledge the proper path to follow to answer the research question.

### 2.1 Innovation and Technological Entrepreneurship

Innovation and entrepreneurship are two terms that tend to be connected. Innovation can be defined, as mentioned by the Department of Industry Science and Tourism in Rogers (1998), as the:

“Application of ideas that are new to the firm, whether the new ideas are embodied in products, processes, services, or in work organization, management or marketing systems”,

connecting the definition of this term to the idea of value addition. Besides that, innovation is also something that requires the involvement of several different skills in a company, in order to develop and implement a successful idea, that can only be considered innovation after its effective implementation (Rogers, 1998).

Relating Innovation to a current day-to-day operation in a company, there is the assumption that these innovative ideas can only be brought to life in a workplace that have value and policies implemented that are conducive to the consistent innovation, as also to continuous improvement through iteration cycles (Rogers, 1998). Considering this, innovation becomes the competitive advantage needed to set a company aside from their competitors, in a market with new and different challenges (Neely & Hii, 1998), (Rexhepi, Hisrich, & Ramadani, 2019). Besides that, innovation can also be a driving force to the internal growth of a company (Neely & Hii, 1998), being specially more important in startups impacting their survival.

Innovation, according to Rogers (1998), can be connected to the introduction of a new product or a significant change in an existing one, a new innovation process that is unknown by an industry, the opening of a new market, the development of different sources for raw material and finally, changes in the industrial organization. This same author cites the Oslo Manual developed by OECD, in which there is a more precise reference to the technological innovation. This term is then connected either to a new or to an improved product or service, being that the characteristics and particularities of it are very different from what was before. This definition differs from the common “organization Innovation” because the last one is

more related to the change in organizational structures, the way it is managed and the strategies that are applied (Rogers, 1998).

Moving on to the entrepreneurship facet, this became a characteristic that is being seen more frequently since there was a surge of business opportunities in last few years, opportunities that resulted in increased globalization and technological effects. This ultimately increased the competition in the market (Juliana, Hui, Clement, Solomon, & Elvis, 2021). In this way, entrepreneurship and innovation were two terms that needed to come together. Clow in Juliana et al. (2021) defines entrepreneurship as being the:

“Process of mobilizing and sacrificing resources (land, capital, and human resources) to use a business opportunity or execute an idea in a way that meets society’s needs for products and services, creates employment, and benefits the venture’s owner.

Having said that, the innovation process is a must when it comes to entrepreneurship and conducting a company to development in a saturated market. Creativity allied with new, effective and innovative ideas is what is needed to develop a reliable company nowadays (Juliana et al., 2021).

In IT companies, as well as in other sectors, innovation and entrepreneurship go hand to hand and entrepreneurial innovation complementary concepts, as mentioned by Juliana et al. (2021), are used to achieve better and more complex results that add value to the final product or service. Entrepreneurs are then incentivized to create new products or services, through innovative ideas, applying these techniques in new companies, namely the startups that allow the testing of these ideas without generating large amounts of costs (Juliana et al., 2021). In the technological sector, costs are a big issue since there is an investment to be made in software and development. Besides this, it is difficult to innovate in IT, since it became very saturated in the past few years with several products inserted in different areas (Dubickis & Gaile-Sarkane, 2015).

Considering the overview of the characteristics of the IT sector and the particularities of innovation, entrepreneurship, and their relationship, this will ultimately affect the dynamic of the market in cause. This impacts the market competition, that besides being in the highest levels, needs differentiator factors to deliver products and services to the customers, distinct to what is being widespread now (Farinha, Ferreira, & Nunes, 2018).

## 2.2 Customer Experience

Customer experience is being faced by companies as a fundamental piece of a product or service sale. Considering the definition of this term as the responses on a cognitive, affective, emotional, social and physical level by the customer to the product and service provider (Verhoef in Nasermodeli, Ling, and Maghnati (2013), that can be divided in three dimensions being them the sensory experience, emotional experience and social experience (Schmitt in Nasermodeli et al. (2013), the whole experience can be used to the service provider advantage, turning that into a competitive advantage.

Considering the definition mentioned previously, there are three experiences to deepen. On the sensory experience level, Nasermodeli et al. (2013) defined this as the perception of the customer on the five human senses. All the human senses, consciously or unconsciously, are receiving information that will affect the final experience, and the opinion of that same customer. The sensorial experience turns out to be a service, since there is the definition of the individual identification, self-fulfillment, and self-image (Lemon & Verhoef, 2016; Nasermodeli et al., 2013).

On the emotional aspect, this is referred to the emotions and moods that a certain experience may cause to an individual during the provision of a service. Yang and he in Nasermodeli et al. (2013), mention that the emotional aspect of a service can generate an effective experience that can go from a positive mood to strong emotions and satisfaction. The positive aspect is faced with its opposite, and Roos argues in Nasermodeli et al. (2013) that the negative experience on the emotional perspective is much stronger than the positive one, and tend to form more creased opinions than the positive ones. Besides the emotional behavior, there is the connection with the brand or service, that is formed through this experience. Fournier and Arnold and Cost in Nasermodeli et al. (2013) strongly believed that the emotional connection of a customer to a company would later affect their purchase intention. This aspect is important mainly to companies that want to extend their customers' loyalty.

Lastly, on the social experience, this is related to the relationship that an individual may have with the society and with others. The social experience of each one is different and can be influenced by many aspects like for example, our family, education, peer groups, and mass media. Although this is not a conscious matter, our thoughts, opinions and behaviors can change depending on the external influences (Nasermodeli et al., 2013). This experience is the one that is most out of reach for the companies to manipulate, but there are always ways to reinforce the presence in the market, with for example campaigns in mass media, which will generate an impact on individuals and influence some of them (Nasermodeli et al., 2013).

Having the previously mentioned aspects into account, it can be stated that the customer experience is not something that is straight forward developed and equal to all, but co-created with the customer through the interactions with service elements (Nasermodeli et al., 2013; Teixeira et al., 2012). The understanding of the customer journey is key to understand a customer experience. Companies tend to focus on the obvious touchpoints as the consideration, search, purchase, post purchase and others, forgetting aspects that are underlined in these activities (Lemon & Verhoef, 2016). Some techniques focus on a service design perspective, where there is one specific service encounter and in that one there is the analysis of how a service element affect the overall experience, while the funnel perspective considers several paths along the customer journey (Lemon & Verhoef, 2016). Service

blueprinting, multichannel management and mobile channel management are, according to Lemon and Verhoef (2016), the key elements to understand the customer journey.

Considering this, being the customer experience individual and different for each customer, the only aspects that can be analyzed are the touchpoints and the activities that occur during the customer journey. There are service design tools that encompass the design of services, but they lack the holistic view of a customer experience. For that purpose, the CEM (customer experience modelling) technique is able to provide a systematical portrayal of the experience context, considering not only the physical artifacts and actors involved, but also the holistic nature of the final experience (Teixeira et al., 2012).

The CEM technique is not a substitute for other service design methods, but rather a high-level approach that systematizes experience information and helps the service design in the first stages. This methodology combines three multidisciplinary contributions, being them the human activity modelling, the customer experience requirements, and the multilevel service design (Teixeira et al., 2012). These contributions “provide a comprehensive and systematic representation of the customer experience”, as mentioned by Teixeira et al. (2012). Human activity modelling will provide a notation and conceptual grounding in order to develop a representation of the customer experience. Then, the customer experience requirements characterize the experience by defining the desired qualities and characteristics of a service. Finally, the multilevel service design has three levels which structure the approach to the final service design (Teixeira et al., 2012)

The first level of the customer experience modelling is the value constellation experience. This results from the interactions between the customer all the actors in the customer journey. This stage will consider not only the service that is being provided, but also those who impact the final service provision. On a second level, there is the service experience. In this stage, there will be analysis of data derived from the service encounter with a single service provider. The map that results from this analysis will give contextual details on each specific service provider (Teixeira et al., 2012). Finally, on the service encounter level, there is a focus on each touchpoint with the service provider. This is a more detailed stage and the elements represented are those who are really relevant to each part. The information for analysis is gathered through contextual inquiry, where the researcher accompany the customer while he carries out a certain activity in the customer journey, allowing to gather more precise information (Teixeira et al., 2012). These three levels of customer experience modelling allow to capture various details on the customer experience, maintaining a holistic view that lacks in other methods.

### 2.3 Customer Journey

Considering the definition of customer experience, we must consider that the several interactions between the customer and the service provider, are a source of information and differentiator aspects when it comes to the final perception of the customer on the service (Følstad & Kvale, 2018). The customer journey can be applied in order to obtain a customer viewpoint on the service process, and is valuable for communication and strengthening the stakeholder empathy with customers (Segelström, 2009). Customer journeys are usually associated with the visualization of the customer journey maps. These visualizations have several benefits, and several frameworks were developed in order to classify the service design visualization techniques. The customer journey map is defined by Diana, Pacenti, and Tassi (2009) as a flow type visualization technique.

The mapping of the customer journey can be developed in several different ways, such as service blueprinting, service journeys, and orchestration of clues and customer process (Følstad & Kvale, 2018). Referring firstly to the service blueprinting, this method maps out the service delivery process considering back-office and front-office activities, allowing a deep understanding of how deep an activity from the customer journey can go within the organization (Lemon & Verhoef, 2016). Although this is a common technique within companies, it may have the disadvantage of not focusing enough on the customer and their behavior. With this in mind, service blueprinting, and as mentioned by Lemon and Verhoef (2016), can be a starting point for the customer journey mapping and the analysis of this journey should include the mapping from the customer perspective, using customer input.

Taking a look into the second developing way, the service journeys, as mentioned by Lemon and Verhoef (2016), were a primary way to refer to the customer journey, but then developed to be applied to the customer expectation management and service quality perceptions. This term encompasses mainly the customer expectation management, and although it is widely used as a synonym of customer journey, it is not yet well defined in the academic community (Lemon & Verhoef, 2016). On the last perspective there is the orchestration of clues and customer process that focus on the service processes and customer experience. Although this reflects a similar sensitivity for the service process as the customer journey, there is yet a lack of research in this field, in order to have a clarified and precise definition and method of practice (Lemon & Verhoef, 2016).

Considering what was mentioned previously, there is still a lack of research on the difference between the customer journey mapping from a company perspective and from a customer perspective (Azzine Shiratori, Hofmann Trevisan, & Mascarenhas, 2021). As mentioned by the authors, the customer journey mapping from a customer point of view brings many advantages such as the easy and faster identification of pain points, different visualization process and allows to identify missing touching points that may fall back in the company's analysis (Azzine Shiratori et al., 2021). The mapping of the customer journey allows the company's not only to improve their products and service provision through understanding where the problems are, but also allows to see in which touchpoints there should be more investment in order to increase the revenues and the customer satisfaction (Azzine Shiratori et al., 2021; Lemon & Verhoef, 2016). The customer journey mapping should then be crossed with other methodologies in order to improve the service provided to the customer.

## 2.4 Lean Methodology

Lean in its core is a methodology that has the objective to maximize the value for customer by reducing waste and waits that are unnecessary (Lawal et al., 2014). This methodology is based upon the continuous improvement with a long-term vision of the business, focusing on the efficiency of the resources used and optimization of flow between the many tasks adjacent to a service/product (Chahal & Narwal, 2017). This process is also possible through the continuous learning cycle that is implemented throughout the line of assembly (Lawal et al., 2014). The results are a product or service with maximized quality and safety, and small amounts of waste in the chain of production/ service delivery (Cohen, 2018).

The methodology in analysis is based on the Toyota model, applied precisely in Toyota company in Japan. This team focused on understanding what is the value that is being added in each process that is crucial for the final product and aligning that with a correct and efficient use of the resources available (Lawal et al., 2014). This allowed to deliver a more perfect product, that do not have too many costs for the company in terms of waste and in fact, contributes to the increase in production (since unnecessary tasks and loss of time are eliminated) (Lawal et al., 2014).

To implement or to analyze the processes in different companies that want to apply the LEAN methodology, there are many manufacturing strategies, among them the Total Quality Management (TQM), Six Sigma, Lean Thinking, Kanban, among several others. These strategies differ on the methods that are used along the process but end up delivering results in the same perspective as the definition of the methodology in general. Some of these strategies, like Total Quality Management, focus on other aspects like “internal and external customer-suppliers” relationship, and this is the core of this strategy. This strategy states that each process has its own customer, either internal or external, and the objective is to understand their customer requirements and fulfill them. The strategy requires good quality management, specific tools, and constant teamwork (Nordlund & Yli-Hukkala, 2002). Other of the strategies mentioned is Six Sigma, which focuses on reducing the variability of processes using determined tools. This, to eliminate product or process defects, ultimately reducing costs of waste and increasing the profitability of the company (Vendrame Takao, Woldt, & da Silva, 2017).

Having these aspects in mind, the waste produced in between processes can be generally defined as the undesirable actions that result in something that don't contribute for the final product (Chahal & Narwal, 2017). Waste also demands the correct analysis to understand where it comes from, its impacts and the reason behind it. There are seven types of waste defined by Taiichi Ohno (Chahal & Narwal, 2017), among them overproduction, waiting, transportation, inappropriate/over processing, excessive inventory, defects, or unnecessary motion (Chahal & Narwal, 2017). The most common ones, that are usually discussed are the overproduction, waiting and defects. Overproduction is established as the manufacturing of products in advance in amounts that are not sold immediately, resulting in wastes of money, time, and space. Regarding waiting, it is the result of the time that is wasted between processes, when one process is stopped waiting for another to be finished to continue the manufacturing. Time wasted in tasks like waiting for parts, orders, or plans from management, are also waste. In concern to the defects, these are usual to happen from time to time, but not in a regular way. This can ultimately affect the final product quality, the customer satisfaction, sales, and price of the product. When this waste becomes consecutive,

the company starts to lose credibility and market value, since the product is not reliable anymore, and customer hesitate to trust again (Chahal & Narwal, 2017).

When there is the conscious of the need to implement this methodology, the companies must be prepared to follow an implementation strategy, that can follow pre-defined guidelines. Prior to that, the whole process is order by identification of the waste first, then differentiate it into the categories previously mentioned and understand their cause. After analyzing into the causes that originate this waste, the best lean manufacturing strategy is chosen, to eliminate this waste and improve the processes used and then applied in loco. After the implementation is done, another analysis is done to calculate the waste ratio, measuring the leanness that was obtained through this process (Chahal & Narwal, 2017). For this to work, the best implementation strategy needs to be chosen among the following ones. First there is the Kaizen or Lean basics strategies, that focuses in a one-day workshop that has as focus the introduction of lean tools and techniques (Lawal et al., 2014). The “5’s” strategy (Sort, sweep, simplify, standardize, sustain/self-discipline) is based on events to reorganize the workplace, with rapid process improvement workshops “and value stream mapping to improve current and future processes” (Lawal et al., 2014). Then there is also the RIPW, which is a week-long event, where all the intervenient in a process are gathered in teams, are given a real problem in the company to focus on, and they must identify its cause, create solutions, and implement them in the workplace (Lawal et al., 2014). Finally, the last one is the value stream map, which is a visual tool that helps to understand the flow of products through each of their journeys, mapping all the crucial processes to deliver a final product whit the maxim quality possible (Lawal et al., 2014).

Using these techniques, companies can achieve quality products with less waste and more rentability, high flexibility, short lead times, high empowerment, high customer satisfaction, less occupied space by inventories since everything is made according to the demand, and the layout works according to the product flow (Chahal & Narwal, 2017). Lean methodology, requires changes, but above everything requires institutional cultural change, innovative leadership, and motivated workforce, for everything to be developed according to expected. Despite Lean methodologies being very effective, their use combined with other type of methodologies can be potentialized.

