

University of Economics, Prague

Faculty of Informatics and Statistics



APPLYING THE PRODUCT MANAGEMENT BEST PRACTICES IN AN IT START-UP

MASTER'S THESIS

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Author: Bc. Ion Capatina

Supervisor: doc. Ing. Ota Novotný, Ph.D.

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Declaration

I hereby declare that I am the sole author of the thesis entitled “Applying the Product Management best practices in an IT start-up “. I duly identified all citations. The used literature and sources are stated in the attached list of references.

Prague (Date).....

Signature

Ion Capatina

Acknowledgement

I hereby wish to express my appreciation and gratitude to the supervisor of my thesis, doc. Ing. Ota Novotný, Ph.D.

Abstract

The outcome of this thesis will be a real working product that will be able to bring value and solve a real time problem. This thesis is divided into two parts. The first part – the theoretical part will focus on defining and describing the role of a product manager and creating the set of best practices for this role. The second part – the practical part will apply them to a real start-up.

Keywords:

Product Management, Start-up, Lean Start-up, Product-Market Fit, Value Proposition, Minimum Viable Product

JEL Classification

M11, M13, M15

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1 Introduction

1.1 Motivation

We live in a modern world where technologies are changing at an unbelievable pace. With the change and development of new technologies, the demand and behavior of the users is also changing. The mobile phones became the most personal item, with people spending hours every day using their gadgets. Mobile phones had become something more than just a phone, nowadays, mobile phones are used for everything: ordering clothes and food, watching TV, socializing, etc. Products that once were perceived as physical only are now digitalized.

In order to be able to fill gaps in the market and to resolve problems that people are facing, new start-ups are being created at an incredible pace. Start-ups can be called the new trend of the 21st century. In fact, according to Get2Growth¹, there are more than 1.35 Million start-ups in the world. However, at the same time, an amount of 90%² of start ups fail due to multiple reasons, the main one being the inability to solve a real world problem and to meet the consumer's needs, in other words the inability to reach a product-market fit.

The author of the thesis strongly believes that with a set of good knowledge and best practices, product-market fit can be achieved and a successful start-up can be created. That's why this topic has been chosen. In this thesis, the author will try to demonstrate that with an extended set of best-practices it is possible to design a product that can have the potential to reach success on the market.

The main objectives of the thesis are:

- To introduce the reader to the world of product management and start ups
- To elaborate a set of best practices for startup product managers
- To apply the best practices to a real world product

1.2 Thesis Structure and Methodology

The thesis is divided into three main parts. Each part supporting one of the thesis objectives. The main aim of the first part „Product Management: An Overview” is to introduce the reader to the Product Management discipline and to the world of start-ups. Upon reading the first chapter, the reader should have a good understanding of these terminologies, as well as a good understanding about the types of product managers and start-ups. The methodology used in this part of thesis is literature research. By analyzing an extended list of literature sources, both digital and physical, the author is able to define and explain these concepts.

¹ Get2Growth: *Startup data* [online]. [cit. 2019-06-30]. Dostupné z: <https://get2growth.com/tag/startup-data/>

² *Startup Genome Report Extra on Premature Scaling* [online]. [cit. 2019-06-30]. Dostupné z: <https://get2growth.com/tag/startup-data/>

The aim of the second part „Product Management best practices” is to create a list of best practices that facilitates the whole journey from a problem hypothesis to a designed product. The aim of this list is to provide guidance to the product manager at different stages of the market research and solution design. This set of best practices should provide enough knowledge to the reader to be able to find a market gap, find a solution to that gap and design a product that will reach a product-market fit and that will be successful. The methodology used in this chapter is literature research, with the primary source used being “The Lean Product Playbook” written by Dan Olsen. As secondary sources, blog posts written by professional product managers and successful entrepreneurs are used. Lastly, the author also applies his own knowledge of discipline based on his prior experience in the role of product manager in a tech-company.

The third part is the „Practical Part”. In this chapter the best-practices that were defined in the previous part are applied to a real world problem. This part starts by finding a gap in the current market and creating a problem hypothesis. In the second chapter of this part, the author elaborates a high-level solution to this problem. In the third chapter, the author tries to reach the product-market fit, by using the recommendations that were provided in the second part of the thesis. Also, in the third chapter, a user survey validates the problem hypothesis, making the whole idea a valid business cases. The fourth chapter describes the branding, vision and mission on a company level, allowing the business to have a clear overview of the direction where it is heading. The last chapter of this part is focused on project management, organization of the team and on the revenue and costs forecasts. The methodologies used in this chapter are primary and secondary researches. The primary research is used at the beginning in order to find the underserved customer needs and to define the problem hypothesis. Secondary researches are used for validating of the problem hypothesis and business case. These results also help the author to create revenue forecasts of the business. Another secondary research is used for prioritizing and defining the set of MVP features of the product. The main outcome of this part is to create and define a working product that solves real-world needs. The validation of the business case will be done by providing revenue forecasts and demonstrating the potential profitability of the product.

1.3 Limitations

Due to the limited knowledge of software engineering of the author and due to limited financial resources, it is not possible to implement the actual product, leaving it currently at a design stage.

1.4 Thesis Hypothesis

The thesis hypothesis that the author validates in this paper is that with the help of a well-designed and well-described set product management best practices, it is possible to evolve from a problem hypothesis into a working product that has a strong value proposition and that has it's place to be on the market. The author strongly believes that the main factors that determine the success of a product are user tests, well defined action plan and a passion towards the discipline. The thesis hypothesis is confirmed by the cost and revenue forecast of the product

for a period of five years, which is described in the last chapter of the thesis and which validates the business potential.

2 Product Management: An Overview

2.1 Definition and Key Concepts of Product Management

According to Haines³, product management can be defined as “*business management at the product, product line, or product portfolio level.*” The researcher defines it as a model of organization of business activities implemented across all business functions, noting that “*This model includes strategizing, conceiving, developing, introducing, managing, and marketing products.*”

Steinhardt⁴ states that product management can be defined as “a market-focused corporate activity that uncovers potentially profitable market problems and communicates them in proper format to the company’s product developers who then specify and build solutions to those problems.” The researcher argues that product management includes the stages of product development, its launch to the market, improvement, and up to elimination. On each of these stages, it is important to maximize the effectiveness of managers’ activities, and therefore identifying possible errors and solving problems is a key prerequisite for optimizing the costs borne by a company and raising the amount of its sales.

Based on these definitions, it can be stated that the main goal of a company’s product management efforts is to ensure the best effectiveness in terms of product development and subsequent sales on all stages of product lifecycle and throughout all business functions. This aims at ensuring the most coherent business processes associated with production and sales, and at optimizing the operations with each product in particular.

LeMay⁵ notes that product management in practice can differ from product management in theory. Thus, while product management in theory aims at achieving products’ popularity among target customers, product management in practice is often about “incremental improvements on products that are facing much more fundamental changes.” This information allows understanding product management as a dynamic function, and not a static set of activities. The tasks of product management are preconditioned by the changes occurring with every product, which are preconditioned in their terms by the specificities of a company’s market in general.

³ Haines, S. (2008). *The Product Manager's Desk Reference*. New York City, NY: McGraw Hill Professional. ISBN 9780071591355. 600 p.

⁴ Steinhardt, G. (2017). *The Product Manager's Toolkit®: Methodologies, Processes, and Tasks in Technology Product Management*. Berlin: Springer. ISBN 9783319499987. 207 p.

⁵ LeMay, M. (2017). *Product Management in Practice: A Real-World Guide to the Key Connective Role of the 21st Century*. Newton, MS: O'Reilly Media, Inc. ISBN 9781491982242. 188 p.

2.2 Types of Product Managers

Steinhardt⁶ defines a product manager as “*a market expert who seeks potentially profitable market problems and describes them to product developers.*” However, Haines⁷ believes that a product manager’s functions are wider than the identification and communication of problems associated with products. Thus, according to the researcher, a product manager’s responsibility extends over all activities associated with product management on all stages of a product’s lifecycle.

According to Piercy⁸, there are three main types of product managers at companies. They are namely the following:

1. Brand coordinator. This type of manager undertakes a bureaucratic role and responsibility, but does not play any entrepreneurial role.
2. Brand champion. This type undertakes a responsibility for a brand together with a role of providing entrepreneurial recommendations.
3. Brand director. This type is responsible for both bureaucratic and entrepreneurial duties, “with complete product responsibility and reporting directly to the chief executive.”

Therefore, it can be stated that brand coordinator is the narrowest type of product managers, while brand director is the type endowed with the largest duties and responsibilities. The appointment of particular types of product managers at a company is dependent on the goals followed by such a company, the specificities of its organization structure, and its market vision.

A similar classification of product managers is also provided by Kang, Sugumaran and Park⁹ based on Herzwurm and Pietsch. However, the authors identify four types of product managers:

1. Product managers focusing on requirements management. They develop requirements applicable to products, and deal with a small amount of functions associated with product positioning.
2. Product managers dealing with product positioning. They consider a product as a whole, and therefore are engaged in both the development of requirements and the positioning of such a product.
3. Product managers involved in product definition. They plan the process of product definition and positioning, usually delegating operational functions to product managers of types 1 and 2.

⁶ Steinhardt, G. (2017). *The Product Manager's Toolkit®: Methodologies, Processes, and Tasks in Technology Product Management*. Berlin: Springer. ISBN 9783319499987. 207 p.

⁷ Haines, S. (2008). *The Product Manager's Desk Reference*. New York City, NY: McGraw Hill Professional. ISBN 9780071591355. 600 p.

⁸ Piercy, N. (2014). *Marketing Organisation (RLE Marketing)*. London: Routledge. ISBN 9781317642701. 248 p.

⁹ Kang, K. C., Sugumaran, V. and Park, S. (2009). *Applied Software Product Line Engineering*. Boca Raton, FL: CRC Press. ISBN 9781420068429. 561

4. Products responsible for business development. They deal with the strategic level of product development and ensure coherence between product development and wider corporate strategies.

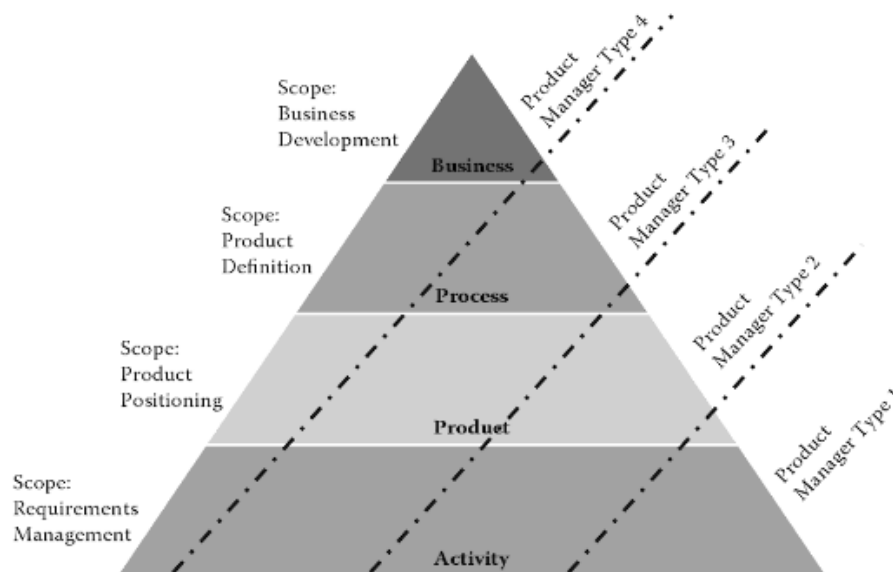


Figure 1. Types of product managers according to Herzworm and Pietsch

Source: Kang, K. C., Sugumaran, V. and Park, S. (2009). *Applied Software Product Line Engineering*. Boca Raton, FL: CRC Press. ISBN 9781420068429. 561

2.3 Product Management in Large Companies

The specificities of product management in large companies are preconditioned by the size of such enterprises and the scope of business activities they run. Thus, first of all, it should be understood that large companies operating on a market have a wide product portfolio and/or significant volumes of production. Due to this, product managers in such enterprises have to operate with many different product lines at once, which complicates the whole process.

As noted by Stark¹⁰, the complexity of large companies' operations is increased further by the fact that such corporations operate on a great number of foreign markets at once. Therefore, even the same product line can be on different lifecycle stages in different countries: while in developed states, a product can be declining, it can be on the rise in developing countries due to the existence of an economic and technological gap between them. A product manager's role in this context becomes even more complicated, as a product has to be managed simultaneously on different lifecycle stages in different countries and cultures, adapting effective cross-cultural management and achieving the company's best positions on all such segments.

Another important specificity of product managers' activities in large companies is the need to coordinate their activities with a great number of other managers. This aspect is

¹⁰ Stark, J. (2011). *Product Lifecycle Management: 21st Century Paradigm for Product Realisation*. Berlin: Springer Science & Business Media. ISBN 9780857295460. 562 p.

emphasized by Stark¹¹, who notes that any lack of effectiveness in communication between managers in multinational corporations leads to a rupture of effective systemic ties, and thus affects the quality of product management.

It should be noted that in all such activities, product managers at large companies have to maintain the required coherence between corporate-level strategies and the strategies implemented for product development on different markets: given the large number of factors from the inside and the outside environment affecting the whole process, achieving the solution of this task becomes particularly difficult.

Bilir¹² points out that “Multinational corporations are among the most innovation-intensive firms and account for the substantial majority of international transactions.” A key task of product managers working at such companies is to constantly monitor the shifting tendencies on the market and identify the trends for particular innovations and also the need for such innovations existing among customers. Without effective innovation management, large companies become even more vulnerable on their target markets compared to smaller entities, and thus lose their competitiveness.

2.4 Specificities of Product Management in Start-Ups

The specificities of product management in start-up companies are explained by the fact that such companies are newcomers to their market, and therefore they operate new products which are only introduced to target audiences, as will be shown later in this thesis.

Cabage and Zhang¹³ note that the limited number of products offered to customers is the first major distinctive factor. On the one hand, product managers in such companies have to operate a smaller number of products compared to larger companies. However, on the other hand, they always deal with products which are only launched on market, and therefore which require an effective strategy to be promoted on the market effectively and to generate sufficient sales for the company. Today, more and more startups are focusing on international markets, and therefore their product managers should be aware of the market trends persistent in such different geographic markets, similarly to the managers of large companies. Moreover, they operate in conditions of limited time, and therefore are required to achieve product popularization within brief delays.

Another important difference compared to larger companies is that start-ups operate in conditions of greater restrictions associated with the financial resources available. Therefore, start-up companies have to plan their activities taking into account these constraints, often developing their products on particular niches, where the intensity of competition tends to be smaller.

¹¹ Stark, J. (2011). *Product Lifecycle Management: 21st Century Paradigm for Product Realisation*. Berlin: Springer Science & Business Media. ISBN 9780857295460. 562 p.

¹² Bilir, L. (2014). Patent Laws, Product Life-Cycle Lengths, and Multinational Activity. *American Economic Review*, 104(7), pp.1979-2013

¹³ Cabage, N. and Zhang, S. (2013). *The Smarter Startup: A Better Approach to Online Business for Entrepreneurs*. San Francisco, CA: New Riders. ISBN 9781449370503. 452 p.

In contrast to large companies, start-ups also have more limited opportunities of developing own innovations and implementing them in practice. Nevertheless, according to Cabage and Zhang¹⁴, it is right thanks to innovations that most start-ups can succeed in their market activities and fulfill the initial aim of their creation. Therefore, product managers in start-up companies have to find an optimum balance between the resources available and the need to implement innovations which would allow promoting a product quickly on the market.

Eisenmann¹⁵ emphasizes that the organization structure of start-ups is simpler compared to large corporations, and therefore in this context it is easier for product managers of such companies, as the structure of subordination is more transparent, and the complexity of communication is significantly reduced.

Taking into account the information presented above, it is now possible to proceed to an overview of start-ups and their key specificities.

2.5 Start-Ups and Their Specificities

2.5.1 Definition of Start-Up

Friel and Vukotich¹⁶ define a start-up as “a temporary organization designed to search for a product/market fit and a business model, while in contrast, a large company is a permanent organization that has already achieved a product/market fit.” Based on this definition, it can be stated that start-ups are contrasted with large companies. However, the essence of a start-up is not limited solely to its size. A start-up is a newcomer to the market, who is in search for its business success through the implementation of an own business model.

A similar definition is also provided by Wise and Feld¹⁷, who states that a start-up is “*a temporary organization formed to search for a repeatable and scalable business model.*” The fact that a start-up is a temporary organization means that, in the long run, it either turns quickly into a successful business entity and grows in both size and market popularity or it fails and exits the market. The lifecycle of start-up companies is finite: a start-up explores the market, “*tests and validates*” a need which has remained unfulfilled. Every start-up is based on its owner’s assumptions regarding market prospects and possible outcomes. As soon as the business model becomes proven, the company loses its status of a start-up.

Another perspective is offered by Brikman¹⁸ citing the definition given by Ries: “*A startup is a human institution designed to create a new product or service under conditions of extreme uncertainty.*” Market uncertainty is one of the key factors affecting the activities of a

¹⁴ Cabage, N. and Zhang, S. (2013). *The Smarter Startup: A Better Approach to Online Business for Entrepreneurs*. San Francisco, CA: New Riders. ISBN 9781449370503. 452 p.

¹⁵ Eisenmann, T. (2013). *Managing Startups: Best Blog Posts*. Newton, MS: O'Reilly Media, Inc. ISBN 9781449370503. 452 p.

¹⁶ Friel, T. and Vukotich, G. (2018). *The Start-up PUSH: A Guide for Developers, Directors and Residents Incubators, Accelerators, and Science Parks*. IAP. ISBN 9781641133609. 155 p.

¹⁷ Wise, S. and Feld, B. (2017). *Startup Opportunities: Know When to Quit Your Day Job*. Hoboken, NJ: John Wiley & Sons. ISBN 9781119378198. 208 p.

¹⁸ Brikman, Y. (2015). *Hello, Startup: A Programmer's Guide to Building Products, Technologies, and Teams*. Newton, MS: O'Reilly Media, Inc. ISBN 9781491910054. 604 p.

start-up company and its founders. The market is changing rapidly, and start-ups aim at discovering and fulfilling customers' needs. Start-ups have to grow fast on the market and are affected by a high level of competition, especially on the part of large technological corporations. Moreover, the needs of customers tend to shift quickly. Therefore, start-ups operating on the market face high risks of failure, and thus have to show their maximum effectiveness within short delays.

Brikman¹⁹ notes further that massive growth is indispensable for a start-up. Without achieving such growth, a start-up cannot develop its activities effectively and cannot penetrate the market quickly, which is a key precondition for a start-up's business success.

2.6 Types of Start-Ups

There are different classifications of start-ups in literature, as authors do not offer a uniform approach to the identification of different types of start-ups based on particular characteristics.

According to Barraza Lopez²⁰, there are six main types of start-ups in business. Namely, those are the following:

1. Big business start-ups. These start-ups are launched by large companies to generate new revenue streams and to test new business models or to enter new markets. The main advantage of these start-ups is the availability of funds and technologies, thanks to which they are more autonomous and can achieve quicker growth.
2. Social entrepreneurship start-ups. These start-ups focus prominently on combining their search for profit with social usefulness, attempting to create wealth for the benefit of society.
3. Buyable start-ups. The main goal of such companies is to develop new technologies in order to be sold at a later point in time to an investor.
4. Scalable start-ups. As Barraza Lopez notes, "In this category fall the ones that we probably hear more, the Tech Startups. Technology companies have a huge potential to grow due to the nature that allows access to a global market."
5. Small and medium-sized start-ups. The main aim of such start-up companies is to fulfill the needs of their founders in terms of revenues, the organization of labor, and so on.
6. Lifestyle start-ups. These companies are created by people passionate for particular activities and are devoted to raising the popularity of such activities.

Barraza Lopez notes that there are other types of start-ups based on different classifications, and each such classification is inherently biased and subjective, as the ultimate aim of all start-ups is similar, and thus their activities share many aspects in common.

¹⁹ Brikman, Y. (2015). *Hello, Startup: A Programmer's Guide to Building Products, Technologies, and Teams*. Newton, MS: O'Reilly Media, Inc. ISBN 9781491910054. 604 p.

²⁰ Barraza Lopez, C. (2015). 6 types of Startups in Business. [online] LinkedIn. Available at: <https://www.linkedin.com/pulse/6-types-startups-business-carlos-barraza-lopez/> [Accessed 19 Nov. 2018].

As noted by Aamoucke²¹, start-ups can be classified into different types depending on the affiliation, which they have with industries in the context of innovation, namely start-ups in “*high-technology manufacturing industries, technologically-advanced manufacturing, technology-oriented services, and non-innovative industries.*” These types of start-ups differ in terms of the sector in which they operate and the product which they offer to target customers. In every case, such products are innovative and bring new useful parameters to customers. The activities of start-ups in high-technology manufacturing are characterized by higher growth dynamics. In addition, such start-ups are affected significantly by the availability of higher educational institutions in the localities in which they operate, while other start-ups are rather more autonomous, but their growth opportunities tend to be more limited.

2.7 Lean Start-Up Methodology

According to Asefeso²², the lean startup methodology consists in the “application of lean thinking, which at its most basic is about maximizing the value you provide to your customers while minimizing waste in your organization.” This methodology is interlinked closely with the concept of lean manufacturing and lean software development.

Ries²³ notes that there are five key principles put into the core of the lean start-up methodology. Those principles are namely the following:

1. “*Entrepreneurs are everywhere.*” This principle assumes that people can launch their start-up projects regardless of their location or their sphere of activities. Entrepreneurial spirit is available to many, and those who fulfill it can achieve effective results in terms of the development of their start-up.
2. “*Entrepreneurship is management.*” Any start-up is not only about an innovative product: it requires an effective organization of labor and all production and sales processes. Therefore, the successfulness of the management’s activities is of major importance.
3. “*Validated learning.*” Start-ups exist not only to develop products, but also to learn how sustainability in business should be achieved.
4. “*Build-Measure-Learn.*” This principle assumes that all start-ups should seek turning ideas into products, measuring the popularity, which such products achieve among target customers, and learning how they should be improved further.
5. “*Innovation accounting.*” In order to ensure proper cost management and thus effective growth, start-ups need to evaluate effectively their progress and measure all parameters of their business activities.

²¹ Aamoucke, R. (2016). *Innovative Start-Ups and the Distribution of Human Capital: The Role of Regional Knowledge*. Berlin: Springer. ISBN 9783319444628. 162 p.

²² Asefeso, A. (2012). *Lean Startup: (Key to a Better Chance of Successful Startup)*. Swindon: AA Global Sourcing Ltd. ISBN 9781291042535. 114 p.

²³ Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. London: Crown Publishing Group. ISBN 9780307887917. 336 p.

Asefeso²⁴ notes that a key concept in the lean startup methodology is minimum viable product (MVP). An MVP is a product launched on a market to collect information on customers and their consumption habits. The role of an MVP is to run pilot research and understand to which extent the needs of customers are satisfied. Split testing can be run by companies with the aim of testing which of two given products. It contributes to higher customer satisfaction and serves better to fulfill the start-up's aim.

As can be seen from the data presented above, the main scope of the lean startup methodology is to guarantee the most effective use of corporate resources and minimize waste. The lean start-up methodology is particularly important taking into account the fact that start-ups operate in conditions of limited time available and have to operate their resources in the most efficient way. Therefore, the lean methodology contributes to their sparing and allows directing their resources in a targeted manner to the most important activities.

2.8 Current Trends in the Development of Start-Ups

According to Uzialko²⁵, a common trend in the activities of start-ups today is a growing use of artificial intelligence and machine learning as core business technologies. One of the technological achievements widely used as of today is blockchain. Originated in the field of cryptocurrencies on the financial market, this technology is currently used widely in different business sectors and public management to ensure security and minimize the risks of perpetrators' attacks. Start-ups' investment in information security tends to grow. Integrated solutions are used to ensure the most effective implementation of technological infrastructure in start-ups operating in the sector of information technology.

Considering financial aspects, it should be noted based on Lunia²⁶ that investors' interest in prospective start-ups tends to keep growing, and therefore start-up companies have greater opportunities to raise the required financing for funding their projects. The speed of investment rounds is important in order to ensure a quick fulfilment of start-ups' goals. The use of online payment systems and cryptocurrencies in the performance of such investment rounds will be likely to keep growing in years to come.

Lunia²⁷ notes further that brand loyalty will be one of the main focus of start-ups in years to come. This is one of the key factors contributing to a quicker transition of companies from start-ups to established businesses. Customers value loyalty-based relationships, and

²⁴ Asefeso, A. (2012). *Lean Startup: (Key to a Better Chance of Successful Startup)*. Swindon: AA Global Sourcing Ltd. ISBN 9781291042535. 114 p.

²⁵ Uzialko, A. C. (2018). 19 Small Business Trends and Predictions for 2018. [online] Business News Daily. Available at: <https://www.businessnewsdaily.com/7605-business-trend-predictions.html> [Accessed 19 Nov. 2018].

²⁶ LUNIA, Anand. *Twenty Trends that will define Indian startup ecosystem in 2018* [online]. [cit. 2019-06-30]. Dostupné z: <https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/twenty-trends-that-will-define-indian-startup-ecosystem-in-2018/articleshow/62112977.cms>

²⁷ LUNIA, Anand. *Twenty Trends that will define Indian startup ecosystem in 2018* [online]. [cit. 2019-06-30]. Dostupné z: <https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/twenty-trends-that-will-define-indian-startup-ecosystem-in-2018/articleshow/62112977.cms>

therefore start-ups should target them with favorable offers of long-term partnership. Also, Lunia believes that new sectors will be discovered more actively by start-up entrepreneurs: *“Agri-tech, as an example, will be a sought-after sector, as startups follow the money and ‘follow the data’.”*

In terms of start-ups’ marketing, a prominent tendency the personalization of their marketing activities. Uzialko²⁸ notes that in order to succeed in terms of their market performance, start-ups aim at approaching their customers more closely, increasing the value such customers receive from the company. In these terms, the use of online marketing is becoming gradually more and more important. Start-up companies lead more intensive activities in online social networks, where they communicate with the customer audiences, collect their feedback, and even seek investors. The use of artificial intelligence in marketing is becoming more widespread as well: AI helps companies find new customers, and at the same time contributes to a more precise identification of what each individual customer needs and how these needs can be aligned with corporate policies and the resources available to the start-up. Cross-channel strategic marketing is gaining importance among smaller start-ups, as this approach allows achieving a greater cumulative effect, which is a key precondition for effective cost management in marketing. Finally, an important trend in terms of start-ups’ marketing activities is a growing level of competitiveness of social advertising run in online social networks.

Therefore, based on this overview, it can be stated that start-ups tend to become more technological and even more oriented on a quick achievement of market results, which emphasizes further the specificities of start-up companies outlined earlier.

²⁸ Uzialko, A. C. (2018). 19 Small Business Trends and Predictions for 2018. [online] Business News Daily. Available at: <https://www.businessnewsdaily.com/7605-business-trend-predictions.html> [Accessed 19 Nov. 2018].

3 Product Management Best Practices in a Startup

3.1 Introduction

As it was described in the previous chapters, the main goal of a start-up is to achieve the product-market fit. This chapter defines a set of best practices of the product managers in startup companies, who for this specific set of best practices would also be the founders of the company, thus dealing also with planning and costs. The main outcome of this chapter should be a set of best practices and tools that should help the product manager to develop a problem hypothesis into a designed product.

The main methodology used in this chapter is literature research. The primary source of research is the book “The Lean Product Playbook: How to innovate with minimum viable products and rapid customer feedback” written by Dan Olsen. As secondary sources, different blog posts and other books were used. Beside the literature research, the author, as a person who has experience in working in a product manager position, also utilizes his own experience and knowledge to solidify the results of the literature research and to provide different visualization tools that would facilitate the solution design process.

This chapter is divided into 4 main sub-chapters; the first sub-chapter describes the problem definition and how to find a high-level solution to a problem, by using creative methods. The second sub-chapter describes how to reach the product market fit by going through all the layers of the product-market fit. The third sub-chapter talks about project management tools and frameworks, such as the SCRUM framework. The last chapter provides recommendation of different software that helps to facilitate PM activities.

3.2 Defining the Problem

It is widely known that most of the startups fail. Statistics report the failure rate as high as 90%, which is a huge number. Many of the startup founders write a post-mortem essay, which explains the main reasons why his business failed. CB Insights parsed 101 post-mortem essays that were written by entrepreneurs and came up with a statistic that shows that 42% of these companies failed because there was no real market need for their product.²⁹ A trap that many products fall into is the fact that no one actually needs them; there is an abounding number of great products that failed just because they were not solving any real-world problem. Having in mind the above mentioned, a good product manager or entrepreneur should always start his journey by defining the problem that they are trying to solve. It is crucial to know from the beginning, what problem will your product solve and if that problem is actual, the product manager should really feel the pains and necessity of his potential customers.

More than that, it is not enough just to identify a problem that a group of people is facing, truly identifying a problem means having a deep look at all the symptoms, the consumer,

²⁹ GRIFFITH. Why startups fail, according to their founders [online]. [cit. 2019-06-30]. Dostupné z: <http://fortune.com/2014/09/25/why-startups-fail-according-to-their-founders/>

the impact, the other options, the occasions and the connection between all these, while dodging the “solution bias” (“The issue is that the consumer doesn’t use my product”). There are many tools and frameworks created for making this step easier and one of the tools that is useful for defining problems in the right way is “The problem statement canvas”. Which will be described in the Target customer layer of the product-market fit pyramid.

As a starting point in defining the problem, the PM should analyze the primary market researches available, and try to find a gap in the market. After a gap is found in the market, the PM can create the problem hypothesis, which at this point is not yet demonstrated or supported by real-world data.

3.3 High Level Solution

The next step after defining the problem hypothesis is to think about a high-level solution for that problem. It might be quite challenging to find an original solution that was not yet used, nobody thought about it, and this process requires a lot of creativity. Finding an original solution for a common problem is quite an individual thing and different people can have their own approach on that.

Prof. Shlomo Maital, who is the Academic Director of the Technion Institute of Management (TIM) has come up with a solution that can help individuals to use their creativity and create viable ideas for new product. That method is called “Zoom in, zoom out, zoom in (ZiZoZi)”.