### ***Lean Startup***

Lean can even be more specific, when it comes to the size of the company that it is applied to, and its characteristics. Lean start-up is based on the overall principles of the Lean methodology. Lots size reduction, just-in-time production, inventory control, and acceleration of time cycles are among the fundamentals of these methodology, that adapts these ideas to the context of entrepreneurship and the way that progress is evaluated by entrepreneurs (Ries, 2011). To evaluate their growth, lean start-up suggests a new measure unit, being it the validated learning. This measure unit bases itself on the development of learning and therefore discover and eliminate waste that Is threatening the business (Ries, 2011). The organization of the company must be done taking in account multidisciplinary teams with knowledge in several areas, that are responsible to mark the learnings that are being made along the way. Ries (2011) mentions that the new measure unit takes of the procedure a burden that no one likes to have, and that is the learning process, that is intangible and the hardest to achieve since it can’t be accurately measured. This methodology bases itself in the

“Build-Measure-Learn” circuit, where the total time of the circuit must be minimized. Through the information that is available and its analysis, the team will learn something from it. Then, with new knowledge, new ideas regarding the project in hands will come and through the analysis of the several ideas basing on the value and growth hypothesis, we get to build a minimum viable product (MVP). On the measure step, this is the hardest since this one is going to tell if there is innovation or not. In this step, there must be a quantitative approach to understand if the efforts are getting results on the directions pretended. It is also in this stage that the learning marks are essential to evaluate the progress (Ries, 2011).

Through the Lean Start-up Methodology, basing on iterations of the “Build-Measure-Learn” circuit, we can understand its importance to small, new companies. This methodology is key to start-ups, since it allows them to understand the route that they are taking and making sooner decisions regarding products that may not be going as well as they think they should be. This enables them to save time, generate less waste and save money. Through MVP (minimum viable products), the innovative ideas that can change the market can also be analyzed from different perspectives, having results on their viability and the changes that must be made for them to be profitable and competitive in the market.

## 2.5 Service Design

Services are the main sectors in society, being fundamental for responding to our necessities. As mentioned by Patrício & Fisk in Patrício, Fisk, Falcão e Cunha, and Constantine (2011), service organizations must go beyond the tangible and visible aspects in the existent service models, according even to the definition of services. Services are intangible, heterogeneous, inseparable and perishable. This is said, to achieve a more comprehensive and holistic approach to service innovation that enables value co-creation for both parties (service provider and customer).

Service design is an emerging field, and as any other area, many perspectives and approaches are developed, and these combined can result in more efficient solutions. Designing a service requires having in account not only the final product but also the physical evidence, human resources, processes involved and technological support necessary (Patrício & Fisk, 2013). In service design there are different stages being them the exploration, ideation, reflection, and implementation, respectively (Patrício, Pinho, Teixeira, & Fisk, 2018). Besides this, different levels of service design must be considered. First, at the service concept level, the service provider must define their value proposition and position their service in the customer value constellation. After that, at the service system level, the design of the frontstage interactions is required, as well as the backstage processes and the technologies necessary. Finally, at the encounter level (touchpoint), the most important part to be detailed are the interactions with between service provider and customer. This is the first contact that the customer has and that will be its first perspective over the company and the services offered. (Patrício et al., 2011).

Having these aspects in mind, several models have been developed along the years to develop new services, but the most adaptable model that there is that helps to understand the connection between the research results and the new service concept is the bridge model by Dubberly, Evenson and Robinson (Patrício & Fisk, 2013). Considering this model, the service design starts by the understanding of the current customer experience. The information gathered must then be organized and models to customer experience information may be helpful, to extract the most of this. Understanding the information after organizing it, a new service design solution can be modeled. These new designs that are created are then turned into prototypes and tested in the real world. Modelling enables a “visual abstraction that helps systematize complex information, discuss different information, discuss different interpretations, and explore future service possibilities” in a cheaper and effective way (Patrício & Fisk, 2013). The main challenges found in service design are the complexity of services systems, the increasing importance of customer experience and the need to integrate different fields at the same time (Patrício & Fisk, 2013). These difficulties are overcome by new methods that integrate several fields like interaction design, service science, management, and engineering.

Multilevel service design can be defined as an interdisciplinary method for the integrative design of service systems, synthesizing the fields previously mentioned (Patrício et al., 2011). The MSD method offers a holistic view between service concept level, service system and the service encounter. This method addresses the three levels of customer experience design allowing a more accurate and holistic perception of the reality and helping to develop a customer value constellation, service system architecture and navigation, and service experience blueprint for the new service offering (Patrício et al., 2011).

Through using holistic methods, it enabled the value co-creation which is crucial to sustainable service offers and to benefit both sides. Value co-creation is defined by Patrício et al. (2018) as the actions that are taken by multiple actors involved in a service to contribute to one another's wellbeing. The service design for value networks method is an enabler "of many-to-many value cocreating interactions, striving for balanced centricity among network actors" (Patrício et al., 2018). This method follows a design thinking process but focus efforts on the first two processes of service design being them the exploration and ideation. The processes that are part of the method are the mapping of the value network, understanding the actors' involved experiences and interactions, and designing the value network service concept, and service architecture. The service design for value networks should be used as a facilitating method, supporting many to many interactions and allowing a design thinking process focusing on exploration and ideation (Patrício et al., 2018).

Another point to have in account when designing a new service is to hear the customer and their concerns. Usually, companies commit the error of asking the client for the solutions that they want to see in their products, forgetting that they don't have the expertise and the knowledge to offer those answers (Ulwick, 2002). Customers have difficulty picturing something that they don't already know and creating new solutions., usually referring to solutions that already exist. Customers also have limited frame of reference and the designing based on their opinion focus on narrow group of customers, leading to products specific for a type of customer (Ulwick, 2002). The correct approach is based on a first approach through planning outcome-based customer interviews by deconstructing and defining the process or activity behind a process or service and narrowing the selection of customers to specific diverse groups (Ulwick, 2002). The second stage is crucial, and the correct moderator can make the difference when it comes to differentiate outcomes desired from solutions mentioned by those that are interviewed. The moderator should guide the participants through every aspect of the processes and capture the hints behind what is being said during the interview and rephrase statements into free from solutions phrases (Ulwick, 2002). The information obtained should then be organized into groups correspondent to each step in the process of the service and afterwards conduct a quantitative survey to rate the outcomes in terms of importance and degree of current satisfaction. The information collected from all these steps should then be used to jump-start innovation through unveiling opportunity areas and understand the company competitive position (Ulwick, 2002).

Above everything, the process of creating and designing a new service is not only complex but also requires having an open mind to what customers dream and need, that cannot be previously understood or considered (Patrício & Fisk, 2013). Extending the boundaries know until the moment and being open to new contributions can result in an effective and efficient interdisciplinary and holistic service design approach, which is what is need the most nowadays.

## **2.6 Theoretical Framework application**

Considering the literature review made previously, the following chapters will be based on the analysis of the current customer journey and customer experience, analyzed through interviews. With those results, the lean start-up methodology and the MINDS methods of service design will be the basis to develop a new technique to improve the MVP that is being studied.

It is clear that there is a lack of research in fields like entrepreneurship development of new services, and improvement and application of services developed in technology startups. The technique that is developed throughout the project, is a new approach to the concerns on an MVP in a start-up company, and a way to create new touchpoints with different methodologies. The results withdraw from this dissertation are a way to address this concern, giving a starting point to further investigation in this field. This becomes an opportunity to fill some research gaps existent in this matter.

### 3 Problem Characterization

#### 3.1 Case Study at Strongstep

Strongstep, the company that developed the product that is being studied SCRAIM, is a spin-off of the Faculty of Engineering of the University of Porto. Founded on 2009, it is now a company with operations in several regions such as Canada, South America, Africa, and others. The company is dedicated to process improvement, with the objective of aiding organizations in the adoption of international management practices in software engineering and information security, such as ISO 27001, ISO 20001 among others. The company is formed by several consultants that have experienced in related areas such as software engineering, information security, business, management, and compliance. Besides the consultant team, there is also three other areas being them the financial, marketing, and commercial team.

Considering their experience with customers, analyzing their needs while the application of standards or trainings, the team found a loophole in the services used by the companies regarding project and processes management. There was a division among several platforms that offered different services, such as teams, for sharing documents, Trello for Kanban functionality, GitHub for coding management, among several others. There was the necessity of one single solution that could join all the functionalities needed for projects management allowing a smoother share of information, avoiding loss of information.

It was in this perspective that was born SCRAIM, that aimed to tackle problems like dispersion of teams, bad process design, use of multiple project management tools and lack of automation. The platform was the defined by the company as an online service for project management based on adaptable processes. The company claims that SCRAIM is agile, adaptable, and harmonious, following standards and best practices.

The platform joins several different features, such as project dashboard, team agile management, agile planning, Kanban board, ready-made processes, and risk and impediment management. To develop the platform, the company used technologies such as Ruby, Ruby on Rails and Redmine.

The competitive advantages that Strongstep affirms to be present in this service are the real time visibility of all projects and status, the ready-made configurable processes, the possibility to manage the team allocation and monitor their progress, organize, and access to the project's information in one place, and anticipate and prevent possible delays. Besides the more specific advantages, there is the fact that this an online platform that is accessible from anywhere and that is simple to use and easy to configure.

Although this service is well defined in paper, it is still a minimum viable product in its early stages of life. The platform is already set for use but there is still a lot of work to be done. The internal team of Strongstep is already using the platform in order to manage and organize their tasks, as well as some of their clients. Some clients agreed to use the platform on a pilot testing case, using only features that are useful for their operations. Considering this a project that is yet being developed, there are some improvements that can be suggested in the stages that are ready for use, and that were supposed to be definitive.

Besides the improvement of some features of the platform, being that the smallest aspect to consider in this research, the main reason that steered Strongstep to the need of this research was the fact that there was a lack of knowledge regarding lean startup and its application. Considering that and the fact that there was no customer journey pre-defined for the service, these needs demonstrated by the company were considered and it was developed a strategic plan to tackle these difficulties and suggest a new and improved plan.

### 3.2 Platform Analysis

#### SCRAIM Value Proposition & Business Model Canvas

SCRAIM is, as the company states, based on the premise of being a tool to suppress the client's needs on aid to manage tasks and solving problems on their projects and processes. Not only that, but SCRAIM presents itself as being an online platform with high adaptability to different industries and the organization that allows to better manage tasks, projects, and resources. Besides these characteristics there is also the integration of these tool with other software's that are now used separately.

In this line of thought, the customer that Strongstep wants to aim are small, medium, and large companies, project and product managers individuals and IT companies. These are the main focus, companies with relation with project or process management that can see SCRAIM as an opportunity to increase their business value. Not only them, but since the platform is highly adaptable, other companies that search for a management solution to organize their operations are also a hidden target.

To be considered in the value proposition is the pain reliever of the fact that the platform was developed basing on the quality standards applicable in the market. Besides using the best practices of quality and process management there is also the benefit of allowing to work with different methodologies of project management and prioritization of the users' work items and dynamization of workflow.

Looking at the business model canvas, attached to the document as Annex A, aligned with the value proposition previously mentioned, Strongstep defined the customer relationship being done mainly through instructional videos, custom-made solutions and customer support, alerts and notifications, and FAQ's (frequent asked questions). The channels through which the platform is diffused is through itself, the landing page that presents SCRAIM and its advantages, the company's social media, webinars where the platform and its features is presented to potential customers and word of mouth by satisfied customers that used the platform.

To the successful launch and operation of the platform, FEUP, INESC and the company Strongstep itself are the key partners to keep servers, features, and other details such as continuous improvements working as they should. For this to happen, and for the customers to always be satisfied with the platform, a product/service roadmap should always be considered, as well as tasks and process management. As in any other physical or IT product, there is the constant need for maintenance and updates according to bugs and tickets that may appear with the experience of users.

Finally, marketing and sales are an important part, keeping the platform in the customers mind and helping to sell even more, through some of the channels mentioned previously. To a good operation there is the need for specific resources, that in this case are the use and the update on the best practices methodologies, not only regarding quality management and standards, but also in the most specific parts related to IT. The use of Agile methodologies on improvements and maintenance is essential, as well it is to keep a good user interface and user experience.

Related to the cost structure that is connected to the development and sell of SCRAIM is the architecture and programing that are on the development team side, and the infrastructure that

is needed related to software and cloud space. On a more visual side there is marketing that is essential to spread the word about the service and its advantages to the market. Human resources are an inevitable cost when it comes to these matters, since there are teams on very different scopes that are needed to set the platform to work. Between them there is the development team, the marketing team, commercial team that is the one that is capable to do the business and budgeting of the platform and the customer support that is crucial for the client to seek when there is any doubts or problems.

Between all these processes the revenues of SCRAIM come mainly through the subscription model based on four different packs, or the custom-made features that are requested by the customers related to a specific need on their projects or processes.

Currently, these are the basis that the development team and the ones that are responsible for the platform are taking for its building. Having in mind that this is an MVP, there are a lot of the characteristics mentioned before that are not being implemented on the current activity of the company. There are improvements to made when it comes to the development side, but this also implies the change or adaptation of some of the aspects of the BMC (business model canvas) and the value proposition, to new and more elaborated features.

### ***SCRAIM Blueprinting***

Considering all the characteristics of the platform and its development, as well as its positioning related to the company and to the market, this service needs a clarification on its functioning, both onstage and backstage wise. Taking into account the words of Bitner, Ostrom, and Morgan (2008), service blueprinting is a visual notation that helps to understand the business in cause, through the several interaction points, representing both actors and activities. This tool is simple and easy to analyze and understand, being the most practical way to give a first glimpse of a process on a determined service. Being so, this technique becomes a service innovation approach adaptable to every type of organization, providing a platform for everyone involved (Bitner et al., 2008). Not only to for the purpose of understanding processes, blueprinting is being widely used as a mean of communication and a way to identify new research opportunities, being a helpful guide in the development of a service (Bitner et al., 2008).

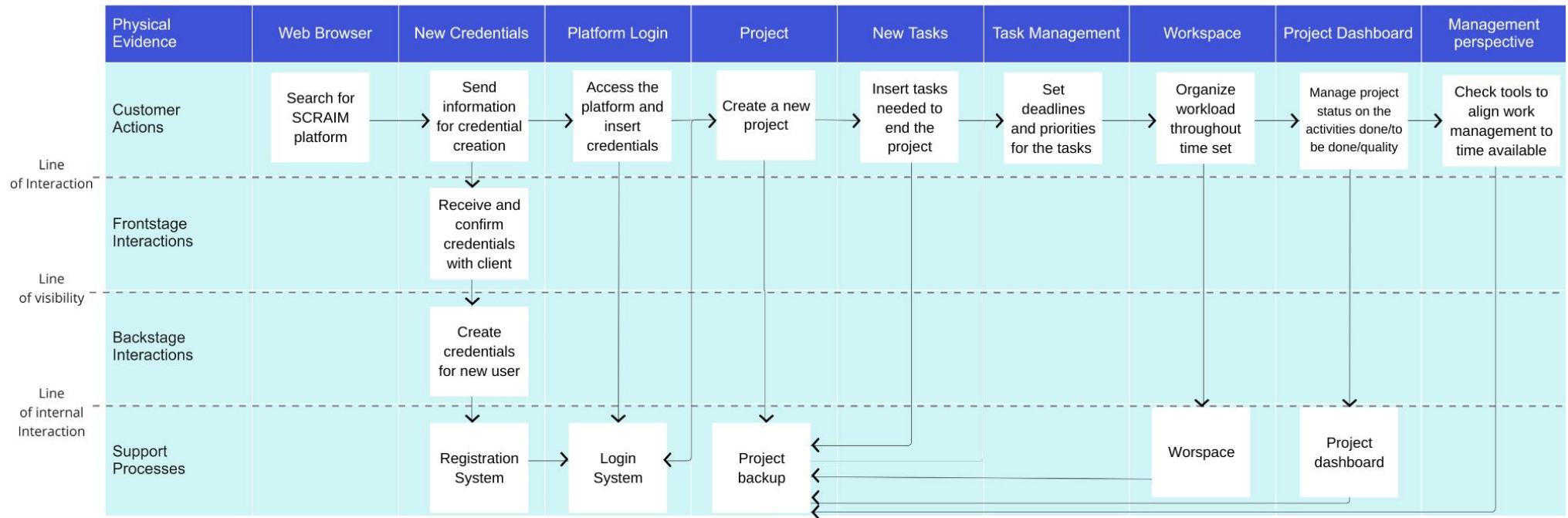
Having said that, and considering all the characteristics of the platform, a service blueprint was developed as shown in figure 1. In this way, there is the possibility to scrutinize the process and the several activities connected. In the SCRAIM case, one of the characteristics that is most noticeable is the fact that there is not much interaction between the customer and the companies' coworkers.

This can be explained through the fact that this is an online platform where the customer can make use of every functionality and feature with total liberty, without having the need to wait for the admin approval. Besides this, the platform is only in the pilot testing phase, which is giving the development team a time frame to test how a business model of selling a license for the platform would work. As well as in the testing as in future sales, the contacts between the company and the client would occur in the beginning of the process and whenever they had any difficulty or problem, giving them complete freedom in the use of the platform.

Moreover, what will be mentioned in the results, although the platform still has some function wise issues, that is not noticeable through the blueprinting. The intuitiveness problems and

features available are something that although it affects the end experience of the customer, it does not transpire in the blueprinting.

The service blueprint should then not be only a source to have a perspective over the platform, but more of a way to keep the customer and their tasks in mind in order to innovate bringing value to the customer.



**Figure 1 - SCRAIM main function blueprint**

## 4 Methodology

This study is based on a case study of a new platform that is being developed by a startup company based in a tech hub named UPTEC, Strongstep, with the support of renowned universities like FEUP. The platform, as stated by Strongstep is based on the idea of a project/process management tool that aggregates tools that are now used by companies separately. This brings many advantages referred by the company, but the service is not yet fully developed and presents some issues. The objective of this study is also to analyze the current state and problems of SCRAIM, as the platform is called, and indicate points of pain and try to turn them into points of gain, using lean startup combined with service design tools. Not only that, but the customer journey, and how the final customer is reached is another point to be developed by the research. Summarizing, the research will be based on a qualitative case study of an MVP developed by a startup company, recurring also to documentary collection.

### 4.1 Case Study

Regarding the case study definition that sets the basis for the whole research, there is a lack of consensus in the academic research community, on developing and planning the implementation of this method. This lack of development directly affects the evolution of the methodology and its own use by other researchers. Despite this setback, Rashid, Rashid, Warraich, Sabir, and Waseem (2019), made an attempt to synthesize the case study research process with a guideline divided on stages. According to these authors, who based their research in previous investigations made by renowned authors, there are four phases to conduct a case study, and they are the foundation phase, the prefield phase, field phase and finally the reporting phase.

#### *Foundation Phase*

On the first phase, named foundation phase, there is an attempt to understand the research philosophy and the position that the researcher must take part. This first position is divided in ontology, that is defined as “the study of being” (Denzin & Lincoln in Rashid et al. (2019) and in which everything is affected by the norms and values of the researcher. The second position is the epistemology in which there is an emphasizing of the nature and origins of knowing and constructing knowledge (Rashid et al., 2019). In the epistemological outlook, the view can be characterized as either objective, when the researcher perceives the knowledge as something that follows a set of rules and laws, or subjective, in which case the knowledge is dependent on the way that individuals interpret something. In this same phase of the research, the paradigm is essential, as it is a set of beliefs that will guide the action that follows in the next few phases. The paradigm also provides convenient tools to facilitate the researcher’s identification and communication of perspectives and assumptions (Rashid et al., 2019). There are different perspectives that a researcher can have regarding a paradigm, and it can be positivism, when the researcher believes that knowledge can only be generated using the primary senses, being completely objective; critical theory when there is the belief that the “reality is historically established and it is produced and reproduced by people” (Meyers in Rashid et al. (2019) and lastly, there is the interpretivism where the researcher is allowed to have different perspectives over the same problem, since he is analyzing everything through the eyes of the participants.

In the foundation phase there is also the definition of the inquiry technique that will be used, and there are two common techniques used: the quantitative and the qualitative. Usually, the paradigm is also going to affect this choice, since the positivist researcher is most likely to go for a quantitative research method, while the interpretative researcher is most prone to choose the qualitative to have more insight in the different perspectives (Rashid et al., 2019). The qualitative research method allows the research to have a closer connection to the participants and to study social and cultural phenomenon's, and the collection of data depends on the experiences, values and behaviors of those who are interviewed (Kilani & Kobziev, 2016). On the quantitative side, this approach implies the analysis of statistical data, that despite being relatively slower and costly to apply comparing to the qualitative, allows the researcher to withdraw results with a higher level of accuracy (Kilani & Kobziev, 2016)

Regarding the research logic there are also choices and different perspectives to take. The deductive research logic starts in the theory and aims that part to the testing of arguments. On the relativist side, there is a first look into subjective accounts of lived experiences and the theory is built based on this. There is also another research logic, which is abduction, and it is an approach to produce knowledge and it is a middle ground between the previous two (Rashid et al., 2019).

#### **IMPLEMENTATION OF THE FOUNDATION PHASE**

Considering the literature review on the foundation phase, on the development of this research, the several details involving the case study, and the research itself were considered. Having said that, the outlook that was seen as the most adequate for the investigation was the epistemology with a subjective characterization. This was the choice, since the service that is being analyzed throughout is a technological product, new in the market with characteristics that may never existed in the IT market. In this mindset, the research must feel comfortable looking at an aspect from several different perspectives and having different outcomes.

In the study being developed, the reality that comes across the researcher is of an IT startup, that is developing a new and innovative service based on the premises of innovating project and process management. In order to understand the manners in which the service is being handled and if the company is taking the best steps, there will be conducted qualitative research to have an insight of the company and its processes and after that an analysis of those who have some impact on the final product to be delivered. To gather the best results, it is intended to make use of the literature review and the relationship developed, conducting interviews, and analyzing the results through a combination between the lean startup "Build-Measure-Learn" iteration circuit and the service design tools that may be applicable to this stage. This method will allow a continuous improvement process through several iterations between this new junction between tools. This are the basis of the research paradigm, which takes an interpretative perspective taking into account different views over the same problem.

The inquiry technique chosen was qualitative, and this felt as the best one since, as mentioned before, this is a new service, and its development is based on the feedback coming related to it. Feedback is inherently a subjective matter in which case, to better understand the different insights, the qualitative inquiry technique seemed the most safe and responsible choice.

Finally, the research logic most adequate to the research conducted is a mixture of the relativist and abduction. This because there is a look into subjective perspectives and experiences of real people and the theory is built on this, adding that there is new knowledge

being produced, not only regarding the service, but also through a new and different use of the lean startup and service design tools.

### ***Prefield Phase***

Focusing now on the second phase of a case study research, the prefield phase, this is when the decision of whether the case study is the best approach or not, having in mind as said by Järvensivu and Törnroos in Rashid et al. (2019) that the case study approach is the best for the exploration of the business-to-business relationships and network. This method will allow the research to be a participant through observation of the reality lived, having the possibility to go between the participants experience and literature freely (Rashid et al., 2019). This methodology, as qualitative methodologies, shows several advantages like the possibility to have a homogeneous exploration view, raise more issues through a broad and open-ended inquiry and better understanding of the behaviors of values, beliefs, and assumption. (Choy, 2014). Besides the positivist part, there are also disadvantages like no objectively verifiable results that can be reviewed or tested, the interviewers must have a predefined set of skills, and it is a time-consuming technique taking into account the time lost between interviews, and categorization process (Choy, 2014).

There is also the formulation of the case study protocol when the positive decision on the use of this methodology is taken. The case study protocol is a document where all procedures that are going to be used during the collection of empirical material are defined (Rashid et al., 2019).

### **IMPLEMENTATION OF THE PREFIELD PHASE**

During this phase, there was a moment of reflection to perceive if a case study approach was the best to be considered. In the researcher side, there were developed some tests on whether another approach could be more suitable. One of the considerations made was to take the study in a more positivist side and to opt on a quantitative method. Although this was considered, along with the disadvantages of a case study that were mentioned above, it concluded that this method could not bring some details and data that could be hidden from the researcher and the team of the company, but the customer felt them. These topics could fall in neglect because they would not be approached or remembered during questionnaires for example. Choosing a case study based with the characteristics mentioned before was better not only because of the aspect mentioned previously but also because it allows the researcher to be a participant through observation and also to move freely between literature and participants experience, mentioning also that is a methodology that is more suitable for a business-to-business exploration (as the service is).

In this phase, there was also the formulation of the case study protocol, in order to align how the empirical data would be collected. This file is available to analyze in the attachments of this research.

## **Field Phase**

During the field phase there are two important parts to consider, being them the contact and the interaction. The contact consists on the researcher making its search and being fully in sync with what is the reality of those who will participate in the study, in order to be prepared and to develop stronger findings (Rashid et al., 2019). In the interaction step, there is the execution of the interviews accordingly to a semi structured guide and this part can be linked to meeting observations and documents collection. The collection of information from multiple sources allows the triangulation of results resulting in a rigorous, complex, rich and in depth study (Yin in Rashid et al. (2019).

### **IMPLEMENTATION OF THE FIELD PHASE**

During this stage of the research, there was a phase of search and study of the reality of those that would be part of the interviews. This search was related to the characteristics of those that would be interviewed, such as position in company and relevancy related to the topic that is being analyzed. Besides this, there was also a study of the companies of the interviewed and the services that were applied by the company Strongstep. This allowed to understand the need of the platform and the importance that they have in the study. The search allowed to elaborate more precise questions that may offer a distinct set of data.

Moving a step forward to the interviews, the interviews were conducted separately and followed a guideline of questions that is in attachment to this document. During this step, there was also the possibility to gather more information through document collection and also through notes of observation on the interviews, data that may be useful for the next step.

To have a deeper understanding of how the platform is working as it is and the feedback that comes not only from team members of the company but also from the clients that either had some contact with the platform or need some tool like SCRAIM, but never got in touch with this one, interviews were made. The interviews followed the usual guidelines defined by McGrath, Palmgren, and Liljedahl (2019), Jamshed (2014) and Young et al. (2018). The participation in the study is voluntary, being the participants invited considering their characteristics, related not only to the problem that is being explored, but also their knowledge about the platform in analysis.

In this line of thought, there were interviewed six people from Strongstep, that have day-to-day connection to the platform and are either from the development team, the commercial team or consultants which are the ones that are in closer contact with the customers. Besides giving their own opinion about the communication between the teams and how the processes flow within the company, they managed to give a deeper insight of the platform by their perspective. Not only that, but the fact that some of them have high contact with external people using the platform, is an advantage since they can point what are the main difficulties and concerns shown by the customers are.

Besides the internal perspective, there was also the interviews to the customers that are already using the platform. These are customers that already had some contact with Strongstep, from previous implementation of standards or formations. The consultants with closer relationships identify the needs of that specific customer, make the connection between them and the development team and the alignment of the features that are needed the most is made. The use of the platform is made in a pilot testing mode, without any payment related

unless the customer wants to implement it or asks for specific new features. This point of view, of the first ones using SCRAIM outside the scope of the company that is already familiar with it is essential to indicate not only what is wrong but also what feels right related to other platforms.

Not all clients of Strongstep had the opportunity to have a look at this platform, so it felt important for the research to know what their opinion on management tools are, what are they using at the time and what are the needs that other platforms don't really fulfill. This allows to understand the opportunities there still are to create new features that might not being address until now.

These interviews were all conducted online through either the Zoom platform or Microsoft Teams, and the participants were all aware that the session was being recorded. Their consent to this recording is on the attachments of this study. The number of subjects that participated was dependent on the availability in terms of agenda, of all those who were invited. Having this in mind, there were six interviews to the team that works on Strongstep, four that are clients that used or are using the platform, and one that did not have any contact with it. The choice of the participants from the customers' side, was made by the responsible on the company, and the choice was made based on who interacted the most with the platform versus who had the closer connection with the consultant team and availability. Although it wasn't a choice made based on the position of the person within the company that they work in, the majority of those who were interviewed were quality managers, development team managers and others in the management field. The interviews were conducted between May 17<sup>th</sup> and June 8<sup>th</sup> and had the average duration of about 15 minutes. The companies that participated in the interviews for this research, are mostly medium-sized, expect for one small company. They are present in the digital banking, IT consultancy, manufacturing and developing autonomous vehicles and software. These are the usual companies that seek for not only the type of solution that Strongstep affirms SCRAIM to be, but they are also the ones that need the most training and certification regarding quality and safety issues, since they manage a lot of sensitive information.

The scripts that guided the interviews on the internal and external side are in appendix to this document. The recordings of the interviews were transcript word-by-word and analyzed through the NVIVO software. The interviews content was analyzed by being divided into codes with common characteristics, allowing to reach more abstract categories that guide the results analysis. In the following table, there is the general coding that served as a starting point to enter in more detail for each topic.

| Internal interviews coding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | External interviews coding                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Communication: <ul style="list-style-type: none"> <li>- External Communication Channels</li> <li>- Internal Communication Channels</li> <li>- Actors</li> <li>- Difficulties</li> </ul> Commercial Process: <ul style="list-style-type: none"> <li>- Clients Inbound</li> <li>- Proposal Alignment</li> <li>- Follow-up</li> <li>- Difficulties</li> <li>- Advantages</li> </ul> SCRAIM: <ul style="list-style-type: none"> <li>- SCRAIM presentation</li> <li>- Passing SCRAIM</li> <li>- Clients Difficulties</li> <li>- Being Improved</li> <li>- To do Next</li> <li>- Feedback</li> </ul> Improvement Points | Communication channels<br>Commercial Process <ul style="list-style-type: none"> <li>- Approach to Strongstep</li> <li>- Search for suppliers</li> </ul> SCRAIM <ul style="list-style-type: none"> <li>- Management tools benchmarking</li> <li>- Objectives</li> <li>- Suggestions</li> <li>- Feedback               <ul style="list-style-type: none"> <li>Advantages</li> <li>Disadvantages</li> </ul> </li> </ul> Client view of the company<br>Improvement points |

**Table 1 - Interviews coding****Reporting Phase**

In the last phase of the case study methodology, there is the most detailed work, that will be the core of the conclusions that will be taken considering all aspects mentioned during the research. In this part, there is the need to describe the case in order to understand what the background of the research is and what are the objectives with this study. The next step is then describing the participants on the study, either on quantitative or qualitative studies (Rashid et al., 2019).