The first step of this method – the “**Zoom in**” is to look at the problem from a very detailed perspective, capture all the details and all the specifics of the problem. This exercise helps product managers to understand the problem in details and to understand what the pain points are. The next step is the “**Zoom out**”, at this step it is essential to think and capture all the possible solutions to the problem, important factor is to have all the ideas captured – even the craziest ones. The last step, called the “**Zoom in**” – is to get back to reality and eliminate all the unfeasible solutions, leaving only the ones that are real. After that, the product manager is left with one or more feasible solutions that can be considered and analyzed with the help of the product-market fit framework in order to choose the one that is the most suitable and feasible.³⁰

3.4 Product Market Fit

Product-Market fit is the degree at which customers needs on a certain market are satisfied by a certain product, in other words product-market fit means “being in a good market with a product that can satisfy that market”³¹. In order to achieve the product-market fit, an actionable framework called “the Product-Market fit Pyramid” was created by Dan Olsen. This pyramid reminds of the Maslow’s hierarchy pyramid and divides the 5 main components of product in

³⁰ Startup Entrepreneurship Specialization [online]. [cit. 2019-06-30]. Dostupné z: <https://www.coursera.org/specializations/startup-entrepreneurship>

³¹ OLSEN, Dan. The lean product playbook: how to innovate with minimum viable products and rapid customer feedback. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

different layers. The pyramid can be divided into two main components : the problem space and the solution space. These two should be interpreted separately.

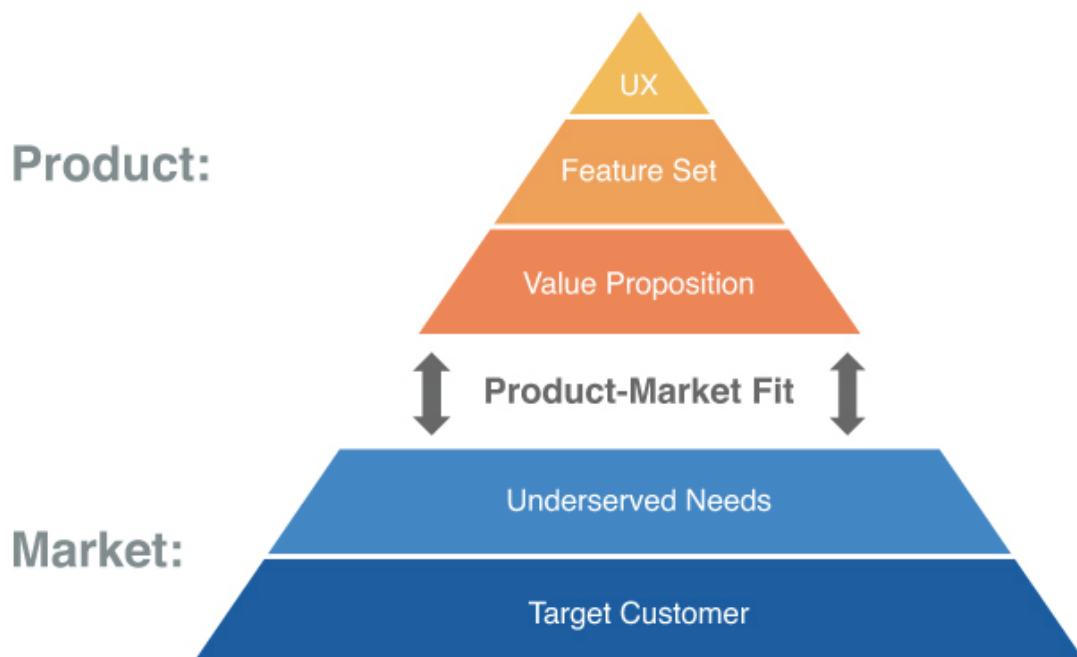


Figure 2: Product-Market fit pyramid Source: OLSEN, Dan. *The lean product playbook: how to innovate with minimum viable products and rapid customer feedback*. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

The problem space is what defines the market, this part doesn't contain any solution or designs. The problem space is where all the customer desires are held and should be used as a starting point for any product. However, it is quite challenging to understand people's needs and problems, that is where the solution space comes into hand. The solution space is the product that a company has, anything that people can interact with – designs, wireframes, prototypes, actual products. By interviewing the customers after they interact with a solution, one can identify the hidden pain points. This technique is called “contextual inquiry”.

Dan Olsen states in “The lean product playbook: how to innovate with minimum viable products and rapid customer feedback” that customers are much more comfortable in giving feedback to the solution space. Showing the customers a product or a prototype can help a product manager to gather information about what they like and they do not, also the customers can compare the product to other alternatives on the market and communicate about the pros and cons of a specific solution. The responses that are gathered while discussing the solution space can help the product manager to narrow and improve the problem space hypotheses. That's why the best problem space understanding usually comes from solution space feedback and testing.³²

The next sub-chapters will describe each layer of the product-market fit pyramid, and will provide action points and recommendations for them.

³² OLSEN, Dan. *The lean product playbook: how to innovate with minimum viable products and rapid customer feedback*. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

3.4.1 Target Customer and Underserved Needs

The first step of the Lean Product Process is to define the target customer and the underserved needs, which represents the lowest layers of the Product-Market fit pyramid, the Market part. The aim and goal of this step is to understand the behavior and needs of the target customer. For understanding that, and confirming the problem hypothesis that was already created before, user researches should be conducted. The user research can be in the form of questionnaires, and based on the results of the research, the PM can validate his problem hypothesis, validating also the high-level solution. Upon validating the problem hypothesis, two main artefacts for the product development can be created, which would help the PM and the team to have a better overview and understanding of the customer behavior, needs, habits and pain points:

- Problem statement Canvas which was described previously
- Personas

Problem statement canvas

The “Problem statement canvas” is a tool created by Marius Ursache, an entrepreneur, designer and former doctor who has founded four companies and an NGO and who frequently speaks and mentors at MIT, Singularity University, Ars Electronica and other universities around the world. This tool should facilitate the product managers to have a better insight on the complexity of the problem, without even thinking about the solution³³. The problem statement canvas template can be seen in Figure 4. In this chapter the author will explain each component of this canvas, this should provide a good understanding on how to complete it.

³³ URSACHE, Marius. The Problem Statement Canvas for Startups and Innovation Teams [online]. [cit. 2019-06-30]. Dostupné z: <https://www.detoolbox.com/articles/problem-statement-canvas/>

THE PROBLEM STATEMENT CANVAS

STARTUP NAME

DATE

VERSION

CONTEXT When does the problem occur?	PROBLEM What is the root cause of the problem?	ALTERNATIVES What do customers do now to fix the problem?
CUSTOMERS Who has the problem most often?	EMOTIONAL IMPACT How does the customer feel? QUANTIFIABLE IMPACT What is the measurable impact (include units)?	ALTERNATIVE SHORTCOMINGS What are the disadvantages of the alternatives?

Figure 3: Problem statement canvas Source: Metabeta: Problem statement canvas [online]. [cit. 2019-06-30]. Dostupné z: <https://www.metabeta.com/articles/process/problem-statement-canvas/>

Context

When does the problem occur?

Problems are usually triggered by something and have a moment when they are in their most acute stage and the customers have to suffer from it the most. Defining the context of the problem should help understanding what is that window of time when the customers will need to use the proposed solution. This will give the PM a better insight and understanding of the customer habits, and will help define the product in order to be actually useful and on-spot.

Problem

What is the root cause of the problem?

In order to build the right product that would fit the customer's needs, it is essential not only to understand the problem, but to define the roots of the problem. In order to be able to find the root cause of a problem, a technique called "Root cause analysis" or "The five whys" can be used.

It is a simple method that helps the product managers understand the real needs of a customer. Basically the product manager should find the causes of the problem by asking "Why?" and

then consecutively asking four more times “Why?” to all the answers that are provided. The goal of this method is not to ask horizontal questions, but to go for depth.³⁴

Customer

Who has the problem most often?

One of the mistakes that many product managers do is not focusing on the right customer. It is essential to focus on the small portion of people for whom that problem is a real pain. As a start-up founder one should be able to feel the customer and understand his thoughts, needs and routine, the PM should develop empathy towards the customer. This can be achieved by answering concrete questions such as: Who are your customers? Where do they live? What is their income? What does a regular day from their life look like? What do they like/dislike? Etc. One should focus on a smaller group of people, that's why it is essential to define the customers that will be the ones that will gain the most value out of the product.

Another good exercise that can help defining and understanding your potential audience is by defining Personas, which will be explained in the further chapters of this thesis.

Emotional Impact

How does the customer feel?

It is not enough to perceive a problem as an incident. It should rather be perceived as an experience, something that has an impact on the emotional state of a person. In this part of the canvas the product manager should define what are the emotional feelings of the customer when he faces the problem. Is he frustrated, sad or indifferent? By understanding the emotional feelings of the customer the PM should find out how to trigger him and influence his decision.

Quantifiable impact

What is the measurable impact?

In order to be able to elaborate a pricing strategy for the product, the entrepreneur should understand what is the quantifiable impact of the issue on the customers. It should be expressed in a currency which could be anything ranging from Health and ending with money, the most important is that this currency should be clearly measurable.

Alternative solution

What do customers do to fix the problem?

If there is a problem, then most probably there is already a solution that solves or partially solves that problem. It is essential to define what are the already-existing solutions in order to then analyze them and come-up with a better one.

³⁴ DesignKit: The Five Whys [online]. [cit. 2019-06-30]. Dostupné z: <http://www.designkit.org/methods/66>

Alternative solution disadvantages

What are the disadvantages of the alternatives?

The goal of a product manager is not to invent a solution to a problem, the goal is to invent a solution that is better than all the alternatives that currently exists. Taking for example Uber or Airbnb, these applications have not invented anything, but what they did is that they completely changed the way that the customer approaches the problem and gets the job done. After identifying the disadvantages of the currently existing alternatives, one can define the unfair advantage of his possible solution.

Personas

At this point a clear understanding of the targeted customer and their underserved needs is created, allowing the PM to have a deeper look into them. In order to personalize all the data gathered in the problem statement canvas, personas can be created. The persona is an artifact used for describing the target customer. It describes precisely the consumer behavior and needs. A persona is a fictive, personalized archetype of an actual user.³⁵ The main purpose of this tool is to help the Product Manager and the UX team in making the correct decision during the product design phase and is used during the whole product lifecycle as a reference point for a better understanding of the user. It is recommended to have several personas in order to capture different types of consumers.

In order to create a persona there is a need of information from researches conducted, personas should provide the information about all the attributes of the target customers including the demographic, behavioral and psychographic attributes. Personas can usually contain, but are not limited to the following information:

- Name
- Picture
- Quote that supports the main frustration
- Job title
- Demographics
- Needs/goals
- Motivations and attitudes
- Tasks and behaviors
- Pain points with currently available solution
- Level of expertise/knowledge
- Product usage context³⁶

³⁵ OLSEN, Dan. The lean product playbook: how to innovate with minimum viable products and rapid customer feedback. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

³⁶ OLSEN, Dan. The lean product playbook: how to innovate with minimum viable products and rapid customer feedback. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

3.4.2 Value Proposition

Once the Market part of the product-market fit has been defined, the PM can start defining the product based on the customer underserved needs and behaviors. The further step in the Product Market fit pyramid framework is to define the value proposition of the product. At this stage, detailed knowledge about the customers and market needs is already assimilated and making the product definition possible.

The lowest layer of the product fit, and the highest layer of the problem space is the value proposition. A value proposition is the main innovation of the product, the driver of the sales and the main reason why the consumers should use the product. The value proposition should be based on research results and should describe what value does the product bring and how it helps solving the problems of the consumers. The recommended set of tools to be used in order to define the value proposition is the value proposition canvas and the business model canvas.

Value proposition canvas

The value proposition canvas is a visual representation of the relation between the customer segments and the product that is being designed. It was created initially by Dr. Alexander Osterwalder as a framework in order to validate the connection between the product and market needs.³⁷ The value proposition canvas template is represented below in Figure 4.

³⁷ B2B international: What is the Value proposition canvas [online]. [cit. 2019-06-30]. Dostupné z: <https://www.b2binternational.com/research/methods/faq/what-is-the-value-proposition-canvas/>

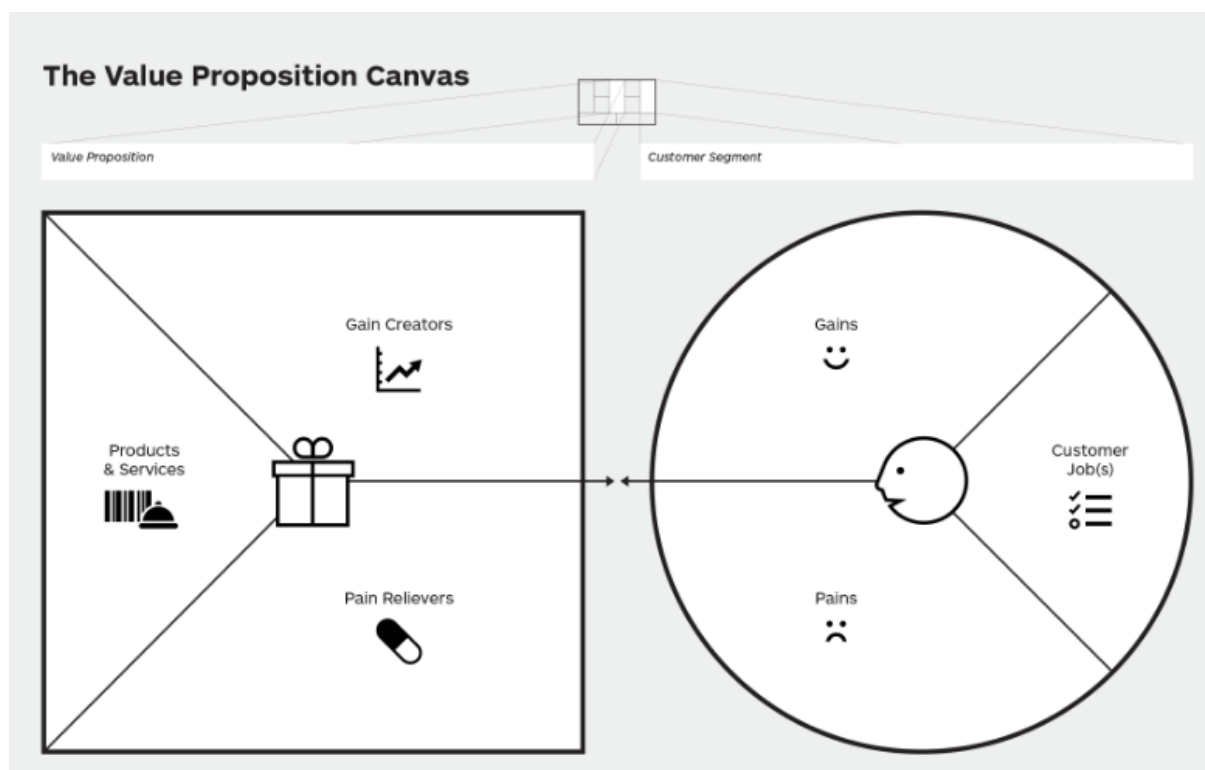


Figure 4: Value proposition canvas Source: Strategyzer: Value proposition canvas [online]. [cit. 2019-06-30]. Dostupné z: <https://www.strategyzer.com/canvas/value-proposition-canvas>

The right side represents the customer segments. The gains can be defined as the profit that the customer currently does not receive but is needed, which is also the main reason why the consumers would use the product. The pains are the current challenges and emotions that the customer experiences while completing the customer job. The Customer job should contain all the tasks that the consumer is currently performing in order to satisfy their wishes and solve their problem.