On qualitative studies there can be a closer perception of who is going to be approached and understand their perspective according to more deep characteristics that may not be mentioned in a quantitative method. Besides the description of the participants, it is also important to clarify what are the relationships among those who are interviewed. The protocol is also analyzed in this stage, in order to have an overview of the research questions and the scope of the research and the ultimate focus of the study, in order to guide what the last step off this journey is, the empirical material interpretation and analysis. This is the where the evaluation of results must take part and the conclusions will be taken accordingly to what was the results of the interviews, the context of the case, and the literature review related to the topics in questions (Rashid et al., 2019). This part must be conducted with as much detail as possible, in order to give contextual information to give an insight regarding the processes that were used throughout the study and how the conclusions that are mentioned were reached (Crowe et al., 2011).

Another point of view to take into consideration when recurring to case studies as the methodology for research are the pitfalls. These are the potential dangers in the methodology, and according to Crowe et al. (2011), there are a few to have in mind. Some of these are the relation between the accumulation of data and the time available, not only to collect it and also to analyze it too. There is also the importance to keep a scientific rigor at all times, since

this can be a detail that can fall back when dealing with so many others (Crowe et al., 2011). To address these setbacks, the authors suggest the theoretical sampling through drawing on a particular conceptual framework, respondent validation (showing the respondents the results of their interviews and getting their feedback on its accuracy), and transparency through the description of all the steps involved in the whole process (Crowe et al., 2011).

#### **IMPLEMENTATION OF THE REPORTING PHASE**

In the last step of this journey, the most important, there is a more detailed description of the case. This allows the reader to understand the background in which the research was made upon, and the objectives regarding it. Important also to the understanding of the results is the description of those who were interviewed and somehow made part of the research. This description is detailed and mentions topics as position in company, company size (in the customers side), and how they make connection with the service that is being analyzed.

To maintain the alignment of the research and the results, there is an overlook on the research question defined in the introduction stage being it: “How to improve an MVP in an IT start-up company, based on integrated methodologies between lean start-up and service design?”. This will have an impact also in the evaluation of the results of the interviews that are showed in detail and in an easy and practical way to understand. Besides, there is a proposal of improvements to be made, to put the service SCRAIM in a better position than the one that is in today.

## 4.2 Findings

### SCRAIM MVP – as it is

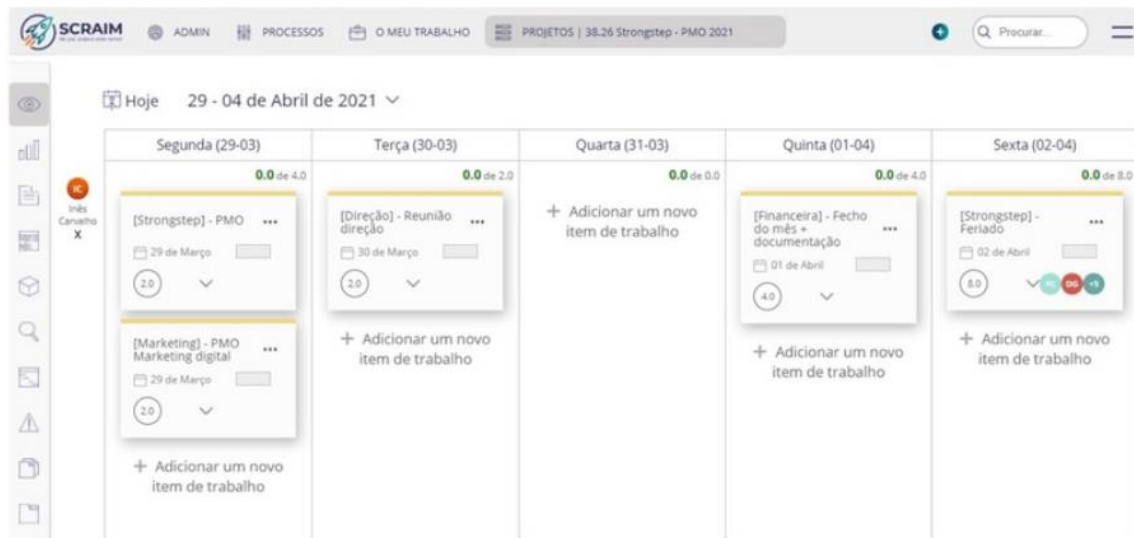
During this investigation, the process that is used is based upon the analysis of an MVP (minimum viable Product) of a process and project management tool of a startup company. This tool is based on the premise of being an online service for project management based on adaptable processes. The platform named SCRAIM, is being developed considering several issues that affect industries nowadays, such as dispersed teams, poorly design processes leading to every worker having their own way to deal with tasks. The company started developing SCRAIM aiming for a platform that creates processes, keeping everyone on the same page on projects' progression and making it available online so that workers can access it anywhere, anytime.

The platform, as it is, gathers a set of features that are commonly used apart from each other. Through a documental gathering it was possible to understand the several features and the objective of them all. Starting by the project dashboard, this feature allows to have an overview of the projects that are occurring and knowing if they are late, on schedule or ahead of their time. The updates made by one member of the team are seen instantly by others, being this another of the advantages of being an online platform.



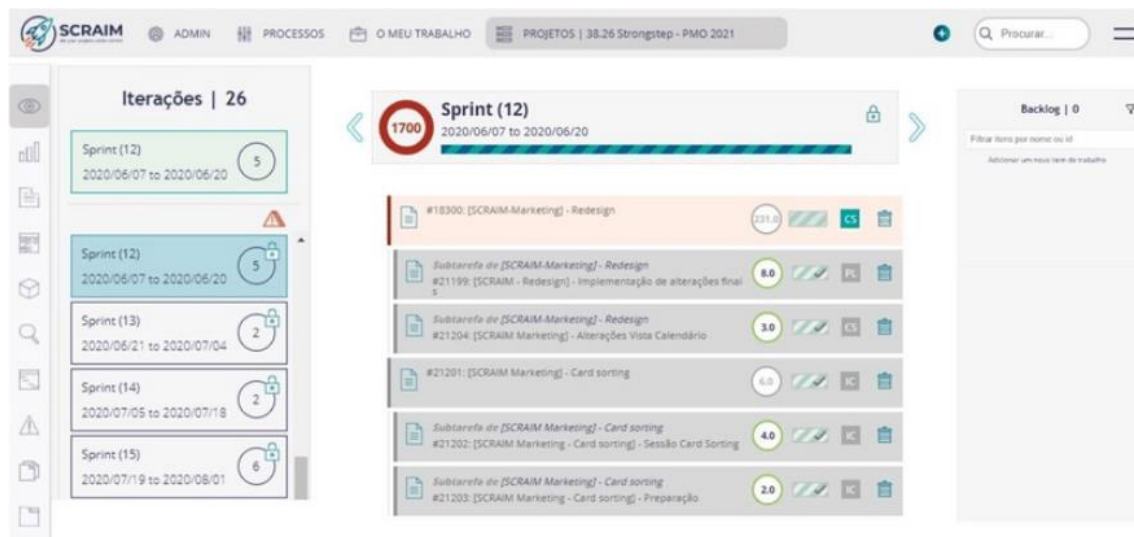
**Figure 2 - SCRAIM screen shot of projects main menu**

Other feature integrated in the platform is the team agile management, which allows an easy tracking and organization of projects' work items, according to the weekly schedule available. Not only that, but each one of the users can allocate a task to other, so that each one knows either the tasks are to be done by them, or the ones that they are part of. Apart from that, this feature allows a useful overview of the weekly work items, allowing to organize, better divide and have a notion of the work between team members, as it is displayed in Figure 3 related to the workspace functionality.



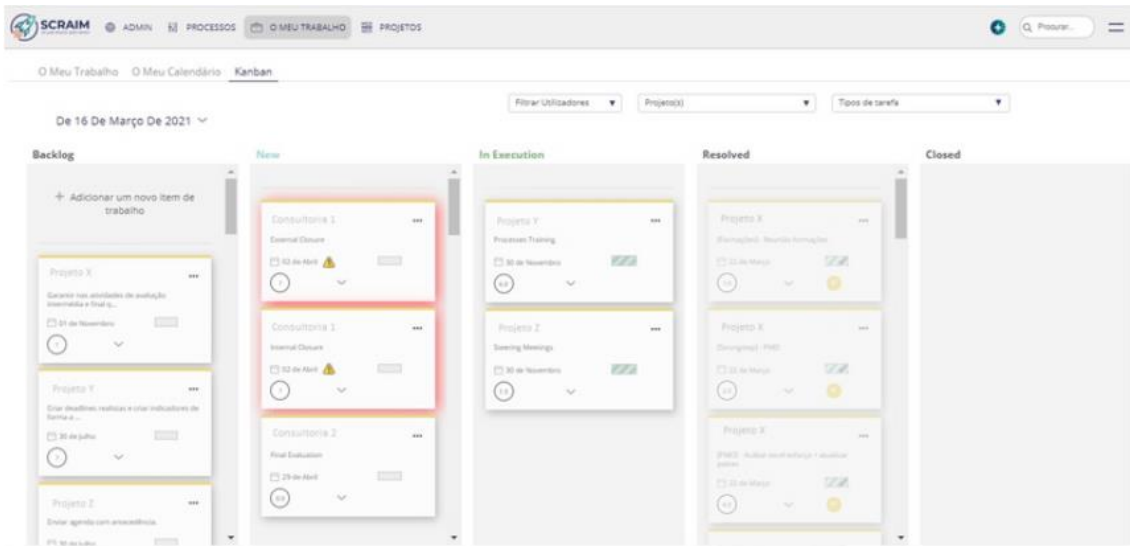
**Figure 3 - SCRAIM screen shot of workspace functionality**

SCRAIM also uses agile planning as shown in figure 4, to ease the definition and schedule of deliverables and work items, creating sub-tasks and arranging the effort by points or hours. This also allows the specification of the work items of each user through a form with pre-defined fields. Like in the figure below, the tasks are allocated to specific sprints where they are performed.



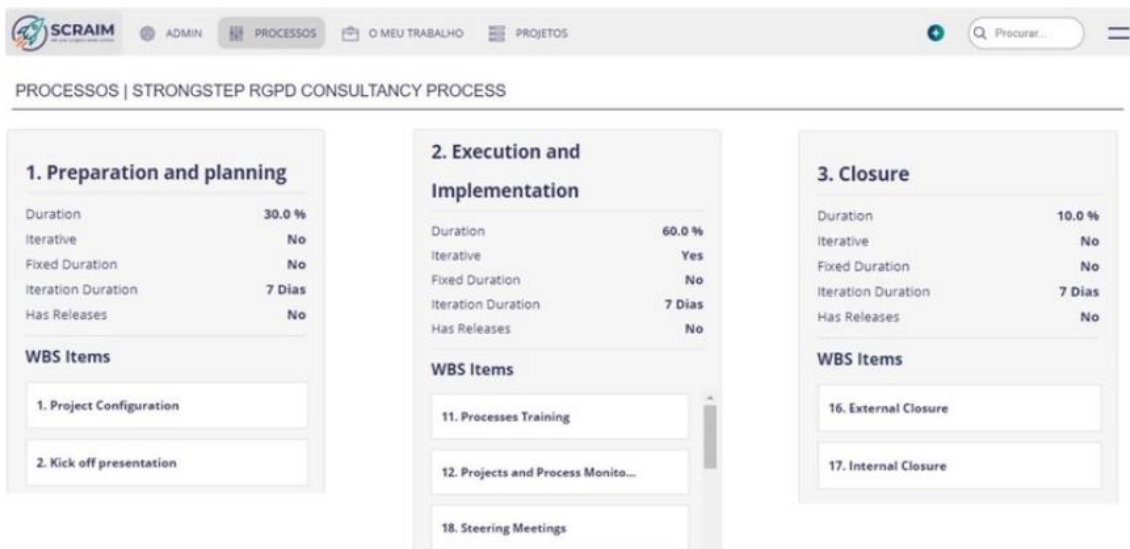
**Figure 4 - SCRAIM screen shot of agile planning**

The Kanban board feature displayed in Figure 5 was introduced to the platform SCRAIM, to facilitate the monitoring of the projects' progress. This also allows to better understand in an easy and fast way if a project is going accordingly to what was planned and have a simple view of the projects' stages and tasks to be done, the ones that are already finished and those that are being managed in the moment.



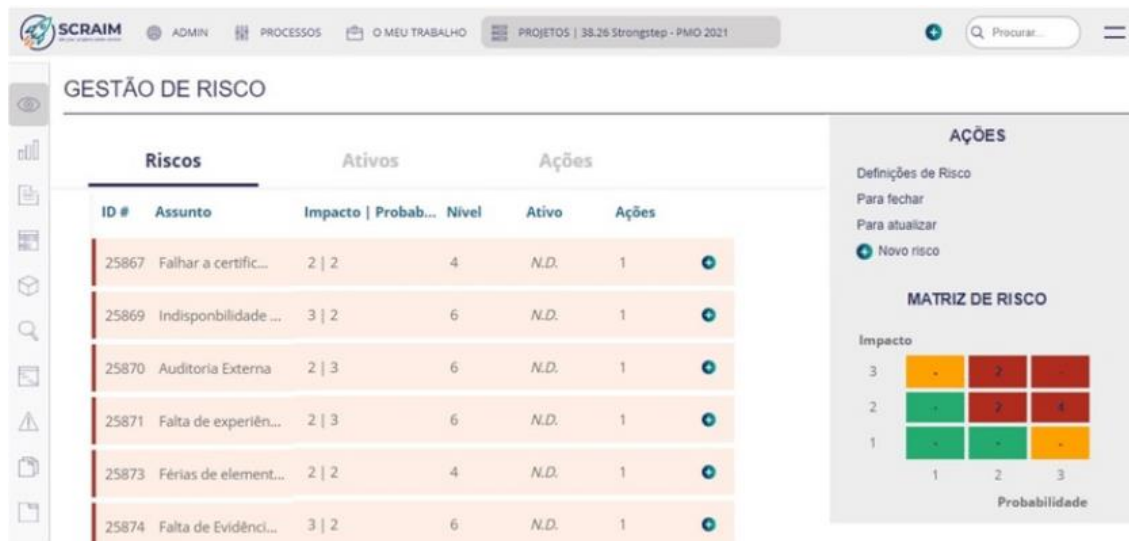
**Figure 5 - SCRAIM screen shot Kanban functionality**

Ready-made processes allow the user to choose the most suitable process to set up and apply to the company projects, having a way to plan them easily and conciliating with workload from other projects. Besides the continuation of an existing project, there is also the possibility to create one from scratch with a set of pre-defined fields to help filling out information that might be essential. In Figure 6, is shown a screen shot of ready-made processes with the estimated time of duration and other characteristics important for analyzing them.



**Figure 6 - SCRAIM screen shot of ready-made processes**

Finally, a feature that might go without notice, but is one of the most important is the risk and impediment management. This feature is essential when it comes to guarantee the success of a project by managing the risks that are associated with it. The risks are previously defined and given a scale on a risk matrix to give more or less attention, and can be accessed like it is shown in Figure 7. Along the course of a project, the risks are always taken in consideration and there is a better chance for the user to understand a risk and solve before it turns out to be a problem in the project.



**Figure 7 - SCRAIM screen shot risk management**

The platform as it is, is not being sold as a final product. The development team is yet making some changes to SCRAIM to improve aspects and problems that were suggested along the use of it by the companies' team and some of the clients that showed interest in a project and process management tool as SCRAIM. Although the features are not all available for the clients, they are using the platform as a pilot testing case, with the features that are the most useful according to their needs and requirements. The analysis of what each one needs is made by the consultants that have a closer connection to the client, having in this way a communication point in both companies that can be used whenever there is any doubt or question. Before handing SCRAIM to the client, there is a period where the subjects that will have direct contact with the platform participate on training sessions to understand how the platform works and how to better take advantage of the features available.