The left side of the value proposition canvas represents the value proposition of the product. The gain creators describe how the customer gains are supported by the product and how the value is being added to the consumer. The pain relievers describe how the product mitigates the pain that the customer faces. The product & services part of the canvas represents what exactly creates the gains and relieves the pains and it should contain a description of the product.³⁸

Business model canvas

Once the value proposition has been defined and understood, the PM can proceed to the creation of the Business Model Canvas. BMC, that is represented in Figure 5, is a one page template

³⁸ B2B international: What is the Value proposition canvas [online]. [cit. 2019-06-30]. Dostupné z: <https://www.b2binternational.com/research/methods/faq/what-is-the-value-proposition-canvas/>

that facilitates the process of defining the business model and it describes all the crucial aspects of the business.

BMI • Business model canvas

● Key partners Who are your most important partners? Which key resources do you acquire from partners? Which key activities do your partners perform?	● Key activities What are the activities you perform every day to create & deliver your value proposition?	● Value propositions What is the value you deliver to your customer? Which of your customer's problems are you helping to solve? What is the customer need that your value proposition addresses? What is your promise to your customers? What are the products and services you create for your customer?	● Customer relationships What relationship does each customer segment expect you to establish and maintain?	● Customer segments For whom are you creating value? What are the customer segments that either pay, receive or decide on your value proposition?
	● Key resources What are the resources you need to create & deliver your value proposition?		● Channels How does your value proposition reach your customer? Where can your customer buy or use your products or services?	
● Cost structure What are the important costs you make to create & deliver your value proposition?			● Revenue streams How do customers reward you for the value you provide to them? What are the different revenue models?	

Brought to you by Business Models Inc. www.strategyzer.com

Figure 5: Business model canvas Source: To add Source <https://www.businessmodelsinc.com/about-bmi/tools/business-model-canvas/>

Key Partners

This section should contain the information about all the key partners and suppliers of the company as well as define the reason that drives these partnerships.

Key Activities

The key activities section covers the activities that are made by the consumers in order to obtain the offered value proposition.

Value proposition

The value proposition should be a clear statement that will describe what are the benefits that are offered to the customer. This statement should describe the key feature and the main benefits of the product against it's competition.³⁹

³⁹ Unbounce: Unique value proposition [online]. [cit. 2019-06-30]. Dostupné z: <https://unbounce.com/conversion-glossary/definition/unique-value-proposition/>

The Value proposition should contain the following:

- An explanation on how the product manages to answer to customer needs or how the product improves their life
- Information about the provided advantage, which should also have a quantified value
- Information on why the product should be chosen in regards to the other alternatives available on the market

The value proposition is made for the customer, that is why it should be easily understandable and written in a plain simple language. It should be visible everywhere and it should be the main weapon of any product. In order for a value proposition to be considered good it should have the following characteristics:

- Easy understandable, potential customers should be able to read and understand it in about 5 seconds
- States the concrete benefits individuals will receive from purchasing or using the product
- States what are the unique features of a product and why it is better than the other available alternatives
- Doesn't contain superlatives and business jargon⁴⁰

Customer relationship

The customer relationship describes what relationship between the business and the customer is created and how it is supported. The relationship established with the customers should not only support the sales and acquisition of new customers, but also the retention of the existing ones.⁴¹

Customer Segments

This section should contain the customer segments that resulted from the customer research conducted during the definition of the Market fit of the product.

Key resources

The key resources are the resources needed in order to deliver the value proposition to the customer; these can be both internal resources such as personnel and external ones such as third party services.

⁴⁰ CXL: *Useful Value Proposition Examples (and How to Create a Good One)* [online]. [cit. 2019-06-30]. Dostupné z: <https://conversionxl.com/blog/value-proposition-examples-how-to-create/>

⁴¹ Strategyzer: *How do I use the Customer Relationships building block of the Business Model Canvas?* [online]. [cit. 2019-06-30]. Dostupné z: <https://strategyzer.uservoice.com/knowledgebase/articles/1194373-how-do-i-use-the-customer-relationships-building-b>

Distribution Channel

This section should answer to the question on “How does the product get delivered to the end customer?”. There are three main types of distribution channels:

- The first type is when the producer delivers the goods to the wholesaler, which at its turn resells it to the retailer which sells it to the end customers. The cons of this distribution channel type is that the price that the producer receives and the price that the end-customer differs, additional fees have to be paid to the wholesalers and resellers.
- The second type eliminates one-step, the wholesaler, reducing the fees that have to be paid by the producer.
- The third and last type is a direct-to-consumer model, where the producer delivers the product directly to the end-user. This is the most straightforward distribution channel, cutting out all the additional reselling fees.⁴²

Cost structure

This block contains all the costs that the business will incur. It should contain both the fixed and variable costs. It is essential to break down all the costs in order to be able to calculate the expected revenue and the pricing model that the company will set. There are two types of business models: Cost-driven and Values-driven. Cost-driven companies are the companies whose business models are focused on reducing costs, and trying to offer the best value proposition at the lowest possible costs. Values-driven companies are the ones that focus completely on the value that they are providing to their audience. These companies usually neglect the costs and believe in the idea that customers are willing to pay almost any price for a set level of services or products. Usually the companies that are offering luxury products and services are values-driven.⁴³

Revenue streams

The last but not least block of the lean canvas is the revenue stream. This block shows what is the source of revenue of the organization, or in other words, how will the company earn its money. The most commonly used pricing models for mobile applications are the following:

- **Paid download** – The simplest pricing model, users must pay once before downloading the application, and then they are free to use it. While this may be a simple and easy to implement pricing strategy, it is not the most effective. Users cannot get the feeling of the application and cannot test it before buying, this can hold a significant amount of people off from buying.

⁴² Investopedia: Distribution Channel [online]. [cit. 2019-06-30]. Dostupné z: <https://www.investopedia.com/terms/d/distribution-channel.asp>

⁴³ <https://www.cleverism.com/cost-structure-block-in-business-model-canvas/>

- **Free** – One of the most effective models for attracting a large amount of users. Users can download and use the app fully without paying anything. This strategy works the best when the company’s goal is to grow the user-base. However, even with the “Free” pricing model a company can still earn money with the help of In-app advertisements. The logic behind this is simple, the company rents “space” in the application where other companies can insert their commercial materials. With the growth of the user-base raises the interest of advertisers, which are more eager to pay for the rent of space in the application.
- **Freemium** – The application is free to download, however there are additional features available in the app that can be purchased.
- **Subscription** – Users pay a monthly or annual fee for using the application. This pricing model has become more popular in the last years with applications such as Spotify, Netflix, Apple music coming to the market. A subscription model is usually felt as a softer approach than other models, because the users have the feeling that they pay only for the time they use. This model also brings a stable monthly income to the company.
- **Service fee** – The application is free to register and use. However, when the users make a transaction in the application they are required to pay a fee. This model has become quite popular because the customers have the feeling that is free and that they pay a fee only when they need the service. The most popular applications that use this pricing model are Airbnb, Uber, Amazon, etc. ⁴⁴

3.4.3 MVP Feature Set

The next layer of the product section in the product-market fit pyramid is the feature set. Once the value proposition of the product is clearly set and understood, the next step is to decide on the feature set that will be integrated in the MVP (Minimum Viable Product). The Minimum Viable Product is a product with the minimum set of features that provides value to the customers and solves their problem. It is often used for having the product on the market as fast as possible and receive user feedback. An MVP should be a product that is: Delightful, Usable, Reliable and Functional.

In order to define the feature set of an MVP it is recommended to use the brainstorming technique and come with features for each benefit that the product should provide. Once the brainstorming is done and the features that will be included in the MVP are clear, it is necessary to document. A good way to document the features of an IT product is by creating user stories.⁴⁵ User stories are usually used in Agile development, and are considered to be a great way to document certain user features from the user’s perspective by using a non-technical language. A user story is a short description of the value that a particular feature brings, including who is the one who benefits of that and why does he need that. User-stories usually follow the following template:

⁴⁴ Medium: *Everything There Is To Know About Pricing Strategies For Your Mobile App* [online]. [cit. 2019-06-30]. Dostupné z: <https://medium.com/swlh/everything-there-is-to-know-about-pricing-strategies-for-your-mobile-app-6b2d7dc3d6cb>

⁴⁵ OLSEN, Dan. *The lean product playbook: how to innovate with minimum viable products and rapid customer feedback*. Hoboken: Wiley, 2015. ISBN 978-111-8960-875.

As a [type of user]

I want to [do something]

So that I can [desired benefit]

A set of guidelines for writing good stories was created by Bill Wake, he uses the acronym INVEST in defining them⁴⁶:

- **Independent:** A good user story should not be dependent on other stories. Stories should be written in such a way that they are implementable in any sequence.
- **Negotiable:** A good user story should not contain the solution and is not describing the “How” part. The details and technical tasks for a specific user story should be open for debates.
- **Valuable:** If a user story doesn’t bring any value that means that this feature is not needed and can be omitted. That’s why every user story should add value to the customer.
- **Estimable:** The scope of a story should be estimable, of course the estimations are not always 100% precise, but it should be clear from the beginning the complexity of the work.
- **Small:** Stories should have a smaller scope, the smaller is the story – the easier is to estimate it. Bigger stories should be divided into smaller ones.
- **Testable:** Stories should have clearly stated how this feature can be tested when it’s done. Usually the information about testing is covered by acceptance criteria, which describe the expected behavior of the feature.

3.4.4 UX

The top layer of the pyramid is the user experience, which brings the product features to the end customer. According to Don Norman and Jakob Nielsen: “User experience encompasses all aspects of the end-user’s interaction with the company, its services, and its products”⁴⁷. The user experience has a crucial role for a product. Even if good decisions were made in the previous four layers, the product-market fit cannot be achieved without a good UX. In order to create a pleasant user experience, the PM should start by creating flow diagrams and wireframes.

Flow diagrams

The flow diagram, also called flowchart, is a primary design artifact that describes all the steps that a user takes in order to complete a key job. There are two main types of components in flow diagrams:

- **Actions** - which are represented by rectangles.

⁴⁶ *Agile Alliance: INVEST* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.agilealliance.org/glossary/invest/>

⁴⁷ NORMAN, Don and Jakob NIELSEN. *NN Group: The definition of user experience* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.nngroup.com/articles/definition-user-experience/>

- **Decision points** – represented by rhombs. Decision points can be both on the product side or user side.

The main purpose of the flow diagram is for every individual in the team, especially the engineers, to understand the user journey, in order to be on the same page when delivering the product.

Wireframes

Once the flow diagrams are created, the PM can proceed to the creation of wireframes, which are a representation of the application on a structural level. The main aim of the wireframe is to prepare a visual representation of the product before going into the development stage in order to be able to present it to the wider team and do validation tests with the users⁴⁸

3.5 Vision and Mission statement

At this point of product definition, a clear understanding of the product is created. The next step is to define the company as a whole, for this purpose the Vision and Mission statements can be used. According to Kathryn Taylor, CEO of Untold Content, “A company vision statement reveals, at the highest levels, what an organization most hopes to be and achieve in the long term”⁴⁹ – In other words, the vision statement is the articulation of the hopes and goals of a company, is where the company wants to be in the future and what is the benefit that the company will bring to the society. The vision statement should reflect the core values and ideology of a business.

An article from Projectmanagement.com, written by Stephanie Ray who is the VP of Content, defines the best practices for creating a vision statement as following:⁵⁰

- Be concise: A vision statement should not be a long text with long statements. It should be short, should encapsulate the essentials and should be easy to read and remember.
- Be clear: This goes hands-to-hands with the first point, the vision statement should be very clear, it should focus on one major primary goal. While having just one clearly defined goal it increases the probability that this goal will be achieved
- Make it future oriented: The vision statement should not reflect what the business has achieved or is doing now, it should rather reflect a point in the future where the company wants to be.
- Be stable: A vision statement should be a goal that will not be affected by any internal or external changes such as technology development, changes in the market, changes of the internal staff, etc.

⁴⁸ *Experience UX: What is wireframing* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.experienceux.co.uk/faqs/what-is-wireframing/>

⁴⁹ *Business News Daily: What is a vision statement* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.businessnewsdaily.com/3882-vision-statement.html>

⁵⁰ *Project Manager: A Guide to Writing the Perfect Vision Statement* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.projectmanager.com/blog/guide-writing-perfect-vision-statement-examples>

- Be challenging: While being a realistic goal, the vision statement should also be ambitious. It should be a hardly achievable goal that in the end will have a high impact on everyone's lives.
- Be abstract: While being achievable and clear, a vision statement should still be enough abstract to capture all the interests and vital goals of a company.
- Be inspiring: The vision statement should be a statement that will inspire people, both from the company (internal employers) and from the outside world (customers).

The mission statement, that comes hand-in-hand with the vision statement, defines what drives the company. It is usually a set of actions and goals that the company does in order to reach their vision, in other words it identifies the purpose of a company. The mission statement should not be abstract and should answer to the following questions:

- What does a company do?
- How does the company do it?
- Why does it do it?⁵¹

The main purpose of the mission and vision statements are the followings:⁵²

- Support management in taking strategically decisions
- Motivate the team to work better by having common goals and values
- Support employees in the decision-making process
- Define the standards of ethical behavior in the company
- Create better and closer relationship with the customers and partners
- Serves as great public relations tool when building the business reputation

3.6 Project Management

At this stage, there is clear understanding of the What and Why question of the product, however the “How?” question is not answered yet. This chapter describes the best methods of building a product from a project management and organizational perspective.

3.6.1 Agile Software development

Before Agile software development was widely adopted, most software-development companies were using the “waterfall” development method, which is proceeding through a series of steps. The core principle of this method is to not proceed to the next step until the previous step is completely done. That means that no code writing would start until all the product requirements are gathered and all the designs are completed. The main downsides of this methodology is that once coding has started, it is impossible to change the requirements.

⁵¹ *Small Business: How to Write a Mission Statement & Mission Statement Examples* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.thebalancesmb.com/how-to-write-a-mission-statement-2948001>

⁵² *Bain and Company: Mission and Vision Statements* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.bain.com/insights/management-tools-mission-and-vision-statements/>

Due to the constant evolution of technologies and fast-changing demands of the customer this methodology has become quite inefficient, because the companies that use the waterfall approach cannot respond and adapt quickly to market requests.

In order to be able to respond to customer and market requests, and keep the product always up-to-date, most of the IT software development companies (especially start-ups) have adopted the Agile software development methodology. In contrast to the waterfall approach, the agile approach relies on breaking the product down into smaller pieces and go through short cycles of product development. The agile core principles were described in the Agile Manifesto that was written in 2001. It encourages continuous and fast delivery of working software while focusing on bringing value to the customer. In other words, the main principle of Agile methodology is to release fast in order to be able to gather customer feedback as early as possible and to adjust the product according to the needs of the market.⁵³

3.6.2 Scrum

One of the most popular agile frameworks is SCRUM. The core principle of SCRUM is the work in short iterations, called sprints. Sprints are usually two-weeks long. The outcome of each sprint should, ideally be, a set of features that can be released and presented to the stakeholders. There are three main roles in a SCRUM team:

- **Product Owner** who is responsible of the product backlog. The product owner usually writes the user stories and is responsible of prioritizing the user stories. The product owner role is usually covered by a product manager. In startups the product owner role is usually covered by one of the founders.
- **Development team member**, which can do one of the three important team roles of the SCRUM framework: development, UX design and quality assurance. The UX designer usually will create designs for the user stories, the development team will usually implement those stories (write the code) and the quality assurance will test them and make sure that the stories are completed and working as intended. Quality assurance members are usually the ones that close the stories when done.
- **Scrum Master** who is responsible to help the team with Scrum process and helps the team to improve the productivity. In smaller companies, however, this role is usually neglected and covered by either team leads of the development team or the product owner.