In case a company wants to use the platform full time to manage their projects or processes, there is a budgeting process that is made considering two variables. The number of users that the servers need to support for that company and the subscription plan that is correspondent to that scenario. These plans are not yet defined, and this process is made very precariously, since this product is still an MVP and have many stages to overcome to reach its full potential.

## 5 Results

### 5.1 Internal Perspective Results

In this section of the analysis and results of interviews, there will be evaluated the outcomes from the internal interviews to Strongstep workers. Although the interviews are very rich in terms of different types of information provided, the focus in this part is the commercial area, the performance of SCRAIM and the improvement points in their perspective. Being so, the following table is related to the outcomes of the coding on the commercial section, being the sources, the total number of interviews conducted, and the numbers bellow, the number of interviewees that mentioned the respective code.

#### *Commercial Perspective*

| Coding                                                     | Sources<br>(n=11) |
|------------------------------------------------------------|-------------------|
| Commercial Process                                         | 4                 |
| – Clients Inbound                                          | 3                 |
| a. Website Form                                            | 1                 |
| b. Phone Call                                              | 1                 |
| c. Email                                                   | 1                 |
| d. Recommendation                                          | 2                 |
| e. E-book                                                  | 2                 |
| f. Current Clients                                         | 2                 |
| – Follow-up                                                | 3                 |
| – Proposal Alignment                                       | 4                 |
| Advantages                                                 | 1                 |
| – Fast response                                            | 1                 |
| Difficulties                                               | 3                 |
| – Actions tracking                                         | 1                 |
| – Closing deals                                            | 1                 |
| – Response to public contests                              | 1                 |
| – Lack of time to organize proposals                       | 1                 |
| – Information spread                                       | 1                 |
| – Knowledge about the platform in focused                  | 1                 |
| – Lack of knowledge on commercials to present the platform | 1                 |
| – No commercial process for SCRAIM                         | 1                 |
| – Proposal effort alignment                                | 2                 |

**Table 2 – Internal commercial Perspective codings**

In Table 2, it is possible to have a clearer view over the aspects inherent to the commercial process. It can be deducted through these results that the main ways of client inbound to the company is through recommendation, e-books that are available on the website and the sale to the current clients on other projects. It is possible to affirm that the division of the commercial process in client inbound, follow-up and proposal alignment directly affect the view of the client on the company, and the way that the workers respond to the budgeting and other

requests. Although very well defined, this process is yet dependent on difficulties presented by the team of Strongstep. Some of those difficulties are closely connected to the platform like the knowledge about it being focused on the development team and the commercials don't really know how to present the benefits and adapt the presentation to different industries. There is a lack of commercial process for SCRAIM which makes it harder to have a straightforward process to sell it which is related to the problem mentioned before. There is still the difficulty in aligning the effort of the several departments involved in the proposals for budgeting, creating misalignments between teams.

During the interviews it was mentioned several times that the fact that the teams sometimes did not have their tasks and scope of work well defined, caused some problems that affected the formulation of a correct approach and response to the customer, something that must be taken in consideration when presenting the results.

These aspects are going to be further mentioned, when proposing a new approach to the platform using lean startup techniques combined with service design methodologies. The fact that these aspects are internal to the company, makes it easier to develop several iteration cycles in order to test the best option to solve these issues.

### ***SCRAIM perspective***

| Coding                                       | Source<br>(n=11) |
|----------------------------------------------|------------------|
| SCRAIM                                       | 6                |
| – SCRAIM presentation                        | 6                |
| a. Clients Needs                             | 3                |
| Finding needs                                | 1                |
| Adapting platform to needs                   | 2                |
| Introducing the platform                     | 2                |
| b. Communication difficulties                | 1                |
| Proposal Features                            | 1                |
| Platform Division                            | 1                |
| c. Presentation Preparation                  | 5                |
| Demo creation                                | 3                |
| Presentation of advantages                   | 2                |
| Client Requirements                          | 2                |
| Success Cases                                | 2                |
| Financial Details                            | 1                |
| d. Formation Period                          | 2                |
| Formation                                    | 1                |
| Onboarding                                   | 2                |
| e. Free period for testing                   | 1                |
| – Handout SCRAIM                             | 2                |
| a. Free trial                                | 1                |
| b. Doubts                                    | 1                |
| c. Contract                                  | 1                |
| d. Follow-up                                 | 1                |
| – Clients Difficulties                       | 4                |
| a. Lack of knowledge about the platform      | 2                |
| b. Visual aspect                             | 2                |
| c. Too many functionalities at once          | 3                |
| d. Adapting to platforms that are being used | 1                |

|                                                      |   |
|------------------------------------------------------|---|
| e. Lack of agility                                   | 1 |
| f. Bugs                                              | 1 |
| g. Not so intuitive platform                         | 1 |
| h. Many paths to the same feature                    | 1 |
| – Being Improved Now                                 | 2 |
| a. Order flow                                        | 1 |
| b. Work Hours Registration                           | 1 |
| c. Landing page                                      | 1 |
| d. Work management                                   | 2 |
| – To do Next                                         | 6 |
| a. Add new features                                  | 4 |
| Feature for consultancy                              | 1 |
| Download of indicators                               | 1 |
| Division of projects workload                        | 1 |
| Improvement in project creation                      | 1 |
| Create SCRAIM portal                                 | 1 |
| Review unused functionalities                        | 1 |
| Create Communication functionality                   | 1 |
| b. Improve customized features response              | 1 |
| c. Prepare platform for business model               | 1 |
| d. Commercial                                        | 4 |
| Encourage the use of the platform in clients         | 1 |
| Create a narrative                                   | 1 |
| Develop business model                               | 2 |
| Test the subscription business model                 | 2 |
| e. Fundamental Areas                                 | 3 |
| Security of the platform                             | 1 |
| Server infrastructure                                | 1 |
| Marketing development of SCRAIM                      | 1 |
| Commercial effort                                    | 2 |
| – Internal Feedback                                  | 6 |
| a. Advantages                                        | 5 |
| Backlog of tasks                                     | 1 |
| Report of work hours                                 | 1 |
| Customizable platform                                | 1 |
| Online platform                                      | 1 |
| Adaptability                                         | 2 |
| Easy to manage work                                  | 2 |
| Allows allocation of tasks                           | 2 |
| Helpful Functionalities                              | 3 |
| b. Disadvantages                                     | 5 |
| Terminology used                                     | 1 |
| Lack of timetable for tasks                          | 1 |
| Lack of features                                     | 1 |
| Bureaucracy                                          | 1 |
| Lack of project division feature                     | 1 |
| Lack of ability to extract indicators                | 1 |
| Platform visible appearance                          | 2 |
| Platform flow                                        | 3 |
| Not so intuitive                                     | 3 |
| Platform Division                                    | 4 |
| Division of projects don't allow to see the workload | 1 |
| Division of features all over the platform           | 3 |

Table 3 – Internal SCRAIM perspective codings

Taking a closer look to the platform itself analyzed in Table 3, there are a lot of points to analyze. The interviews gave a good insight on how the processes for presentation of the platform and the handout of the use of it is currently made. Considering these interviews, it is possible to affirm that there are some problems when it comes to mention the platform features and the division of the platform. This problem can be linked to the previously mentioned lack of knowledge by the commercial team on the platform and how it works. This detail can create false information and mislead clients. In the process of handing the platform, since this is something that is in the hands of the developers yet, seems to be running smoothly, being the team available for questions and for periods of training with individuals or teams.

Having contact with the clients, mainly the consultants, it is possible to pinpoint the difficulties that are felt during the use of SCRAIM. Some of these circles around the lack of knowledge about the platform, and as was said during the interviews. This problem can be explained by the fact that the company only chose one person to receive training on the platform, and that person left meanwhile, leaving some coworkers with lack of insight on how to use and take advantage of the features available. Besides that, there are more functional aspects about the platform, mainly regarding its visual aspect and the division of functionalities on the main menu. This problem causes others like the lack of intuitiveness and agility, and the fact that there are way too many paths to reach the same feature, leaving the user confused. Other difficulties are related to the bugs that time to time appear, but are easily solved, and also the adaptability of SCRAIM to other platforms that customers might be already using. Some members of Strongstep claim that customers tend to instead of using just SCRAIM, try and adapt it to the ones that are already being used. This can happen not only because there are some failures in the platform but also because the customers are not willing to leave a platform that they are trained and used to, to risk in something new and edgy.

Some of the problems that were mentioned are already being solved by the development team or are in the following provisions for development in the near future. Also considering the opinion of the team of Strongstep, which uses the platform on a daily basis, there are some advantages and disadvantages that are pointed by them. Focusing on the negative aspects of the platform, the fact that the terminology used might not be as straightforward as it might seem, causing some users to be confused. Besides that, the Strongstep coworkers focus on other issues regarding features like the lack of some like project division and the ability to extract indicators directly from the platform, also mentioning the flow of the platform which cause it not to be so intuitive.

These conclusions and opinions are helpful to create a connecting point between the failures in the platform, the service provided and the way they can be improved. The tools used for this improvement is also something to be analyzed.

**Improvement Points**

| Coding                                  | Source<br>(n=11) |
|-----------------------------------------|------------------|
| Improvement Points                      | 4                |
| – Effort between departments            | 1                |
| – Creation of common calendar           | 1                |
| – Services Definition                   | 1                |
| – Information centralized               | 1                |
| – Structure the data base               | 1                |
| – Automatize the budgeting process      | 1                |
| – HR turnover                           | 1                |
| – Definition of scope of departments    | 1                |
| – Apply customer satisfaction inquiries | 1                |
| – Mention SCRAIM in budgeting           | 1                |
| – Alignment of contacts information     | 1                |
| – Hire more workforce                   | 1                |

**Table 4 – Internal improvement points coding**

Considering the points mentioned during the interviews to the internal team of Strongstep, there were some improvement points mentioned. These aspects are details that somehow impact the day-to-day work of the team. They are essential to comprehend some of the issues involving SCRAIM. All the improvement points mentioned were divided in the codes represented in table 4, and therefore analyzed. Some of the most important improvement points that can be related to the platform are management of effort between departments, that can also be related to the lack of workforce and the better definition of the scope of the departments. In addition, there is the need for centralized information so that everyone has the same information and guidelines to follow. Regarding a more generalized aspect, there is also the fact that the platform is not yet mentioned in the budgeting process. To companies that might be looking for a service in the process and project management area, this can be game changer.

Through all the improvement ideas suggested by those who were interviewed, we can better understand some pain points that may be causing the misalignment in the processes, causing the MVP of SCRAIM not be as effective and successful as expected.

## 5.2 External Perspective Results

These results include clients that both had a contact and used the platform in study, or never used or had any connection with it. This sample makes it possible to have different perspectives, on one side those who will mention the errors and what they would like to see improved, and in the other the perspective of someone who is using a competitors' platform, with different features, and that can bring new insights for the platform development.

The points that were more talked during the interviews were related to the commercial process, to the client perspective on the company, communication aspects, the needs that lead to the approach to Strongstep and the improvement points that can be made. In this analysis, the focus will be on the commercial process, the communication, the platform, and details involved, and the improvements suggested.

### **Commercial Process Results**

| Coding                                              | Source<br>(n=11) |
|-----------------------------------------------------|------------------|
| Commercial Process                                  | 3                |
| – Search for Supplier                               | 2                |
| Internal Process (other businesses with Strongstep) | 2                |
| – Approach to Strongstep                            | 3                |
| Email                                               | 1                |
| Previous experience with the company                | 1                |
| Search in the market                                | 1                |
| Website                                             | 1                |

**Table 5 - External Commercial process codings**

In the first stage of analysis, regarding the commercial process, it is clear through the analysis of the results in Table 5 related to Table 2, that there are a lot of differences detail wise, between what is mentioned by the team members and the clients. The team is very specific in various aspects, while the clients only mention the way they approach the company in search for their services, and the pleasing experience that they have with the company in general, referring to the staff as methodical and professional, showing a care and availability that is hard to find in nowadays market. In this area, there is not much to add or use in order to improve the service that is being studied.

### **Communication Results**

| Coding                       | Source<br>(n=11) |
|------------------------------|------------------|
| Communication                | 3                |
| – Skype                      | 1                |
| – Phone                      | 1                |
| – Videocall                  | 1                |
| – Directly through coworkers | 1                |
| – Email                      | 2                |

**Table 6 - External Communication codings**

As the commercial area, the communication does not have any points mentioned by the customer that are in urgent need for improvement or repair. On the contrary, this field is referred to by the customers as one of the big positive characteristics of Strongstep. These results help on the perspective that the customer relates the good communication established between both sides, with the way they perceive them as a committed team. This part can later turn out to be an advantage since the client feels more at ease and comfortable with coming forward with any detail or suggestion.

### SCRAIM Results

| Coding                                      | Source<br>(n=11) |
|---------------------------------------------|------------------|
| SCRAIM                                      | 5                |
| – Objectives                                | 1                |
| Management of projects                      | 1                |
| – Management tools benchmarking             | 1                |
| – Feedback                                  | 4                |
| Advantages                                  | 3                |
| Many functionalities in one platform        | 1                |
| Continuous improving platform               | 1                |
| Ready to use platform                       | 1                |
| Online platform                             | 1                |
| Helpful for management of tasks             | 1                |
| Intuitive                                   | 2                |
| Disadvantages                               | 3                |
| Unvaluable fields to fill                   | 1                |
| Unnecessary functionalities or repeated     | 1                |
| Lack of feature for prioritization of tasks | 1                |
| Too many paths for the same feature         | 1                |
| Platform Visual appearance                  | 2                |
| – Suggestions                               | 3                |
| Projects Mapping                            | 1                |
| High level perspective of the projects      | 1                |
| Simplify features                           | 1                |
| Compliance with requirements                | 1                |
| Adaptability to other platforms             | 1                |
| Prioritization of tasks                     | 1                |

**Table 7 - External SCRAIM codings**

Having in mind the results of the interviews related to the platform itself, there are some alignments with some details previously mentioned that can be made. According to what was mentioned during the interviews and looking to the results in Table 7, one of the easiest details that stood out was the fact that clients felt that the platform was intuitive, while the team, that uses the platform on a daily basis, sets this as something that needs to be improved. A common aspect that is mentioned by everyone in the same way is the visual appearance of the platform. Besides being grey and not attracting the user's attention, the way that functionalities are dispersed makes it hard for the user to reach the result intended. There are too many paths to reach the same feature, and there are unvaluable fields to fill that turn out to be overwork and unnecessary functionalities that only occupy space in the platform cloud.

The aspects mentioned previously go hand-to-hand with the suggestions made. The most obvious connection between these two fields is the fact that clients ask for the simplification

of features. This can be not only related to the visual appearance of SCRAIM but also to the fact that are unvaluable fields and unnecessary functionalities. These suggestions allied with the benchmarking on the platforms mentioned by some of those who were interviewed can be key to understand new points of improvement in order to create a more user-friendly platform with a more direct focus on the client.