As any other process, the Scrum framework has its routine. Each sprint starts with a sprint-planning meeting where the team decides which features from the backlog will be picked in the next sprint. Also at the sprint, planning the team usually sizes the features that will go into next sprint. For sizing it is common to use the Fibonacci numbers (1,2,3,5,8,13,...), this is done to make the sizing easier, as there is a bigger gap between 8 and 13 than between 8 and 9. Once a sprint is started, standup meetings are held every day. These meetings usually don't last longer than 15 minutes. Their main purpose is for the team to share their updates and inform about

⁵³ *Agile Manifesto* [online]. [cit. 2019-06-30]. Dostupné z: <https://agilemanifesto.org/>

any issues or blockers that occurred during the last days. Usually the scrum master is responsible for running the standups. At the end of the sprint the team usually delivers a shippable product and present a demo to the stakeholders at the sprint review meeting. Once the sprint is ended, a retrospective meeting is held. This meeting is to discuss what went well, what did not go well and what should be improved.⁵⁴

3.7 Useful Software Tools for Product Managers

This chapter describes a list of software that PMs should be familiar with, as they are facilitating a significant amount of the jobs done by PMs. The tools are divided into 3 main categories: Requirement documentation and tracking, communication and wireframing tools.

3.7.1 Requirement Documentation and Tracking

Jira – a tool made for the whole team for planning, tracking and releasing software. This tool facilitates the tracking, prioritization and release of requirements. A big plus of this tool is that it allows the creation of custom workflows, making it adjustable to the needs of the company. Jira has been developed by Atlassian, which means that it's easily integrated with other Atlassian tools. The prices for plans hosted in the cloud are 10\$ per month per user for small teams (up to 10 users) and 7\$ per user per month for big teams (11-100 users). For bigger teams it is required to host Jira on the company's own server.⁵⁵

Confluence – another tool developed by Atlassian which works great together with Jira. The main purpose of Confluence is to keep all the documentation and discussions in one single place. Confluence has easy-to-use templates for different use-cases such as meeting notes, product requirements, marketing plan, etc. The main benefit of Jira is that it allows users to jointly edit pages, promoting team-work and cooperation. Prices are similar to the prices for Jira: 10\$ per user per month for small teams and 5\$ per user per month for big teams.⁵⁶

Google docs – can be used as a free alternative to the above mentioned tools. It requires more knowledge and effort for setting up. But in the end it allows the users to reproduce most of the features that Confluence has, making it a great tool.

3.7.2 Communication

Slack – a tech tool used for communication. It is a chatting application tweaked specifically to support business and engineering related discussions. Slack allows the creation of different channels and groups, which facilitates the communication. The main benefit is that Slack offers a completely free package for an unlimited amount of time, allowing start ups that are short on money to reduce the costs. Slack allows to chat, make audio and video meetings, to store files

⁵⁴ *What is SCRUM* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.scrum.org/resources/what-is-scrum>

⁵⁵ *Atlassian: JIRA* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.atlassian.com/software/jira>

⁵⁶ *Atlassian: Confluence* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.atlassian.com/software/confluence>

and it has a significant amount of plug ins that integrates other applications such as JIRA, Confluence and Google docs.⁵⁷

Microsoft Teams – a Microsoft alternative to teams. The main features are the same as Slack's features. However, the biggest advantage of Microsoft Teams is the complete integration with all the other Microsoft tools. The author recommends to use this tool if the company is using other Microsoft products such as Outlook, Word, Excel, Skype, etc.⁵⁸

3.7.3 Wireframing Tools

The last category of recommended tech tools for the product manager are the wireframing tools. There is an extended list of wireframing tools that can facilitate the process of creation of wireframes. Bellow is a list of wireframing tools, which all have either a free plan or a free trial option available:

- Balsamiq
- Proto.io
- Adobe Sketch
- Mockflow

⁵⁷ Slack [online]. [cit. 2019-06-30]. Dostupné z: <https://slack.com/intl/en-cz/pricing>

⁵⁸ Microsoft: Teams [online]. [cit. 2019-06-30]. Dostupné z: <https://products.office.com/en-us/microsoft-teams/group-chat-software>

4 Practical Part

The practical part focuses on applying the PM best practices defined in the previous chapter to a real world business case. The practical part is divided into five main chapters:

- Problem hypothesis definition
- High-level solution definition
- Product-Market fit
- Value proposition and mission
- Roadmap and costs/revenue forecasts

The methodologies used in this chapter are primary and secondary researches. The primary research is used in the first chapter in order to define a hypothesis and make some assumptions. Then, in the product-market fit chapter secondary researches are made in the form of personal interviews and questionnaires. The aim of the secondary research is to validate the business case, to have a better understand of the customers and their underserved needs, to be able to create some revenue forecast and to understand what are the set of features that are needed for MVP.

The whole practical part validates the thesis hypothesis. It demonstrates that by following a clearly defined set of best practices, one can validate a business case, and create the solution for a working product that would have potential in the real-world market.

4.1 Problem Hypothesis Definition

The first step of every startup is to define the problem. As a starting point it is necessary to choose a market that the product would focus on. According to a research made by Market Vision⁵⁹ there are 2.5 million dogs and 1.9 million cats currently living in the Czech Republic, which brings to a conclusion that there is a sizeable market to focus on. Following this data, a decision to continue focusing on the target group of pet owners has been made. Having in mind the market size of 4.4 million of pets in Czech Republic, a next step is to find a pain point that the pet owners have and try to solve it.

After doing more research of the pet market, it turned up that almost all the pets require grooming. According to the American Kennel club⁶⁰, dogs should be groomed once per month on average depending on the hair length and type of coat. Other type of pets might also require grooming. The problem hypothesis created is that currently the process of booking an appointment and grooming the pet is painful, and there is a niche market that has underserved needs, providing a business opportunity with a total addressable market size of around 4.4 million of users.

⁵⁹ MARKET VISION. *PET INSURANCE - CATS AND DOGS MARKET POTENTIAL AND CUSTOMER INSIGHTS* [online]. [cit. 2019-06-30]. Dostupné z: http://www.ventureclub.cz/wp-content/uploads/2017/09/Pets_Market-and-Insights_final_VC_Sept-2017-2.pdf

⁶⁰ American Kennel Club: *Why It's Worth Having Your Dog Groomed Professionally* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.akc.org/expert-advice/health/why-its-worth-having-your-dog-groomed-professionally/>

4.2 High Level Solution

By following the problem hypothesis that has been defined in the previous chapter, the PM can start defining the high-level solution. In order to define the high-level solution the Zoom in, Zoom out, Zoom in methodology is used.

Zoom in

The first step of this methodology is to zoom into the problem and to understand the problem and the pain points of the potential customers. During this phase the problem hypothesis is used, which is that the pet owners spend too much time and effort in finding a pet grooming service, further they are also not satisfied with the level of quality that they receive.

Zoom out

During this phase, three potential solutions of the problem hypothesis have been captured:

- Gather all the pet groomers under a single pet grooming studio.
- Online platform where the pet owners can find pet groomers in their vicinity and make an online appointment.
- Teach all the pet owners to groom their pets by themselves

Zoom in

The last step of the ZiZoZi method is the Zoom in. All the ideas gathered in the previous step should be analyzed and the unfeasible ideas should be excluded. Gathering all the pet groomers under a single pet grooming studio is not a feasible idea, as most of the groomers would prefer to have their own business. Another reason why this idea is unfeasible is due to the location factor, it is expected that the majority of the pet groomers will not be keen to travel hours to get to their studio.

The second idea – to teach all the pet owners to groom their pets by themselves can also be categorized as an unfeasible idea, as the owners might not want to spend their time and effort in learning how to groom their pets. There is already a significant amount of pet grooming lessons available both online and there are even special schools that teach this discipline. Thus, taking into consideration the above mentioned, this idea can also be classified as unfeasible and excluded.

The last option, to create an online platform where the pet owners can find pet groomers in their vicinity and make an online appointment, is definitely more down-to-earth. In today's modern world technology is advancing with a fast pace and the internet has become one of the most important environments for running businesses. Applications like Uber, Airbnb and Booking have replaced the traditional way how people were ordering a cab or were renting a property for their vacation. All the above-mentioned makes this option the most feasible.

4.3 Product Market Fit

At this stage, a problem hypothesis has been defined and a possible high-level solution for this problem has been chosen. The product-market fit chapter focuses on confirming this hypotheses and going into details on the product side.

4.3.1 Target Customer and Underserved Needs

This chapter focuses on the definition and understanding of the target customers and their underserved needs. The market-related layers of the product-market fit pyramid are the target customers and the underserved needs layers. The methodology used to define the customer needs and the market potential is by conducting a questionnaire that helps understanding the behavior of the customers and helps finding a pattern in their behavior.

4.3.1.1 Questionnaire

Questionnaire Structure

The author of the thesis conducted an online questionnaire where 100 pet owners have responded, for all the questions, pre-defined answer options have been provided. The questions asked in the questionnaire are the following:

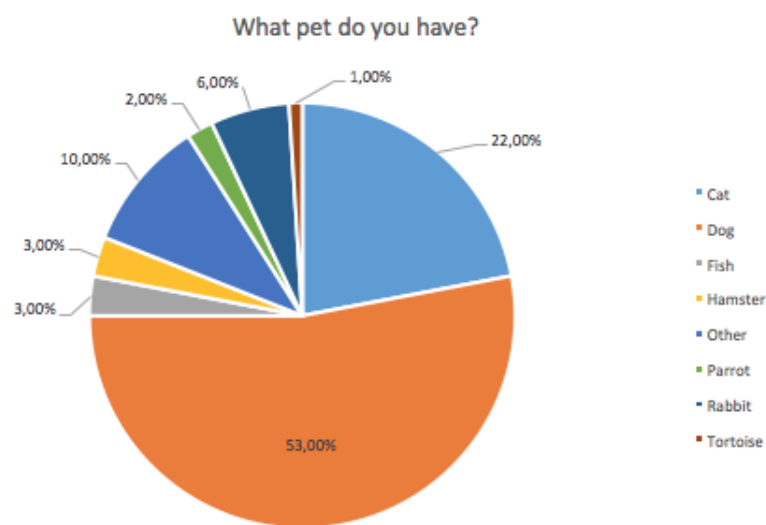
- What pet do you have? The answer options for this question were: cat, dog, fish, hamster, parrot, rabbit, tortoise, other. The purpose of this question is to understand what pets are the most commonly groomed and what pets to focus on.
- Have you ever used grooming services for your pet? This is a yes/no question, the purpose of this question is to understand the percentage of people that use professional grooming services. For the users that did not ever use any grooming services, the questionnaire ends at this question.
- How often do you use pet grooming services on average? The answer options for this question were: Once a year, once in 3 months, once in a month, twice in a month, more than twice in a month. This question helps to understand the grooming habits of the pet owners and also helps in the creation of the revenue forecast.
- How much do you spend on average per grooming service? Five price ranges were provided to choose from: <200 CZK, 201-500 CZK, 501-1000 CZK, 1001-2000 CZK, >2001 CZK. Same as for the previous question, this should support and give a better insight of the possible revenues.
- Please specify how did you find pet groomer services? The proposed variants to respondents were: Search engines, personal recommendation, social media advertisements, social media groups and pages, veterinary, announcement web sites, review blogs and web sites (e.g. Trip Advisor) and Others. This has been asked in order to understand the current owners' jobs and to assess the current competition of the proposed product.
- Based on your personal experience, how hard is it to find a pet groomer that offers you the desired level of services. Respondents had answered to this question by assessing it in a scale from 1 to 5 where 1 is very difficult and 5 is very easy. This question should

help to validate the process, if users find it very easy to find the pet groomers, then it makes no sense to continue with the product.

- What is the main decision making factor when choosing the service you need for your pet? The proposed answers for this question were location, price, quality, availability, share of experience, rating and reviews. Thanks to the provided answers to this question, it is possible to find out what are the key areas of focus, and define the MVP.

Questionnaire results and analysis

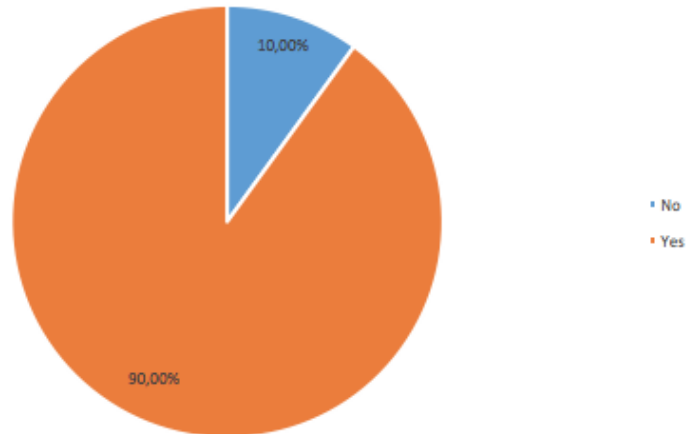
After getting 100 results to the questionnaire, the results have been analyzed and the following findings were observed.



Graph 1: Questionnaire results 1 Source: Author

Graph 1 reflects the answers to the first question and it is observed that the most popular pets are the dogs, followed by the cats, which make 75% of the total respondents. Based on these results, a decision to focus on dog and cat owners has been made.

Have you ever used grooming services for your pet?



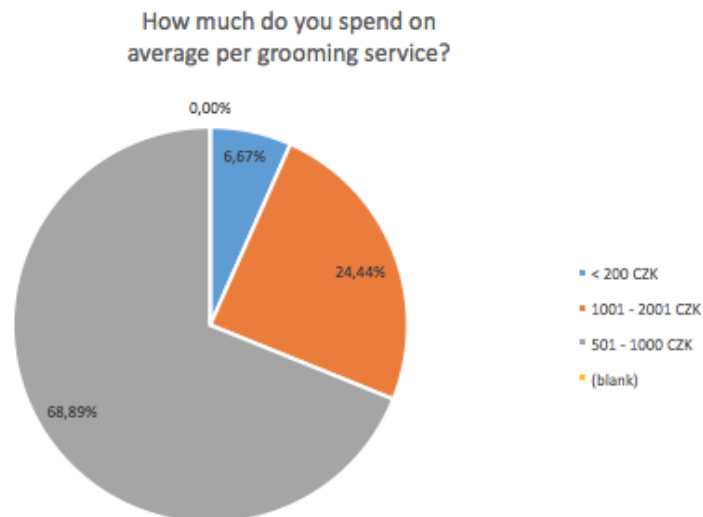
Graph 2: Questionnaire results 2, Source: Author

Graph 3 shows the answers to the second question of the questionnaire, confirming the hypothesis that most of the pet owners use professional grooming services, validating the business idea.

Row Labels	Count of How often do you use pet grooming services on average?
<input type="checkbox"/> Once a year	33,33%
< 200 CZK	4,44%
1001 - 2001 CZK	18,89%
501 - 1000 CZK	10,00%
<input type="checkbox"/> Once in 3 months	61,11%
< 200 CZK	2,22%
1001 - 2001 CZK	4,44%
501 - 1000 CZK	54,44%
<input type="checkbox"/> Once in a month	5,56%
1001 - 2001 CZK	1,11%
501 - 1000 CZK	4,44%
Grand Total	100,00%

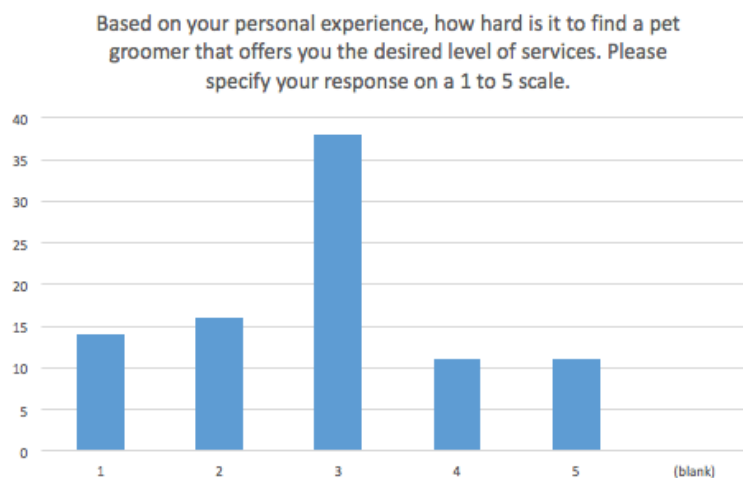
Table 1: Questionnaire results 3, Source: Author

Table 1 represents the answers to the next two questions. It gives an insight that most of the respondents groom their pets at an average of 4 times a year, giving us a starting point to forecast of the number of yearly transactions of users. Based on this graph it is also seen that most of the users who groom their pets once a year are keen to spend more on grooming services than those who do it more often.



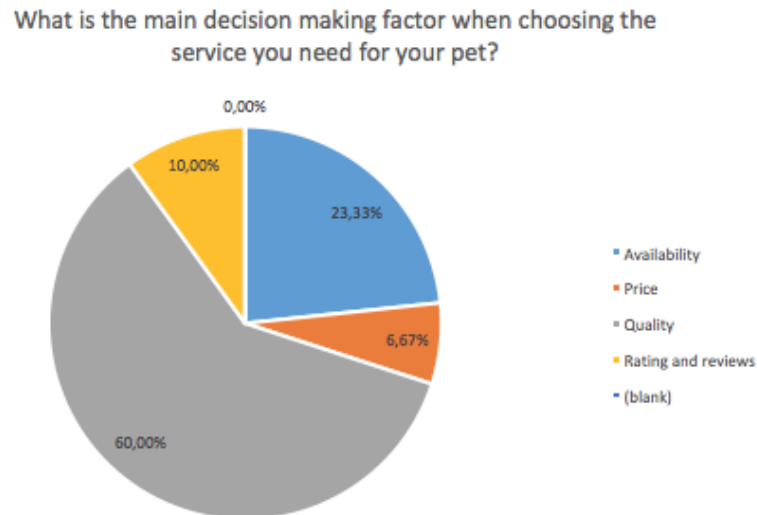
Graph 3: Questionnaire results 4, Source: Author

By analyzing the results presented in Graph 3, it is clearly seen that most of the users spend on an average of 501-1000 CZK per grooming service. Surprisingly only 6,67% of the users spend less than 200 CZK. Another surprising fact is that an amount of 24,44% of respondents pay more than 1001 CZK for their grooming services. Based on this results an average service cost of 500 CZK can be considered.



Graph 4: Questionnaire results 5, Source: Author

By analyzing the data presented in Graph 4 the hypothesis that the process of finding a pet groomer and making an appointment has its pain points has been validated. Most of the respondents are have rated with a three, which means an average, meaning that there is room for improvement. Another fact that confirms that the business idea is valid and that there is a market opportunity is that the users that there is a slightly bigger number of respondents who find it very hard to find a groomer than the amount of users who find it easy.



Graph 5: Questionnaire results 6, Source: Author

Graph 5 represents the results of the last answer and the last findings of the questionnaire. Surprisingly 60% of the respondents have chosen the quality of the services provided over the other criteria, meaning that they are keen to travel more and pay a higher price just to get the desired quality of work. This would mean that even if the pet groomers would decide to increase their prices in order to cover the service fee, the owners will still be keen to use their services if the quality is satisfying them. Also, according to these results, the main driving and advertising factor for the business should be the level of quality of services and the availability. As a conclusion and main outcome of the research, it is possible to say that the business idea and the hypothesis that there is a gap in the market has been validated.

4.3.1.2 Problem Statement Canvas

After the market research has been conducted and insights of the market have been assimilated, it is possible to start the definition of the target consumer, starting with the first artefact, the problem statement canvas that is represented in Figure 6.

CONTEXT When does the problem occur? The problem occurs when the pet owners need to groom their pets. At an average of once in 3 months	PROBLEM What is the root cause of the problem? The process of finding a pet groomer is complex as usually the quality level of services is questionable.	ALTERNATIVES What do customers do now to fix the problem? Use search engines or other tools to find pet groomers.
CUSTOMERS Who has the problem most often? All the pet owners that use professional grooming services.	EMOTIONAL IMPACT How does the customer feel? Frustrated QUANTIFIABLE IMPACT What is the measurable impact (include units)? Time spent and increased level of stress due to bad services	ALTERNATIVE SHORTCOMINGS What are the disadvantages of the alternatives? Takes too much time and the quality of the services provided is questionable. Also the pet owners don't have knowledge about the availability of groomers

Figure 6: Problem statement canvas, Source: Author

Context

According to the customer survey, the problem is occurring once in 3 months, when the pet owners want to groom their pets.

Customers

All the pet owners that use professional pet grooming services can be classified as the potential customers. Demographic factors of the customers do not matter as they all have the same goal and purpose – to get their pets groomed. However, according to the customer data, the primary target group of the customers is the dog and cat owners, making the owners of other pets the secondary target group.

Problem

The main problem of the target customers is to find a pet groomer for their pets that would be able to provide services at a desired level of services. However, digging deeper into the root cause of the problem, it is possible to say that the consumers spend unnecessary time in finding a groomer. More than that, according to the survey conducted before, it is possible to deduct the main problem, which is the questionable level of services provided by groomers and the limited availability of them.

Emotional Impact

The emotional impact is frustration. Pet owners get frustrated when they cannot find a groomer or they receive services of poor quality.

Quantifiable Impact

As quantifiable impact the time spent while finding a pet groomer has been identified, the second, more abstract quantifiable impact is the stress level.

Alternatives

There are several alternatives currently available; however, the most popular one is the search engines, which are widely used in order to find pet groomers.

Alternative Shortcomings

As of alternative shortcomings, it usually takes too much time to find a pet groomer in a search engine. Also there's not always a possibility to check reviews or pictures of their work, making the level of provided services unknown for the pet owner.

4.3.1.3 *Personas*

This sub-chapter of the thesis describes four personas that represent the targeted customer groups that were defined previously. The personas were created based on two main criteria: author's personal experience and knowledge of the pet owners segment and based on the results of the personal interviews conducted with pet owners and groomers from different demographic groups. The main purpose of this exercise is to have a better understanding of the behavior and to raise the empathy towards the target customer. These personas represent users with very different interests and occupations, but who at the same time share common needs towards their pets. They were created with the help of templates that are widely available in Canva.com for free. The author adjusted the templates in order to be more relevant to the analyzed topic. Images 1, 2 and 3 represent pet owners that are regular users of pet grooming services and are classified in the pet owners' customer segment. Image 4 illustrates a representative from the pet groomers segment. These artifacts should be stored internally and used as reference when analyzing the customer behavior.



Anna

21 YEARS, STUDENT

I want Fluffy to get enough attention and quality care with minimum time spent on this.

Anna is a student; she came from Kazakhstan to study medicine in Charles University. Currently she is learning the Czech language at UJOP. Anna spends a significant amount of time on her studies, beside the Czech courses she also frequents additional courses for Biology and Chemistry. She spends a lot of time in her phone, mostly she uses the phone to communicate with her friends and relatives from Kazakhstan. During long walks with her pet she likes to listen to her musical playlists in her phone.

Anna doesn't have enough free time, enough knowledge of Czech language and doesn't have too many friends in Prague, these are the reasons why it's quite hard for her to find a groomer for her dog that she brought over with her.



Internet ★★★★★
Applications ★★★★★
Sociability ★★★★★

Image 1: Persona Anna, Source: Author



Jan

35 YEARS, BUSINESS ANALYST

I want to find a person with whom I could share my evenings with, but for now I am sharing them with my cat.

Jan is a career person and is successfully climbing the career ladder. He is spending all his energy at work and that is bringing results. But, when Jan comes home, he is greeted only by his long-haired cat Jack. During the evenings, Jan usually spends in his phone or computer by ordering food and clothes, or just by trying to find his second half in Tinder.

Jan is frustrated that he cannot find a good groomer for his cat that wouldn't require traveling across the whole city.



Internet ★★★★★
Applications ★★★★★
Sociability ★★★★★

Image 2: Persona Jan, Source: Author



Marketa

40 YEARS, HOUSEWIFE

My husband always dreamed about a big and happy family. His dream became true, but with every new family member my personal time is reduced exponentially.

Marketa is a mother of 4 children, 3 girls (2 of them are twins) and a boy. Marketa's life started to look like Groundhog Day. Every day is a routine of cooking and cleaning, which she tries to diversify by cooking unusual meals that she finds with the help of the mobile application Kitchen Stories. Every evening she walks her golden retriever dog Molly, who has become a member of the family, in her favorite park - Riegrovy Sady. Marketa doesn't always have time for shopping, that's why she is used to order her clothes online with home delivery. She considers that the evolution of different online services makes everyone's life easier.



Internet ★★★★★
Applications ★★★★★
Sociability ★★★★★

Image 3: Persona Marketa, Source: Author



Paula

28 YEARS, PET GROOMER

It's an unbelievable joy when your job brings you not only money, but also satisfaction.

Paula liked to spend her time with different pets since she was a child, that's why as an adult she decided to try herself as a pet groomer. She finished a significant amount of courses and webinars related to pet grooming techniques. Paula is being inspired by the works of the most famous pet groomers of the world, which she is following in Instagram.

Paula has recently opened her own pet grooming studio and, as a starting entrepreneur, significant amount of money is being spent on promotion and advertisement of her services.



Internet ★★★★★
Applications ★★★★★
Sociability ★★★★★

Image 4: Persona Paula, Source: Author

4.3.2 Value Proposition

4.3.2.1 Value Proposition Canvas

Once the market fit is defined, the first layer of the product fit is the value proposition. For a better understanding of the value proposition and the purpose of the product, the value proposition canvas is used.

Pet owners

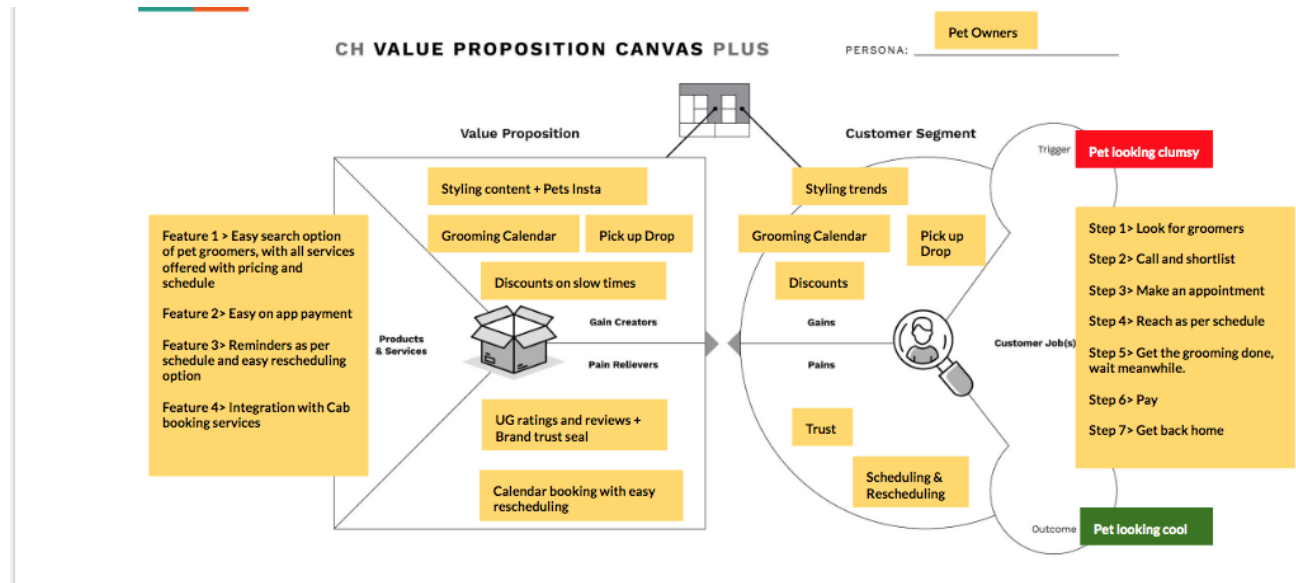


Figure 7: Value proposition canvas - Pet owners, Source: Author

In Figure 7 the value proposition canvas for the pet owners segment is represented. The main trigger for them is their pet looking clumsy, currently the pet owners have to go through an extended list of steps in order to get their job done, which are described in the Customer Job(s) part of the canvas:

1. The first step in order to get their job done is looking for groomers. The users have to go through an extended process of searching in order to find a groomer that will suit their price, location and time needs. Usually that is done by using online tools such as google or Facebook groups, or by getting recommendations from their friends.
2. The second step is to call and shortlist. In most of the cases, the consumers have to call the groomers in order to check their availability.
3. After finding a service that will suit their need they have to make the appointment.
4. The next step is to reach the grooming studio as per their appointment. Get the grooming done, make the payment and get back home.

This whole process brings them certain pain points, which are the following:

- They might not have trust in the grooming studio while making an appointment, as they might not have prior experience with that grooming studio. They are afraid of getting services that they will not be pleased with, thus making them unsure about the level of quality of the services.

- Scheduling and rescheduling is also a challenging, as sometimes finding a studio that is available in their suited time might not be very easy.

As a reliever for the above mentioned pain points, the product offers user generated ratings and reviews, which would help them learn from previous user experience and also the users will have access to calendar booking with easy rescheduling, where they would be able to see the schedule of the groomers. All this is bringing to the user a product that will offer the following features:

- Easy search option of pet groomers, with all services offered with pricing and scheduling. Customers will be able to see everything that a groomer offers, as well as their availability and prices.
- Easy on app payment. The users will have their payment method set up in advance on their account, and the amount will be blocked on their credit card when they will make an appointment.
- Reminders as per schedule and easy rescheduling options. A reminders service will be integrated within the app so that the consumers never forget about their appointments, also they will have the option to reschedule for their next appointment, right after the service is provided to them.
- Integration with Cab booking services. Users will be able to order a cab to their appointment without having to exit out of the application.

Taking into consideration the set of features that the product offers, the consumers will benefit of the following gains:

- Styling trends – the application will have a blog section in the future, where professional copywriters will be posting different blogs related to the latest trends from the industry, thus giving the pet owners some inspiration that they could apply.
- Grooming calendar – the users will have access to groomer's calendars, making the appointment a much easier process.
- Pick up drop – by integrating such cab services as Uber and Bolt, the users will be able to order a cab with ease. This is not a main feature; however, this feature would eliminate a few steps from the user journey.
- Discounts – groomers will be able to set up discounts for specific time frames (most probably those will be the time frames when there's a low amount of orders).

Pet groomers

The second main customer segment that would benefit from the application are the pet groomers. Their jobs and value proposition is different from the pet owners, that is why a separate value proposition canvas was created for them which can be seen in Figure 8.