### **Improvement Points**

| Coding                     | Sources<br>(n=11) |
|----------------------------|-------------------|
| Improvement Points         | 3                 |
| – Meetings schedule notice | 1                 |
| – Response time            | 1                 |
| – Delays in processes      | 1                 |

**Table 8 - External Improvement points codings**

The improvement points mentioned by the interviewees were mostly related to aspects that were mentioned by most of them as a positive aspect. For example, those who were interviewed mentioned that the team had high availability and good communication between both sides. Being so, the aspects mentioned in this particular section are related to one-time events, or problems that aren't in the company's scope of reach to solve. For example, the response time on developing or delivering a functionality when the customer needs is not always possible since there are a lot of aspects that can change the response time that the company does not have control over. Besides that, the delays in processes, also related to the previous mentioned point, is also not something that could be managed by the company, as mentioned by the interviewed. Finally, the point where Strongstep can really improve is the time that is given for meetings schedule. Instead of scheduling every meeting in short notice, the team should try to do a schedule line up with the clients, in order to make this smooth and practical for everyone involved. As it can be seen in Table 8, these were aspects that were mentioned by three different individuals, being so that this is something that is not recurrent in the company books and is not dependent only on Strongstep organization.

## 6 Proposed Solutions

Considering SCRAIM as an online service for project management based on adaptable processes that follows the best standards and practices, there are several points of improvement that can be considered in the current MVP. In this chapter, it is intended to intersect the results from the several interviews, with the documental analysis, and apply an iteration cycle based on lean startup, with the use of techniques from service design. Lean startup will help in the primary stages of development, but aligned with MINDS Method, the service design tool chosen, it can become resourceful in the creation of several iterations in order to continuously improve the final product.

The following figure represents the proposal for an iteration cycle with both methodologies, the Build-Measure-Learn technique, and the MINDS Method for service design, with the objective to improve the service in a continuous cycle that is available whenever there is a problem in the system of the MVP, mainly related to its definition and scope.

Through this method developed, that can be consulted in Figure 8, there is three levels to the development of the service/platform. In the first level, new ideas will be taken into account, and in the build phase of the build-measure-learn technique, there will happen the first stage of the multilevel service design from MINDS method. In a first perspective, considering the idea that is being developed, a service concept should be designed through two perspectives, the interaction and management. The tools that can be used to aid this process are the affinity diagram and the customer value constellation. The service concept will comprehend the benefits provided to the customer, which can be something besides the service itself (Teixeira et al., 2016). After the definition of the service concept, the iteration cycle continuous until this definition is without flaws. Moving on to the next level, there is the design of the service system. It follows the same line of thought, having two perspectives to consider and having the possibility to use tools like storyboards/scenarios and service system navigation to better reach a final definition. The service system will provide the configuration of people, technology and other resources that have some kind of interaction with other service systems in order to create mutual value (value cocreation) (Teixeira et al., 2016). Having done that, the build-measure-learn cycle continues to the measure stage, where data related to the service developed will be created and following that data to the learn stage, if there are improvements to be made, the first level of the cycle should continue, otherwise should move on to the following level.

On the third level, after the correct development of the first and second stages, there is the design of the service encounter on the Build phase. In this designing phase, there is the possibility to use the UX/Wireframe Sketch and the Service Experience Blueprinting. The service encounter design includes the touchpoints during the service provision, being them the moments of interaction between the customer and the company (Teixeira et al., 2016).

With this method of interaction between two different methodologies, there is the possibility to scrutinize issues in the service before it being launched to the market, avoiding problems in its use by the end consumer. Besides that, there is the advantage of being an easy and practical way to save money, since there is a filter that allows to develop a proper service (MINDS method) and another that measures the outcomes of the development and considers if there is a learning margin or if it is a ready to sell service.

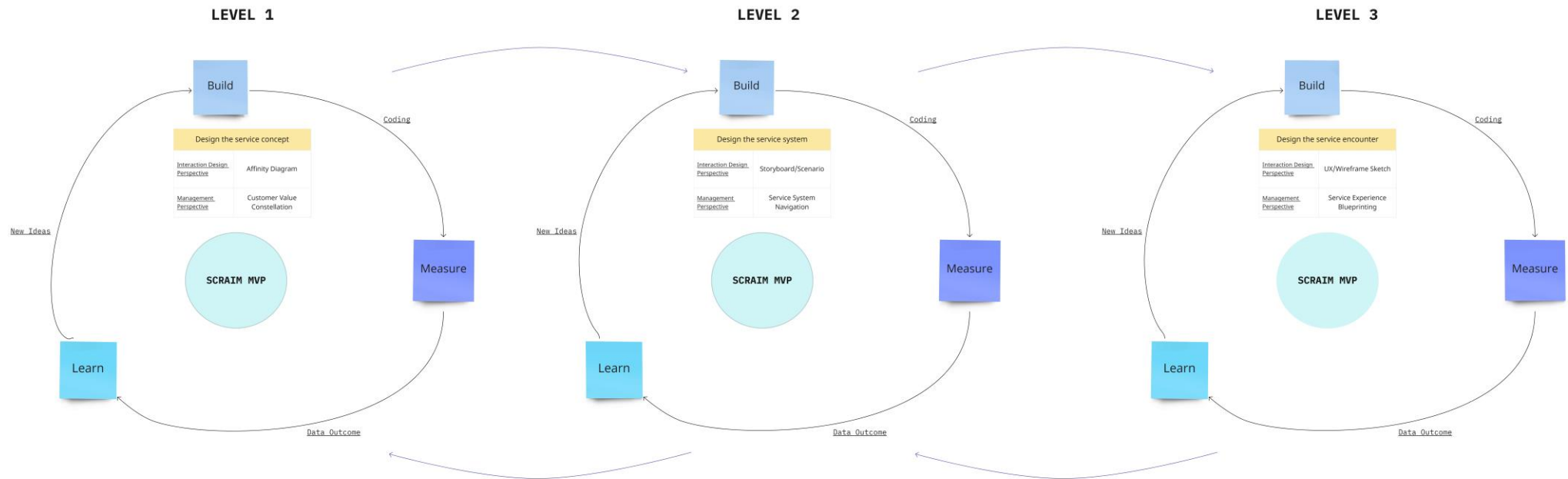
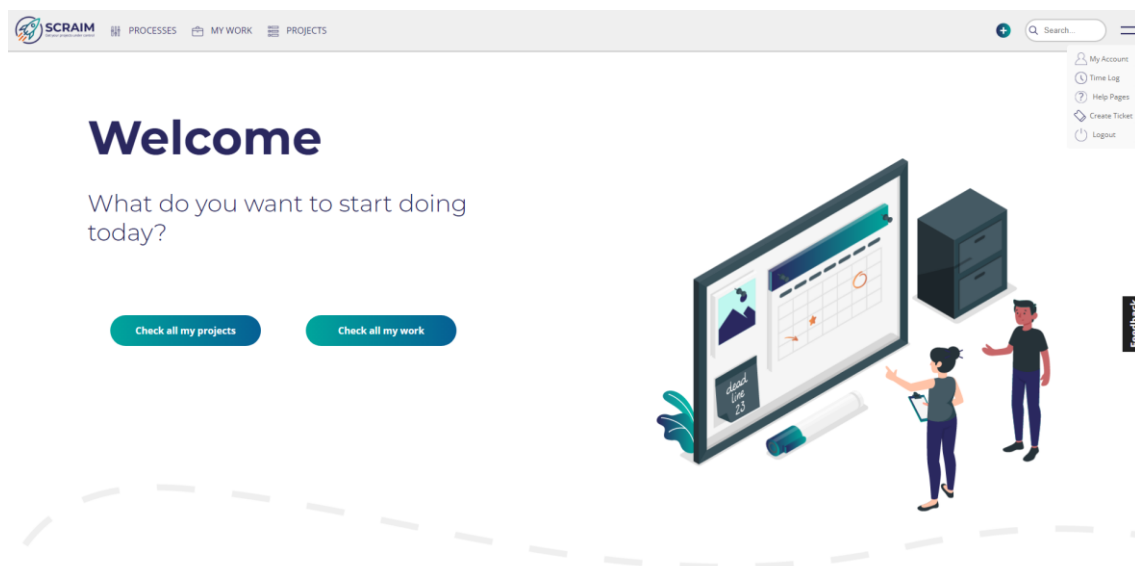


Figure 8 - "Build-Measure-Learn" + Minds Method technique

## 6.1 SCRAIM MVP - to be

Considering the flaws that were mentioned throughout the interviews, both internally and externally, those are details that can be analyzed and developed through this system, mainly the improvements suggested both on the company in general, as well to the SCRAIM and its functionalities. To better understand how the MVP of this platform should be developed, a review of how the platform currently will be conducted and then a few sketches on the platform visual appearance will be displayed, in order to better explain the improvements that can and should be made in a near future.

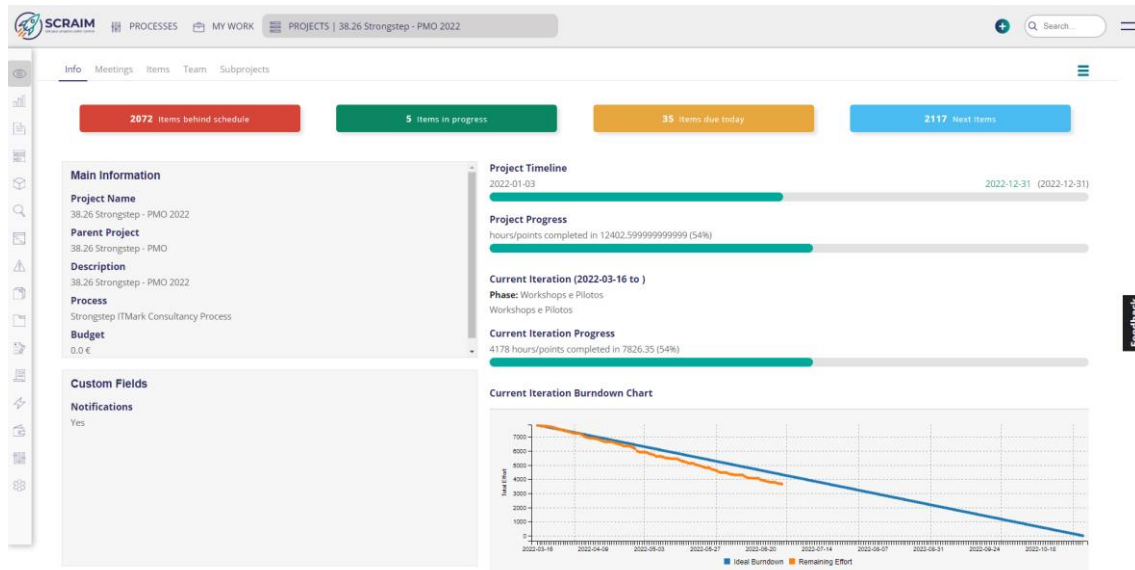
Currently the main menu of the platform is as displayed in the image bellow. Although it is a pleasing menu, there is some problems related to it, that are one the sources of complaints of both the team of Strongstep and the clients. Taking a closer look to the features that are available in a first sight, there is the fact that there at least two ways to report a problem in the platform. This can be done either through a ticket in the right upper corner of the menu, or by the dark blue box of “feedback”. This is one of the issues that make the platform sometimes confusing. This could be solved through the use of one single feature between these two. The preferable would be the feedback one, since it is more straightforward and can have a filter on the kind of feedback that the user wants to give.



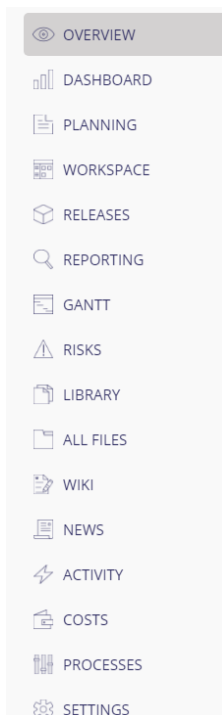
**Figure 9 - Screen shot main menu SCRAIM**

Related to the other features in the screen of Figure 10, there is the processes that are going on in the company, and that are needed to create a new project. This is where the new projects are created, always having as background a process. On the “my work” feature, there is the possibility to see the work to be done, already finished and behind schedule. Lastly, there is a project button that directs the user to a screen to choose the project that they want to edit. Moving forward from the features, the platform as mentioned by some of the interviewed, has light grey colors, mixed with some details in blue. Despite this being a detail, nice affects the way that people work in the platform. They might not be so eager to make any alterations in the platform because the visual aspect of it is not appealing. This detail could be improved by adding more color to the general perspective of the platform.

Moving to the menu of a chosen project, the first data that appears is the overall info about the project. With a lot of information on many aspects that might be helpful for the management of the project, this feature becomes a little too overwhelming having aspects that are not well explained like the “current iteration burndown chart”.



**Figure 10 - Screen shot main info on project SCRAIM**



**Figure 11 - Options and functionalities of SCRAIM**

Besides the information shown when opening a project, there is the features available in the left side of the screen, as shown in Figure 11. There are some of these features that are duplicated to what is in the headline of the platform, as well as the fact that there is the use of terminology that don't really explain what is being shown when opening the functionality. For example, the “My work” functionality in the headline should be replaced with the “Workspace” feature, that could demonstrate the whole workload on every project, and filter into categories as wished.

In the workspace feature, there is the fact that it is only possible to see the tasks for the specific project chosen not in a general way, and the filters are only for the team members that the user wants to be displayed. It makes the whole point of “workspace” like feature vanish if the user cannot see everything he has to do.

As mentioned during the interviews, there are several features that are not being used, creating unnecessary weight in the platform, being them the releases, reporting, news, and activity functionalities. The wiki pages are another feature that is not well defined and that lacks the addition of characteristics that will improve its functioning or a deep revision as the two previous mentioned ones.

## 6.2 Prototypes Suggestions

Considering this brief analysis, the MVP should be improved in the following aspects: creation of business plan, improve the intuitiveness of the functionalities, change some of the unnecessary fields of the features, add different features, and made alterations to the visual appearance. These are all aspects that are noticeable in the platform in a first analysis and were mentioned in the several interviews performed. They are also key to help continuing developing the platform correctly, since they are the basis to following steps to take.

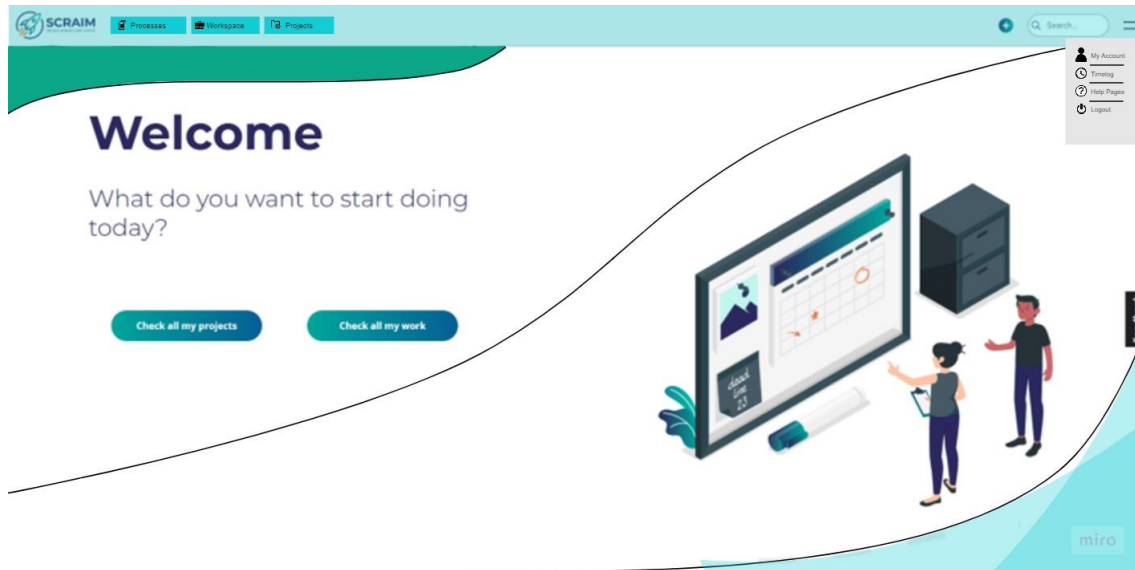
In a brief perspective over the points that can be altered in an easy way, during this study it was developed a prototype for one of the problems that was the most mentioned throughout every interview. The visual aspect of the platform that made it look unpleasant and did not incentivize the use of it. In order to make it more appealing, a prototype was developed with the use of more vivid colors that are present in the logo of SCRAIM. These colors, being bright bring a bigger amplitude to the platform, improving the aspect mentioned previously.

Besides improving this factor in the prototype, it was also taken into consideration the disposition of features and the ones that should be replaced. The “My Work” feature was replaced with the “Workspace” feature, and the creation of tickets in the right upper corner of the menu was eliminated, passing to the feedback box as suggested previously. The final result of the prototype can be seen in image twelve.

This improvement suggestion was made considering the technique developed previously, adding the lean start-up “Build-Measure-Learn” cycle, and MINDS method. In the first level, it was developed the concept of the new updates to the visual aspect of the main menu. It was defined the changes that wanted to be made, as well as the improvements on the functionalities that are available on this menu. After defining that, there is the measurement phase, where there is an analysis of the implementation of the improvements in the platform. After that phase, there is the learn stage, where there is the acknowledgment of the new data outcome.

On the second level, there is the ideation of a first prototype in order to understand if the concept developed is doable. In the measure stage, there is the analysis of the prototype developed, in order to get new data on that. In the learning phase, there is the processing of the data that comes from the previous stage (measure). If there are improvements to be made, it can continue this cycle, or it can go back to the previous one.

In the last level, there is the design of the service encounter, that is more focused on the customer and the final service to be provided. The cycle follows the same thought as the two previous ones, in the coding, data outcome and new ideas as well as in the interaction between cycles. The outcome from these iteration cycles, is the following prototype developed (Figure 12):



**Figure 12 - Prototype for improvement of the main menu of SCRAIM**

Of course, these are only suggestions being made in a primary stage of analysis, but there are some topics that can be picked up and improved in a near future by the development team, details that were not in their scope of knowledge. In this improvement processes, it is of the most importance to apply the methodology developed in this study, testing out every idea and development in several iterations. This methodology will allow to develop a service according to the expectations of the customer, ready for the market, with the advantage of cost saving for the company, since the final service that is presented is always tested in the iterations made and have the basis of continuous improvement.

### 6.3 Customer Journey Development

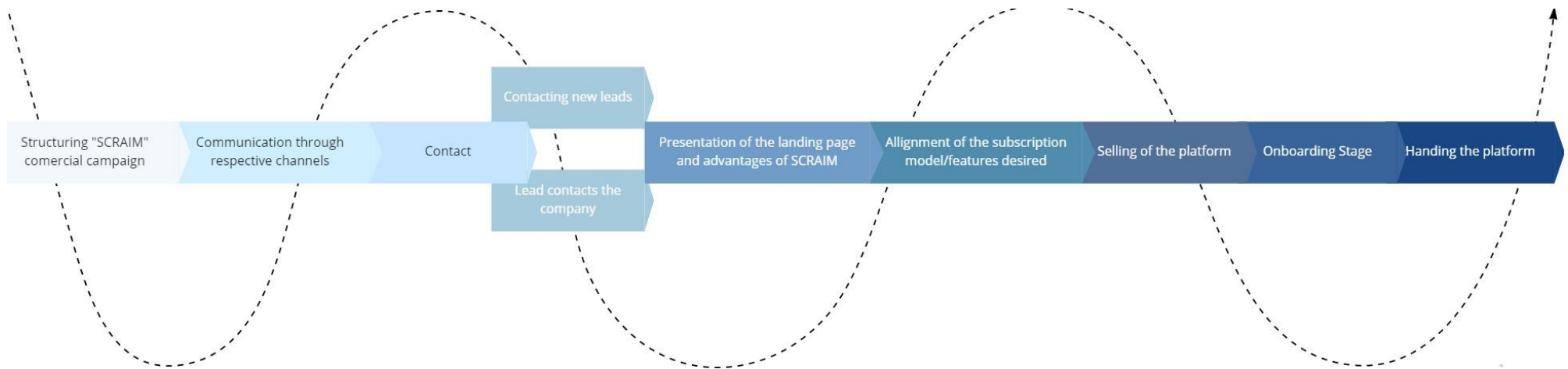
With these changes, the customer journey will also suffer alterations. Since there is not a proper business model to apply to the service, the current state of communication and sale of SCRAIM is not steady and do not follow a predefined process established in a manual. In this way, being this something that must be created also, simultaneously with the platform improvements some characteristics can be pointed in this stage. The definition of this step on the sale of this service is extremely important, not only to have a consistent process that is followed by the whole company, but also to be in syntony with the quality standards that are applied by the company. Having said that, the main aspects to have into account in this matter are related to how the contact is made with the client, and what follows that contact.

SCRAIM can be proposed to clients and new customers in various ways. To the clients with whom the company has some contact or is applying some standard or training, the platform can be mentioned as a way to guide the processes related to the services being provided. Although this is already being done in some cases, it is important to turn this into a standard. The creation of new features, mainly regarding consultancy might be something that will aid in this aspect. To the customers that are new, and applied for a budgeting for other services, the platform should be mentioned in the budgeting presentation. This mention can influence the decision of the customer, and they might be looking for some service in this area, which make it a win-win situation.

The sale of the service is yet immature. There is a need for a lot of effort developing a formulated presentation for the platform in order to mention all the benefits associated, the advantages of businesses when using it and the success cases. Besides the details that are presented when a customer shows interest, there is the marketing stage that is also in the development stage. The creation of a landing page with its promotion in various channels, will bring new leads interested in this service, service which has a lack of offer in the market, since all the tools that are used in project management are separated and used apart.

From this point onwards, there are some small adjustments to be made in the client perspective. As it is, the company offers a month freely so that the client can decide on if the platform suits their needs or not. Besides that, there is a training period where the team that is responsible for that, provides education on the use of the platform and how to better take advantage of the features available. These trainings should not be made as they are now, to only one person in the company, rather to at least one person of each department or a percentage of employees of the company, so that is not a loss of knowledge when somebody leaves their job. The proposed customer journey process is developed in scheme in figure 13.

After this passing ritual and the adjudication of the platform depending on the subscription model chosen, the client should be free to use the platform at their will. Strongstep and their developers should be available to solving possible failures that might occur during the use of SCRAIM, and to clarify any doubts that might arise. To this customer journey be correctly defined and put to work, as said before, there are some aspects to work on such as the features and platform flow, as well as the development of a business plan without which there is not conditions to go further in the commercial process. The business plan combined with the platform and its advantages and functionalities, are the basis for the whole process to work. In the following image, it is presented the proposed customer journey for the sales department regarding the SCRAIM platform.



**Figure 13 - Customer Journey Process Suggestion**

## 7 Conclusions

This study focused on the improvement of a MVP service that is being developed in a startup company, and its improvement using a new technique with the crossing of lean startup and service design tools. Considering that the platform in analysis was developed by a technological startup company and its in its early stages of development, being nominated as a minimum viable product, the study was directed in the innovation and entrepreneurship literature review. To answer the research question defined in the introduction, a review in lean methodology and service design was made, with the objective of developing a new technique to improve the platform in cause. Having this choice in account, the study will ultimately contribute to the exploration of new techniques of development of services, mainly in startup companies.

To support this dissertation the research on literature review was detailed in several fields such as Innovation and Entrepreneurship, Customer Journey, customer experience, lean methodology more specifically lean startup and finally service design. Besides giving a context to follow the methodology stage, gave a definition of the possible tools and intersections that could be done in following stages.

To better adjust the methodology to be put into practice, a documental collection was made, as well as a brief analysis of the platform as it is and the main features and advantages that the company claims that it has. In this stage, an approach to the company, its services, and the reason why this study came to also be developed.

Moving forward to the methodology, considering the fact that this is an MVP in early development stages and that there are some clients that are experiencing a pilot testing mode of the platform, it felt more appropriate to follow a qualitative methodology based on semi-guided interviews. Those interviews were recorded and posteriorly coded in the NVIVO platform, in order to have a clearer perspective on the results. Besides the interviews, a short approach to the platform and its main features was made to understand some of the points mentioned in several interviews.

Accordingly, to what was stipulated, a suggestion was proposed following the guidelines of the methodologies chosen, being them the lean startup Build-Measure-Learn iteration cycle and the MINDS method tool of service design. This resulted in a technique that can be applied to the service in question, though several iteration cycles in a first level, and in-depth in a second one, where the service is developed to the last stage where it is ready to be sold as final. The technique proposed allows a continuous and stable improvement cycle with a service design perspective that is not present in the usual lean methodologies.

In addition, a prototype of a suggestion on one of the most mentioned problems of the platform was made, so that it could be visualized the goal of at least one of the improvements suggested. Although there is a prototype suggestion this does not remove the need to follow the technique suggested. In the last part of the dissertation, the customer journey on the service was approached, and it was proposed the new customer journey for the platform in the sales department, considering that the improvements are made in the close future and that there is a creation of a business plan much needed to put in progress the journey desired.

Considering the uniqueness of the study, taking into account that it is focused on a project management service developed by an IT startup, although its application is formulated to this

specific case, the technique developed might be of interest to explore and to improve to apply in other cases and even in larger scales. It might be interest to in further studies understand in more depth, the customer experience impact on these services, the sustainable development of new services in startups and the impact of entrepreneurship on the creation and development of new ideas in the Information Technology market.

## 8 References

- Adjei, E. K. (2021). Surviving start-ups: the importance of entrepreneurial capital. *Regional Studies, Regional Science*, 8(1), 239-258. doi:10.1080/21681376.2021.1927813
- Azzine Shiratori, E. K., Hofmann Trevisan, A., & Mascarenhas, J. (2021). The customer journey in a product-service system business model. *Procedia CIRP*, 100, 313-318. doi:<https://doi.org/10.1016/j.procir.2021.05.072>
- Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service Blueprinting: A Practical Technique for Service Innovation. *California Management Review*, 50(3), 66-94. doi:10.2307/41166446
- Chahal, V., & Narwal, M. S. (2017). An empirical review of lean manufacturing and their strategies. *Management Science Letters*, 7, 321-336. doi:10.5267/j.msl.2017.4.004
- Choi, D. S., Sung, C. S., & Park, J. Y. (2020). How Does Technology Startups Increase Innovative Performance? The Study of Technology Startups on Innovation Focusing on Employment Change in Korea. *Sustainability*, 12(2). doi:10.3390/su12020551
- Choy, L. T. (2014). The strenghts and weakenesses of research methodology: Comparison and complimentary between qualitative and quantitative approaches. *IOSR Journal of Humanities and Social Science*, 19(4), 99-104.
- Cohen, R. I. (2018). Lean Methodology in Health Care. *Chest*, 154(6), 1448-1454. doi:<https://doi.org/10.1016/j.chest.2018.06.005>
- Crowe, S., Cresswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 100. doi:10.1186/1471-2288-11-100
- Diana, C., Pacenti, E., & Tassi, R. (2009). *Visualtiles: Communication tools for (service) design*.
- Dubickis, M., & Gaile-Sarkane, E. (2015). Perspectives on Innovation and Technology Transfer. *Procedia - Social and Behavioral Sciences*, 213, 965-970. doi:<https://doi.org/10.1016/j.sbspro.2015.11.512>
- Farinha, L., Ferreira, J. J. M., & Nunes, S. (2018). Linking innovation and entrepreneurship to economic growth. *Competitiveness Review: An International Business Journal*, 28(4), 451-475. doi:10.1108/CR-07-2016-0045
- Følstad, A., & Kvale, K. (2018). Customer journeys: a systematic literature review. *Journal of Service Theory and Practice*, 28(2), 196-227. doi:10.1108/JSTP-11-2014-0261
- Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of basic and clinical pharmacy*, 5(4), 87-88. doi:10.4103/0976-0105.141942

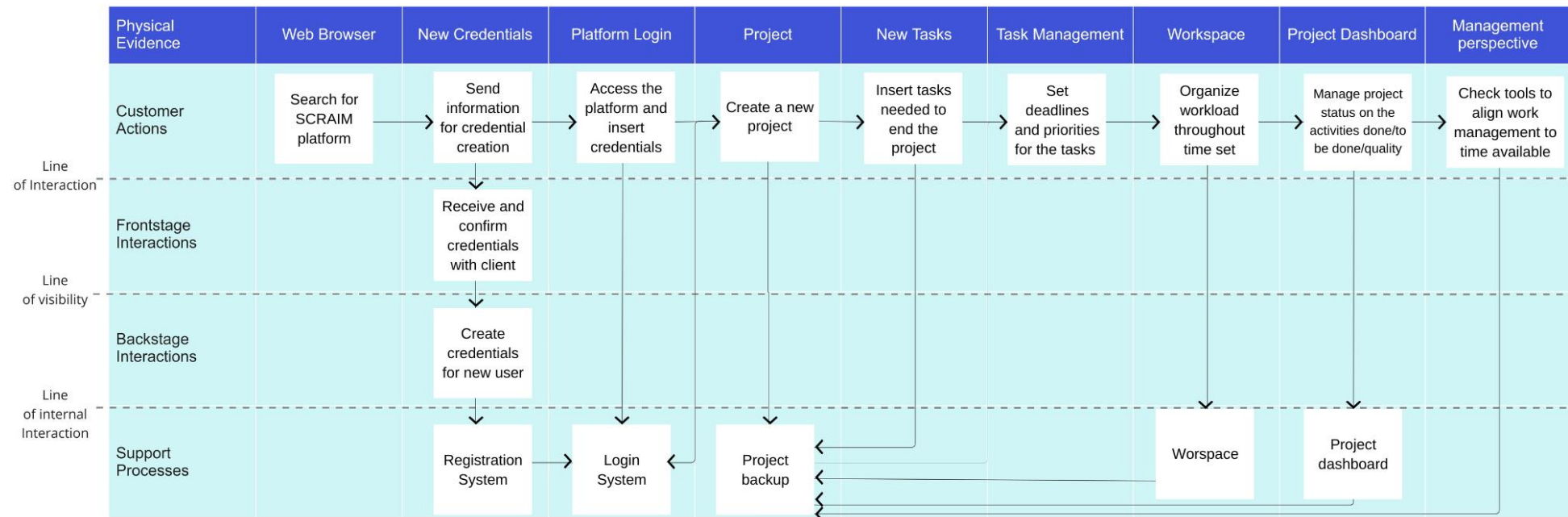
- Juliana, N. O., Hui, H. J., Clement, M., Solomon, E. N., & Elvis, O. K. (2021). The Impact of Creativity and Innovation on Entrepreneurship Development: Evidence from Nigeria. *Open Journal of Business and Management*, 09(04), 1743-1770. doi:10.4236/ojbm.2021.94095
- Kilani, M. A., & Kobziev, V. (2016). An Overview of Research Methodology in Information System (IS). *OALib*, 03(11), 1-9. doi:10.4236/oalib.1103126
- Lawal, A. K., Rotter, T., Kinsman, L., Sari, N., Harrison, L., Jeffery, C., . . . Flynn, R. (2014). Lean management in health care: definition, concepts, methodology and effects reported (systematic review protocol). *Systematic Reviews*, 3(1), 103. doi:10.1186/2046-4053-3-103
- Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketing*, 80(6), 69-96. doi:10.1509/jm.15.0420
- McGrath, C., Palmgren, P. J., & Liljedahl, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical Teacher*, 41(9), 1002-1006. doi:10.1080/0142159x.2018.1497149
- Nasermoadeli, A., Ling, K., & Maghnati, F. (2013). Evaluating the Impacts of Customer Experience on Purchase Intention. *International Journal of Business and Management*, 8. doi:10.5539/ijbm.v8n6p128
- Neely, A., & Hii, J. (1998). *Innovation and business performance: A literature review*. University of Cambridge, University of Cambridge. Retrieved from [https://www.researchgate.net/profile/Andy-Neely/publication/264870158\\_Innovation\\_and\\_Business\\_Performance\\_A\\_Literature\\_Review/links/53fb561b0cf2e3cbf5662b82/Innovation-and-Business-Performance-A-Literature-Review.pdf](https://www.researchgate.net/profile/Andy-Neely/publication/264870158_Innovation_and_Business_Performance_A_Literature_Review/links/53fb561b0cf2e3cbf5662b82/Innovation-and-Business-Performance-A-Literature-Review.pdf)
- Nordlund, J., & Yli-Hukkala, K. (2002). *Total Quality Management by John S. Oakland Vesa HÄTILÄ*.
- Patrício, L., & Fisk, R. P. (2013). Creating new services. In (pp. 185-207).
- Patrício, L., Fisk, R. P., Falcão e Cunha, J., & Constantine, L. (2011). Multilevel Service Design: From Customer Value Constellation to Service Experience Blueprinting. *Journal of Service Research*, 14(2), 180-200. doi:10.1177/1094670511401901
- Patrício, L., Pinho, N. F. d., Teixeira, J. G., & Fisk, R. P. (2018). Service Design for Value Networks: Enabling Value Cocreation Interactions in Healthcare. *Service Science*, 10(1), 76-97.
- Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S., & Waseem, A. (2019). Case Study Method: A Step-by-Step Guide for Business Researchers. *International Journal of Qualitative Methods*, 18, 1609406919862424. doi:10.1177/1609406919862424
- Rexhepi, G., Hisrich, R., & Ramadani, V. (2019). Open Innovation and Entrepreneurship: An Overview. In (pp. 1-7).