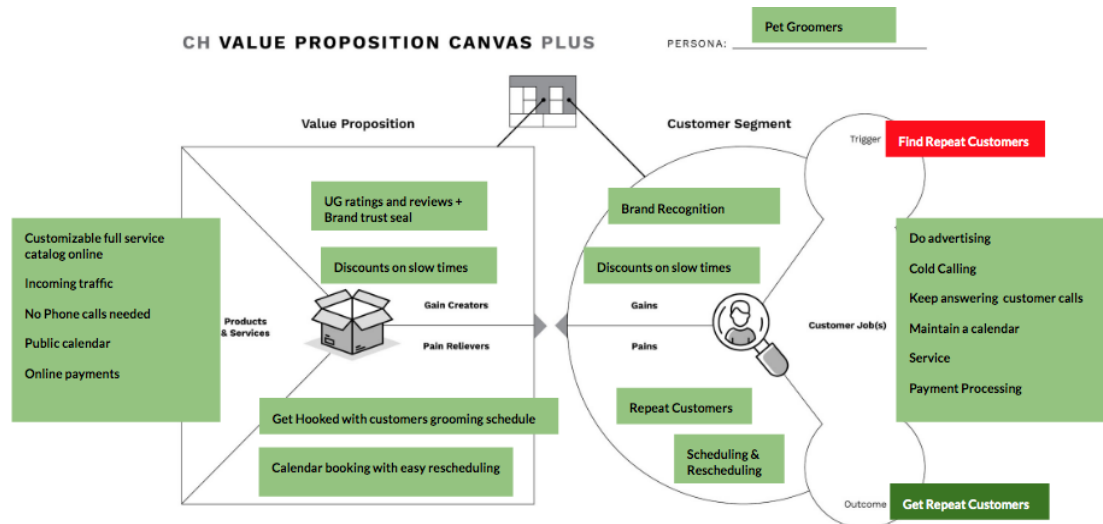


Figure 8: Value proposition canvas Pet Groomers, Source: Author

The main trigger for pet groomers is finding repeated customers; currently the steps to get this done are described in the following customer jobs:

1. Do advertising – pet groomers and pet grooming studios have to spend a significant amount of money for advertising. This can be both for PPC advertising and other types of advertising. This might result in a quite high cost for gaining a customer.
2. Cold calling – this is not very popular these days, however, there is a chance that some pet grooming studios have an extended list of potential customers that they do cold calling to. This implies additional time and money costs.
3. Keep answering customer calls – most of the pet grooming studios do not have an online registration system, thus making them to spend additional time answering customer calls and making appointments.
4. Maintaining a calendar – pet groomers should have their own calendar, so they might require to use some traditional tools as physical calendars and notepads or they might use some digital solutions to that such as Google calendars. In both cases, this implies additional time spent.
5. Service and payment processing – after the service is provided, the groomers have to process the payments, implying additional costs for procuring and maintaining card payment terminals.

The outcome of their job is to get repeated customers. However, the pain points that are raised from these steps are obvious. Getting repeated customers implies additional costs. In order to relieve the pain points, the following pain relievers have been identified, the main purpose of the product is to get these pain points eliminated with the help of the following products and services:

- Customizable full service catalog online. The pet groomers will be able to have their full catalog online and customizable, this will eliminate the need to create their own web pages with their catalog of services, as well as this will eliminate the extra time spent on answering to questions related to the price and availability of services.

- Incoming traffic. The application will help the pet groomers get new customers at relatively low costs.
- No phone calls needed – the process of making appointments and booking will be simplified, eliminating the need of phone calls and physical appointments.
- Public calendar – the calendars of the pet groomers will be available for the audience, thus eliminating the extra time spent discussing the available windows with the customers.
- Online payments – all the payments will be made online via credit card, this will eliminate the need to carry cash and the need to have a credit card payment terminal in the studio, reducing further costs.

4.3.2.2 Business Model Canvas

After the value proposition has been defined for both customer segments, the next artefact has been created, the business model canvas, which can be seen in Figure 9 below. The key activities, value proposition and customer segments were already described in details in the previous chapters; consequently, they are not covered in this chapter.

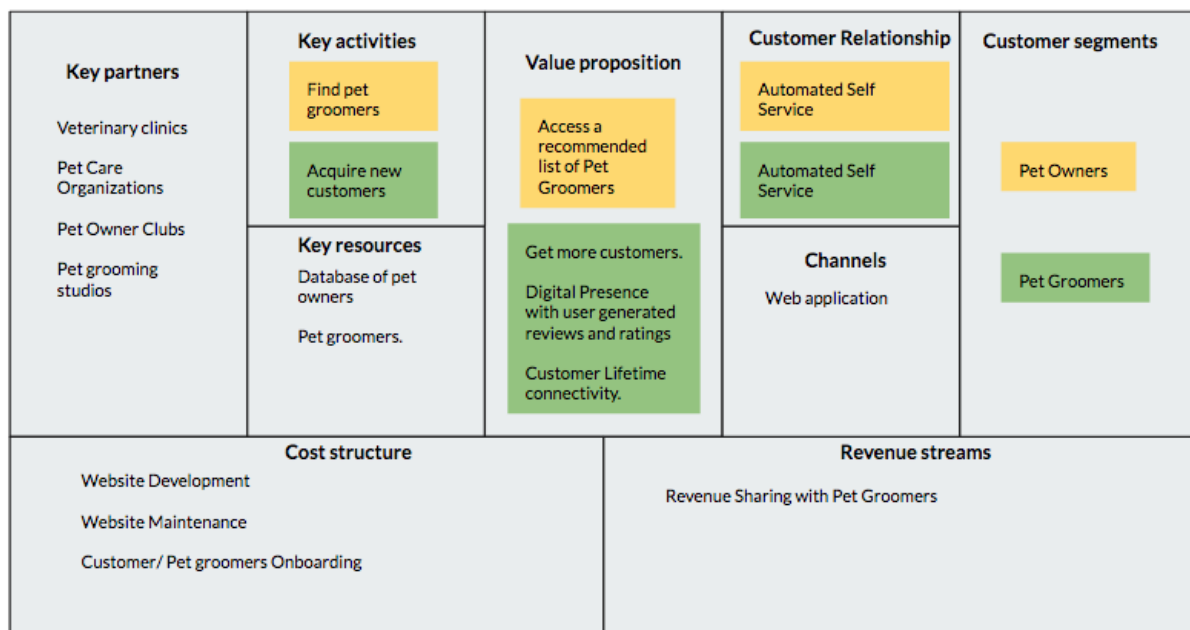


Figure 9: Business Model Canvas, Source: Author

Key partners

The main purpose of the key partners is to acquire new users, both on the pet grooming and pet owners' side. The main impact from the involvement of those partners will be during the growth phase of the product, when the brand recognition is low and when the main goal of the product is to acquire as many users as possible. It is strongly believed that by cooperating and by mutual agreements, the key partners mentioned above will facilitate and accelerate the growth of the user base as all the above mentioned partners are in extensive contact with pet owners.

The first marketing strategy would be marketing flyers placed in offices and clinics, where their customers would be able to find out about the service. It is strongly believed that while in the waiting rooms, the clients can spend their time reading the marketing flyers, raising their interest to the product and making them want to try it. The second marketing strategy would be advertisement in Facebook groups and webpages. This can strategy can be extremely effective especially in pet owners Facebook clubs, where the user base is keen to try alternative solutions that would improve their quality of life. According to the answers provided by the respondents, a significant part of the respondents finds pet grooming services from Facebook, recommendations, and friends. The next marketing strategy involving the key partners is the word-of-mouth strategy; this would especially involve veterinary clinics, where the veterinarians would recommend to their customers to try out the new service. According to a study conducted by VetFutures in 2015⁶¹ 95% of the respondents trust their veterinarian doctors (61% generally trust them and 34% completely trust them). Last, but not least, the pet grooming studios, who are also customers and users of the product, will also, be a part of the marketing strategy. The main goal is to make them provide their services only throughout the application, that can be done by offering them reduced revenue share and other registration bonuses. From the other hand, the product will offer the partners the opportunity to have advertisement banners in the service and will have special discounts for the pet owner club members, making everyone happy.

Key resources

The most important assets that will help make the business work and that will bring the value to the customers are the databases of pet owners and pet groomers, this also being the main competitive advantage of the product. For the pet owners, the database will help them find a pet groomer that is available and that is located in close proximity of their location. From the other hand, the active user base will bring the pet grooming businesses new customers. It is expected that without the key resources the application will not be able to produce value to its users, thus leading to a failure.

Channels

The only distribution channel that is aimed for launch is the web application, where the individuals will be able to advertise their services, make appointments, make payments, contact support and find out more information about the latest trends in pet grooming industry. However, after the launch of the responsive web application, new distribution channels can be taken into consideration: native mobile applications (iOS, Android). These are not mentioned in the Business Model Canvas as these are out of scope for launch.

⁶¹ *Vet Futures: Public trust in the professions* [online]. [cit. 2019-06-30]. Dostupné z: <https://www.vetfutures.org.uk/resource/public-trust-in-the-professions-may-2015/>

Revenue Streams

The only revenue stream that is in scope for launch is the revenue sharing with the pet groomers. It is planned to charge the pet groomers a fee of 5% of the total transaction. This strategy is already widely being used by such popular services as Airbnb, Booking, Uber, etc. The main benefit of this pricing model is that the pet owners will not have additional costs, making them to want to register and to use the services. From the other hand 5% fee is not a significant one and it is assumed that the total fee charged to the pet groomers will be much less than their actual spending on marketing and payment processing.

4.3.3 Feature Set

The next layer of the product fit pyramid is the Feature set. The main artefacts described in this chapter are the Product Vision Board, Product Viability, Product Attributes, MVP Feature set and the high-level product roadmap. The product strategy is described with the help of the product vision board, product viability and product strategy. Once those are defined, the MVP Feature set will be designated, the features are described in high-level user stories and divided per features and epics. In the end of this chapter, as an outcome, the initial high-level product roadmap is defined.

4.3.3.1 Product Vision board

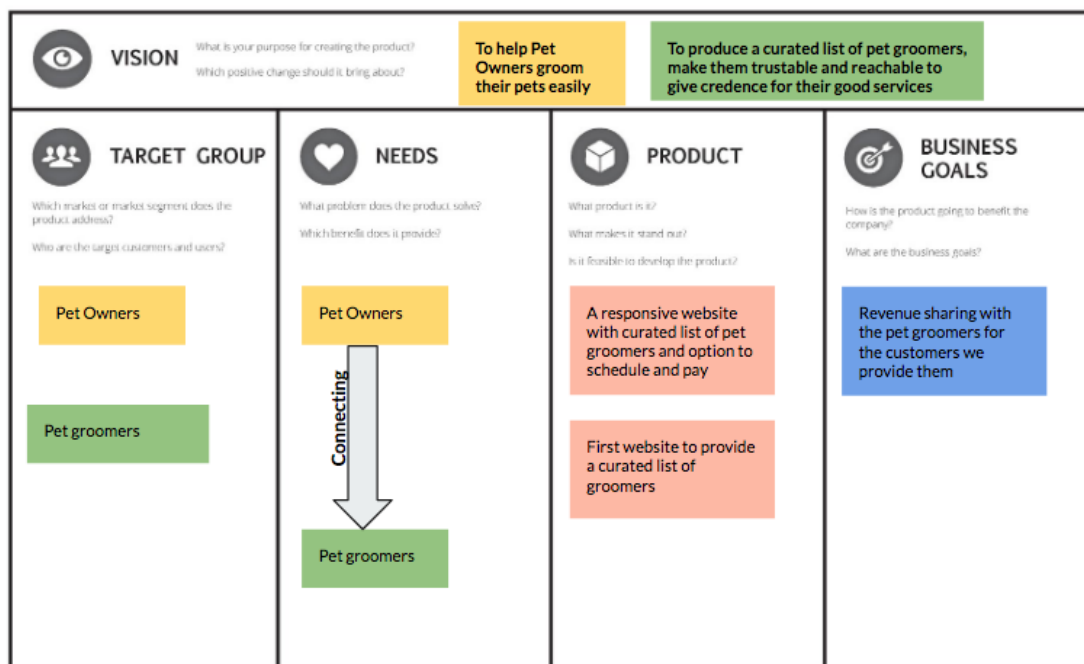


Figure 10: Product Vision board, Source: Author

Figure 10 describes the product vision and product strategy. The main purpose for creating the product and the change that it will bring to the pet owners is the help them groom their pets easily. It is supposed that the product will help the users find the pet groomer that will mostly suit their needs, in the end helping them to groom their pets. From the other hands, the pet groomers will benefit of a curated list of pet groomers, increased trust with the help of user

reviews and will ease the process of making an appointment, making the pet groomers more reachable by their clients.

The main target groups are already described in the previous chapters and those are the pet owners and pet groomers, who have a common need – to connect between each other. Those needs are solved by the product, which will be a responsive web application with a curated list of pet groomers and with the option to schedule an appointment and to make an online payment. This is the first application in Czech Republic of its kind.

As it is in the case of most of the companies, the main business goal is to earn profit. This will be achieved by the revenue sharing with the pet groomers in exchange to the customers that are provided to them.

4.3.3.2 MVP Feature Set

Keeping in mind the value proposition, vision and target customer, the set of features for phase one has been defined:

- Geolocation awareness – the application can detect the location of the user in order to suggest the pet groomers that are available nearby
- Search – pet owners can search for grooming studios or groomers that they already know. Also, the users are able to search by location.
- Sort – pet owners can sort the results by different criteria such as distance from their current location, ratings or by number of reviews.
- Filter – pet owners can filter the groomers by the range of services that they offer, by ratings, by distance, by availability, by tags and by offers based on discount range from their current location.
- Catalog – on one hand, pet owners are able to see the catalog of offered services and the price of them. On the other hand, pet groomers can create and customize their own catalog of services in order to make it more attractive to their customers.
- Calendar – pet owners have access to the calendar of pet groomers, making it easier to find an available slot that would suit their time needs.
- Bookings – pet owners can make an online booking and payment via credit card when choosing a service. Pet groomers can approve the bookings and receive the payments.
- Promotion and discounts – pet groomers can create promotions and discounts for specific time-windows, making their services more attractive.
- Trends – the application offers a blog that contains the latest trends and tips for taking care of the pets, providing educational and inspirational content to both customer segments.

Once the features have been defined, a prioritization exercise was conducted with the potential users of the app. At first the respondents were introduced to all the features after which they were asked to rate the features based on their importance on a scale from 1 to 5, where 1 is “Not important” and 5 is “Must have”. The results of the questionnaire are represented in Graph 6:

Feature	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	Average
Geolocation Awareness	5	4	5	4	3	5	3	4	2	3	4	1	5	3	4	5	5	5	5	5	4
Search	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Sort	2	3	4	1	5	3	4	5	5	5	5	4	5	4	3	5	3	4	5	5	4
Filter	5	4	3	5	3	4	5	5	1	5	3	4	5	5	5	5	4	2	3	4	4
Catalog	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Calendar	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bookings	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Promotions and discounts	5	5	3	1	5	3	2	1	4	3	3	1	2	4	3	4	3	2	3	3	3
Trends	1	2	1	1	1	2	5	1	2	1	2	1	3	3	3	3	4	1	2	1	2

Graph 6: Prioritization - Personal questionnaire, Source: Author

The main outcome of this exercise is the defined list of user features required for MVP. Only the features with an average score of 4 and 5 were introduced in the scope of MVP for launch, the other ones being left for post-launch.