- Ries, E. (2011). *Lean Startup - How constant innovation creates radically successful businesses* (Viking Ed.).
- Rogers, M. (1998). The Definition and Measurement of Innovation. *Melbourne Institute*, 10/98.
- Rosado-Cubero, A., Freire-Rubio, T., & Hernández, A. (2022). Entrepreneurship: What matters most. *Journal of Business Research*, 144, 250-263. doi:<https://doi.org/10.1016/j.jbusres.2022.01.087>
- Segelström, F. (2009). *Visualizations as Tools for Research: Service Designers on Visualizations*.
- Silva, L. S. C. V. D., Kaczam, F., Dantas, A. D. B., & Janguia, J. M. (2021). Startups: a systematic review of literature and future research directions. *Revista de Ciências da Administração*, 23(60), 118-133. doi:10.5007/2175-8077.2021.e80666
- Sońta-Drączkowska, E. (2019). New Product Development in high-tech startups — a conceptual framework. *Marketing i Rynek*, 2019, 30-37. doi:10.33226/1231-7853.2019.1.3
- Teixeira, J., Patrício, L., Huang, K.-H., Fisk, R. P., Nóbrega, L., & Constantine, L. (2016). The MINDS Method: Integrating Management and Interaction Design Perspectives for Service Design. *Journal of Service Research*, 20. doi:10.1177/1094670516680033
- Teixeira, J., Patrício, L., Nunes, N. J., Nóbrega, L., Fisk, R. P., & Constantine, L. (2012). Customer experience modeling: from customer experience to service design. *Journal of Service Management*, 23(3), 362-376. doi:10.1108/09564231211248453
- Ulwick, A. (2002). Turn Customer Input into Innovation. *Harvard business review*, 80, 91-97, 126.
- Vendrame Takao, M. R., Woldt, J., & da Silva, I. B. (2017). Six Sigma methodology advantages for small- and medium-sized enterprises: A case study in the plumbing industry in the United States. *Advances in Mechanical Engineering*, 9(10), 1687814017733248. doi:10.1177/1687814017733248
- Young, J. C., Rose, D. C., Mumby, H. S., Benitez-Capistros, F., Derrick, C. J., Finch, T., . . . Mukherjee, N. (2018). A methodological guide to using and reporting on interviews in conservation science research. *Methods in Ecology and Evolution*, 9(1), 10-19. doi:10.1111/2041-210x.12828

## APPENDIX A: SCRAIM Business Model Canvas



## APPENDIX B: SCRAIM Main Menu Blueprint



## **APPENDIX C: Research Protocol**

### **Framing and objectives**

The project in development focuses on the relationship between client companies and Strongstep, having as a background the SCRAIM platform, which is a product that was developed by Strongstep. The platform is a task management service, which includes several tools that are usually used separately. Useful for management of projects, it gives a new insight on companies' activities making staff management, time management, and management of businesses overall easier.

This product was developed by a technological start-up company as a tool that allowed process mapping, adjacent tasks, and necessary inputs to everything related. Nowadays, SCRAIM is inserted in a B2B business model, with a more prominent corporative target.

In this project, the main objectives traced were the enhancement of the relationship with the client, having as a basis the process from the first contact with the client up until the closing of a deal and final delivery of the product. The customer journey now in motion is the base to the structure of the new customer journey to be developed for the platform sale. Understanding this is the top priority in order to better assess the necessities across the processes in the company adapting each one for improvement of client relationship.

In case there are new opportunities or points in the process where new techniques for improvement have a clear impact on the final service, these must be noted and presented, according to the models defined in the literature review. Throughout the analysis of the processes, there will be used a hybrid methodology between the LEAN approach and Service Design, to have a more correct and deep understanding of the service.

Having this in mind, the overall focus is to improve the final product through alignment with the current clients' suggestions and adaptation of the approach methods. Interviews with the staff, as well as the clients that are already using this service are crucial to the development of the project since customer experience is at the core of the methodologies that will be used during this investigation.

The work stages begin with a brief analysis of the platform and its characteristics, functionalities, value constellation, value proposition, and business model. In order to understand the environment in which SCRAIM is into, benchmarking is also seen as a crucial step to be taken. Looking at the processes involving sales, all the aspects involved, including actors and current tactics and methods of the approach used by sales staff will be analyzed. The customer experience model will be eased by this step. The last part will be related to the possible improvements that may be found along this journey, and that must be briefly addressed in this topic.

### **Platform Analysis**

Platform analysis is the first step to be taken in the working stages, in order to fully understand SCRAIM and its details. To fulfill this part, it will be conducted a study of the documentation gathered (business model canvas, value proposition, and strategy for the ongoing year) and testing of the several functionalities available, in order to evaluate the

current state of the product and its adaptability to the use by consumers (corporate consume). To correctly assess every aspect related to the platform, a value constellation mapping will be performed in order to understand which entities play an important role in the service, as well as to position the values and vision of the company.

The main objective of a more profound analysis is precisely to understand if it has enough development level to be used effectively and correctly when applied in partner companies, without any issues. With this evaluation, we pretend to find crucial points where the service provided can be enhanced recurring to the previously mentioned methodologies LEAN and Service Design, allowing the platform to be developed in a more adapted way to the real needs shown by the clients. The documentation and exploration of SCRAIM will allow not only improve the overall platform but also improve sales techniques and boost the whole customer experience.

## **Sales**

Considering the second stage of work related to the sales of SCRAIM as a product, this task requires extensive analysis to better perceive the methods applied in Strongstep. Therefore, a first perspective on the actors involved in the several different actions related to the platform, considering their role, interactions, and the requirements related is imperative to understand the methods being applied currently.

In contemplation of getting better knowledge of what is being in the market, the realization of a benchmarking analysis of other solutions being presented by competitors, with similar functionalities and objectives will demonstrate how these solutions are being managed and applied compared to Strongstep.

In this working stage, one of the most important tasks is the analysis of the method of contact performed currently with clients and potential leads, to better understand how this detail will impact the final experience of the client and how it changes its modeling. It will also be a tool to better recognize possible points of improvement in the platform and the way that is being advertised.

All the tasks performed in this stage are essential to, as mentioned, understand the relationship with the client, its current experience with the service provided, and as well to enhance the platform through the hybrid methodology between LEAN and Service Design aiming for long term and continuous improvements, focusing on the efficiency of resources used.

## **Improvements**

- Cultural institutional change;
- Innovative and disruptive leadership;
- Motivated staff (must be informed of all alterations throughout the processes – affects motivation and loyalty to the company);
- Choosing an implementation strategy suitable for the company and its environment;

**APPENDIX D: External Interview Script (companies that use SCRAIM)**

| <b>Question No.</b> | <b>Question</b>                                                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 -</b>          | What is the area in which your company operates and what services do you provide?                                                     |
| <b>2 -</b>          | What is your position in (company being interviewed)                                                                                  |
| <b>3 -</b>          | What triggered the need to seek Strongstep services?                                                                                  |
| <b>4 -</b>          | What were the phases through which your company went through until finding and adjudicate the budget?                                 |
| <b>5 -</b>          | How did you find Strongstep's services?                                                                                               |
| <b>6 -</b>          | What contacts did you have throughout the process with Strongstep?                                                                    |
| <b>7 -</b>          | Summarizing all the service provided, what is your experience regarding the following topics and what you would like to see improved? |
| <b>7a.</b>          | Communication;                                                                                                                        |
| <b>7b.</b>          | Openness to problem solving;                                                                                                          |
| <b>7c.</b>          | Professionalism of the consultants;                                                                                                   |
| <b>7d.</b>          | Commercial Approach;                                                                                                                  |
| <b>8 -</b>          | Considering the SCRAIM product, what is your opinion about how it works?                                                              |
| <b>9 -</b>          | Do you have any suggestions regarding the platform and the experience you have had with it?                                           |
| <b>10 -</b>         | What were your expectations of the services you were looking for and how were they met or not met?                                    |
| <b>11 -</b>         | Would you refer Strongstep's services to your partners? Why?                                                                          |
| <b>12 -</b>         | Are there any issues that have not been addressed that you would like to mention?                                                     |

**APPENDIX E: External Interview Script (companies that do not use SCRAIM)**

| <b>Question No.</b> | <b>Question</b>                                                                                                                                                                                                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 -</b>          | What is the area in which your company operates and what services do you provide?                                                                                                                                                                                                                                         |
| <b>2 -</b>          | What is your position in (company being interviewed)?                                                                                                                                                                                                                                                                     |
| <b>3 -</b>          | What triggered the need to seek Strongstep services?                                                                                                                                                                                                                                                                      |
| <b>4 -</b>          | What were the phases through which your company went through until finding and adjudicate the budget?                                                                                                                                                                                                                     |
| <b>5 -</b>          | How did you find Strongstep's services?                                                                                                                                                                                                                                                                                   |
| <b>6 -</b>          | What contacts did you have throughout the process with Strongstep?                                                                                                                                                                                                                                                        |
| <b>7 -</b>          | Summarizing all the service provided, what is your experience regarding the following topics and what you would like to see improved?                                                                                                                                                                                     |
| <b>7a.</b>          | Communication;                                                                                                                                                                                                                                                                                                            |
| <b>7b.</b>          | Openness to problem solving;                                                                                                                                                                                                                                                                                              |
| <b>7c.</b>          | Professionalism of the consultants;                                                                                                                                                                                                                                                                                       |
| <b>7d.</b>          | Commercial Approach;                                                                                                                                                                                                                                                                                                      |
| <b>8 -</b>          | What are your company's needs regarding project management tools?                                                                                                                                                                                                                                                         |
| <b>9 -</b>          | What your company is looking for in tools in this area?                                                                                                                                                                                                                                                                   |
| <b>10 -</b>         | Do you currently use any project management tool?                                                                                                                                                                                                                                                                         |
| <b>10a.</b>         | What needs are met?                                                                                                                                                                                                                                                                                                       |
| <b>10b.</b>         | What would you try to improve in this area?                                                                                                                                                                                                                                                                               |
| <b>11 -</b>         | Considering the tool developed by Strongstep, which allows project management conciliated with Agile strategies, Kanban frameworks and risk management/impediment, what is for you the level of interest of a tool with advantages related to real-time visibility, ability to manage and organize tasks and ease of use? |
| <b>12 -</b>         | What were your expectations of the services you were looking for and how were they met or not met?                                                                                                                                                                                                                        |
| <b>13 -</b>         | Would you refer Strongstep's services to your partners? Why?                                                                                                                                                                                                                                                              |
| <b>14 -</b>         | Are there any issues that have not been addressed that you would like to mention?                                                                                                                                                                                                                                         |

**APPENDIX F: Internal Interview Script (sales team)**

| <b>Question No.</b> | <b>Question</b>                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------|
| <b>1 -</b>          | What is your position in Strongstep and adjacent tasks?                                             |
| <b>2 -</b>          | Regarding sales methods, what are the approaches used by the company?                               |
| <b>3 -</b>          | What are the main difficulties experienced in the current sales process?                            |
| <b>4 -</b>          | What is the current feedback regarding customer relations?                                          |
| <b>5 -</b>          | What are the aspects that you would like to see improved in the sales process?                      |
| <b>6 -</b>          | Regarding the SCRAIM platform and its features, which are the functionalities you find most useful? |
| <b>7 -</b>          | How do you describe the user flow in the platform?                                                  |
| <b>8 -</b>          | Are there any aspects that you think should be improved in the platform? If yes, what are they?     |
| <b>9 -</b>          | How is the process of introducing the platform to Strongstep clients carried out?                   |
| <b>10 -</b>         | What feedback have you received from customers regarding the operation of the platform?             |
| <b>11 -</b>         | What is the level of satisfaction felt through these feedbacks?                                     |
| <b>12 -</b>         | What is the strategy for the platform in the coming years, in terms of sales?                       |
| <b>13 -</b>         | Is there any topic you would like to mention that was not addressed during the interview?           |

**APPENDIX G: Internal Interview Script (development team)**

| <b>Question No.</b> | <b>Question</b>                                                                                                                 |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>1 -</b>          | What is your position in Strongstep and adjacent tasks?                                                                         |
| <b>2 -</b>          | How is the relation between teams/clients?                                                                                      |
| <b>3 -</b>          | What are the main difficulties felt in the contacts mentioned previously?                                                       |
| <b>4 -</b>          | What are the main difficulties experienced in the current development process?                                                  |
| <b>5 -</b>          | Regarding the SCRAIM platform and its features, which are the functionalities you find most useful?                             |
| <b>6 -</b>          | How do you describe the user flow in the platform?                                                                              |
| <b>7 -</b>          | Are there any aspects that you think should be improved in the platform? If yes, what are they?                                 |
| <b>8 -</b>          | How is the process of introducing the platform to Strongstep clients carried out?                                               |
| <b>9 -</b>          | Through the tickets regarding faults experienced by SCRAIM users, what are the main difficulties that are demonstrated by them? |
| <b>10 -</b>         | How is the platform transfer process to the client?                                                                             |
| <b>11 -</b>         | What is the strategy for the platform in the coming years, in terms of development?                                             |
| <b>12 -</b>         | Is there any topic you would like to mention that was not addressed during the interview?                                       |