4.3.3.3 User Story Map

The next step is to go deeper in details and create the user stories for the features that have been identified as must-have for MVP. The features have been divided into epics, which then have been divided into high-level user stories. The story map is the main artefact that will be used during the development phase and it can be seen in Table 2 below:

Epic	User story
Sign in/Sign up	As a pet owner, I want to be able to create an account, so that I can use the service to find pet groomers
Sign in/Sign up	As a pet groomer, I want to be able to create an account, so that I can offer my grooming services to pet owners
Sign in/Sign up	As a user, I want to be able to sign in to the application, so that I can use and enjoy the service
Payments	As a pet owner, I want to be able to pay for the services that I booked by using my credit card, so that I don't have to deal with payments issues when I groom my pet
Payments	As a pet groomer, I want to be able to receive payments directly to my credit card account, so that I don't have to deal with any payment issues
Payments	As the product, I want to block the payment until the services are not offered to the users, so that there are no fraud situations
Location Detection	As the product, I want to be able to recognize the pet owner's location, so that I can suggest groomers that are nearby
Location Detection	As a user, I want to be asked if I want to share my location with the application, so that I don't share any personal data without my permission
Groomer profile	As a pet groomer, I want to be able to edit my profile, so that potential customers can find out more information about me

Groomer profile	As a pet groomer, I want to be able to customize my catalog of offered services, so that it is always up to date
Groomer profile	As a pet groomer, I want to have a calendar, so that I'm always up to date with the upcoming appointments.
Groomer profile	As a pet groomer, I want to add pictures to my gallery, so that the customers are aware of the quality of services that I provide
Groomer profile	As a pet owner, I want to see the profiles of pet groomers, so that I have all the necessary information before making an appointment
Groomer profile	As the product, I want to hide the contact information of the groomers, so that pet owners don't make an appointment directly to them
Search	As a pet owner, I want to search for pet groomers, so that I can choose the one that fits my needs the most
Search	As a pet owner, I want to sort my search results based on different criteria, so that I can easier find a groomer that fits my needs
Search	As a pet owner, I want to filter my search results based on different criteria, so that I can easier find a groomer that fits my needs
Booking	As a pet owner, I want to book an appointment for a specific service, so that I can then get my pet groomed
Booking	As a pet owner, I want to see the available time slots when booking a service, so that I can choose the one that I need
Booking	As a pet groomer, I want to confirm an appointment, so that I don't get someone booked by mistake
Booking	As a pet owner, I want to see the contact details of the groomer after my appointment is approved, so that I can contact him
Reviews	As a pet owner, I want to be able to write a review and add a rating to a groomer, so that I can express my feedback on his services

Table 2: Story map, Source: Author

The above mentioned user stories are high level stories, missing acceptance criteria and are subject to change after they will be reviewed by the engineering team.

4.3.4 UX

4.3.4.1 User Flows

The MVP requirements that have been defined in the previous chapter allow the creation of the main user flows in the application, which are the starting point in the definition of the user experience and visual designs. The creation of the user flows was made with the help of the web application draw.io, which facilitates the process of creating different diagrams.

Sign up flow

The first user flow that can be seen in Image 5 represents the sign up journey. The user flow starts when the user accesses the web page. The first step is the selection of the create account button, upon selecting this option, the user is redirected to the sign up page where the user has to select the account type: pet owner or pet groomer. If the user decides to create a pet owner account he is asked to insert his email, name and password on the next screen, upon confirming this details, a check is made to verify if the email address has not been previously used. If the email has not been previously used then the account is successfully redirected and the user is redirected to the homepage as signed in user, at this point the sign up flow for pet owners ends. The sign up flow for the pet groomers is more complex, they are required to also add the address of their grooming studio, the phone number and the credit card details. After the email is checked and if it is not already used the next step of the registration is to add the services that they provide, once the service are added groomers are required to add the timeslots when they are available to their calendar, and only after updating their calendar the account gets created and they are redirected to the homepage as signed in users.

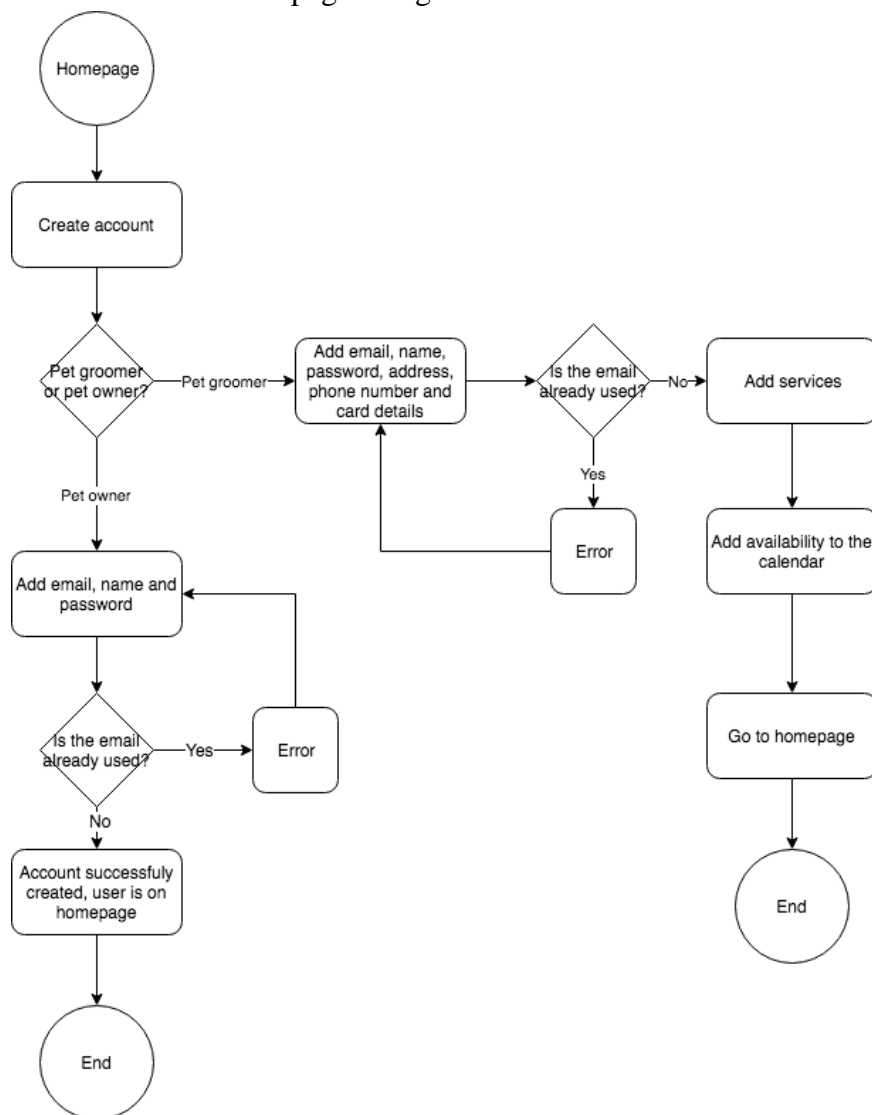


Image 5: Sign up user flow, Source: Author

Sign in flow

The next user flow, which has been captured, is the sign in flow, which can be seen in Image 6. The sign in flow is the same for both user types: pet owners and pet groomers. The starting point is the same as in the sign up flow, the user starts from accessing the service and is on the home page, the first decision point is made on the user side, if the user has an account created then he selects the sign in option, if not then he selects to sign up and is redirected to the sign up flow. After the sign in option is selected, the user is redirected to the sign in screen where he can enter his email and password, the sign in screen has also an option to sign up, which on selection redirects the user to the sign up flow. Once the user has entered the credentials, a check is made and if the credentials are correct, the user is signed in and redirected to the homepage. In case the credentials are not correct, then the user is redirected back to the sign in screen and informed by an error message that his credentials are not correct.

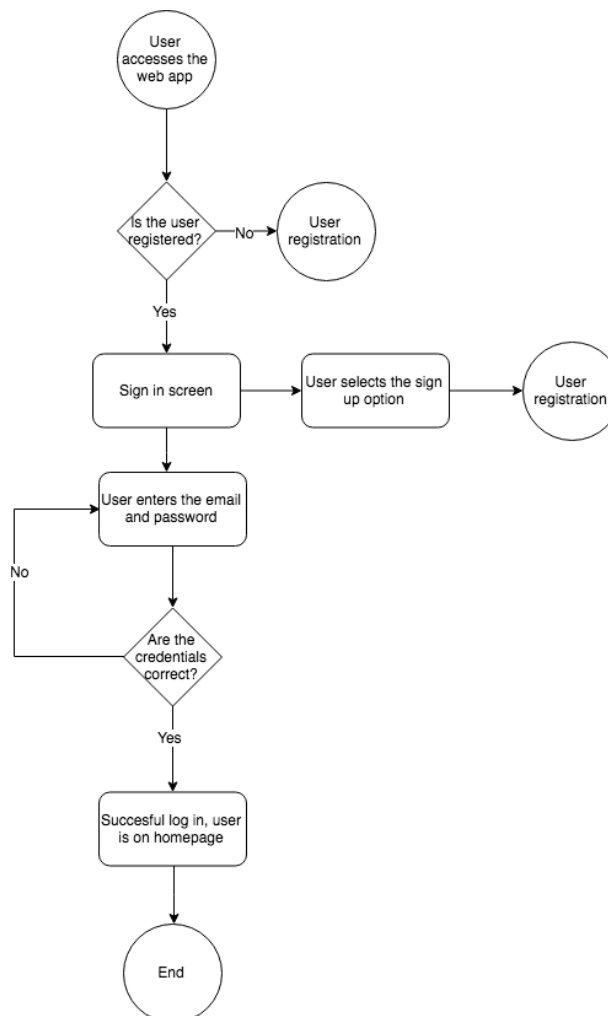


Image 6: Sign in user flow, Source: Author

Booking an appointment

The last user flow that can be seen in Image 7 shows the process of booking an appointment, this user flow is valid only for the pet owners' user segment. As a starting point, the user is signed in and selects to search for a groomer, then the user is presented with a groomers list, from which he selects a groomer. After which he is redirected to the groomers' page, at this point the user has to check the provided services and to decide if the groomer provides the necessary services that would suit his needs. In case the user doesn't have those services, the user goes back to the search results and tries to select another groomer. If the groomer has the desired service, the user selects it and then he is presented a screen with a calendar where he can select a time slot that would be suitable for him. After that, there is a next decision point, in case that none of dates fit the needs of the potential customer, he returns back to the search results and tries to find another groomer. In case that the available timeslots meet the needs of the user, then he chooses to make an appointment, after which he has to add his payment details. Once the payment details have been entered, two checks are made in the background of the application, firstly the validity of the payments details is checked and secondly the funds on the account are checked. In case that one of these checks fails, the user is returned back to the payment details screen; otherwise, he is presented with a confirmation with the contact details of the groomer. At this point, the user journey ends and the user has to wait for the confirmation of the appointment.

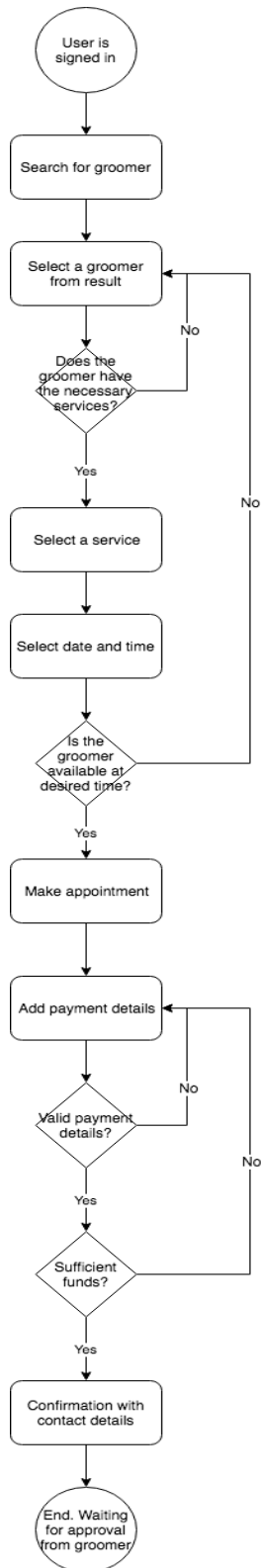


Image 7: Service booking user flow, Source: Author

4.3.4.2 Wireframes

In order to have a better understanding of the look and feel of the service high-level wireframes have been created for the two main pages.

The first wireframe, which is illustrated in Image 8, represents a list page, which is the search results page. On the left side, the filter options are displayed, where the user can filter the results according to different criteria, such as rating, number of reviews, experience, etc. In the middle of the page the search results are presented, the search returns the picture, name, experience, rating and distance in the title and subtitle. The body part of each item contain the description of the specific service provider. On the top right part of the page, the sorting option is displayed and bellow it the space is reserved for advertisement banners.

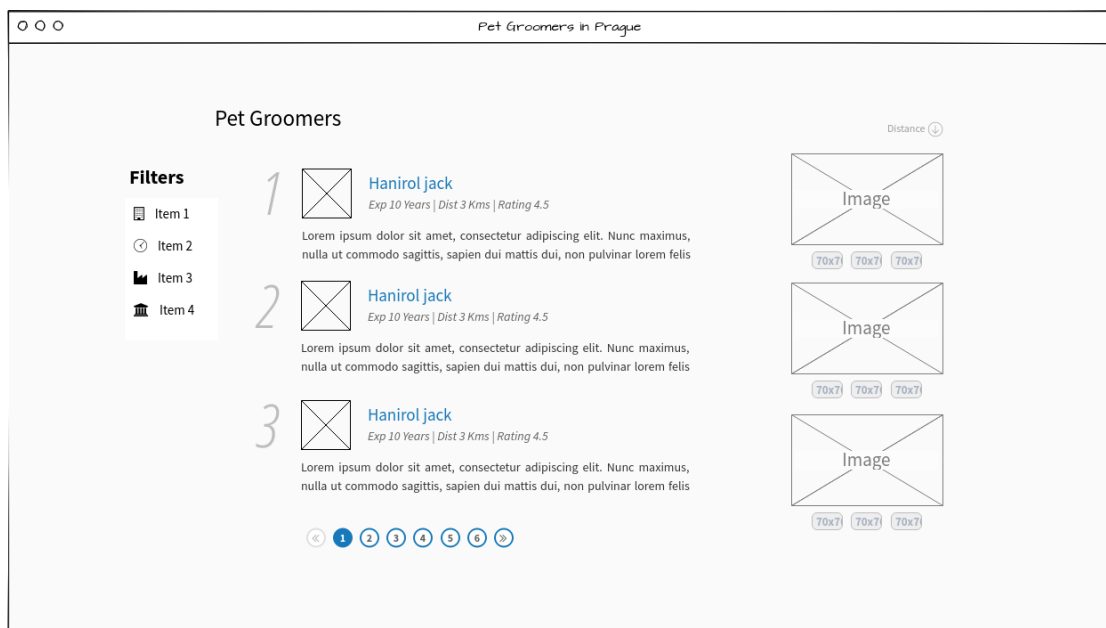


Image 8: List page wireframes, Source: Author

The second screen, presented in Image 9 represents a groomer profile page. On the left side a gallery with the images of the groomer is displayed with the groomer description presented bellow it. In the middle of the page additional information about the pet groomer can be seen, also the services are presented with the specific prices, and bellow it there is a carousel item, which shows the reviews of the users.

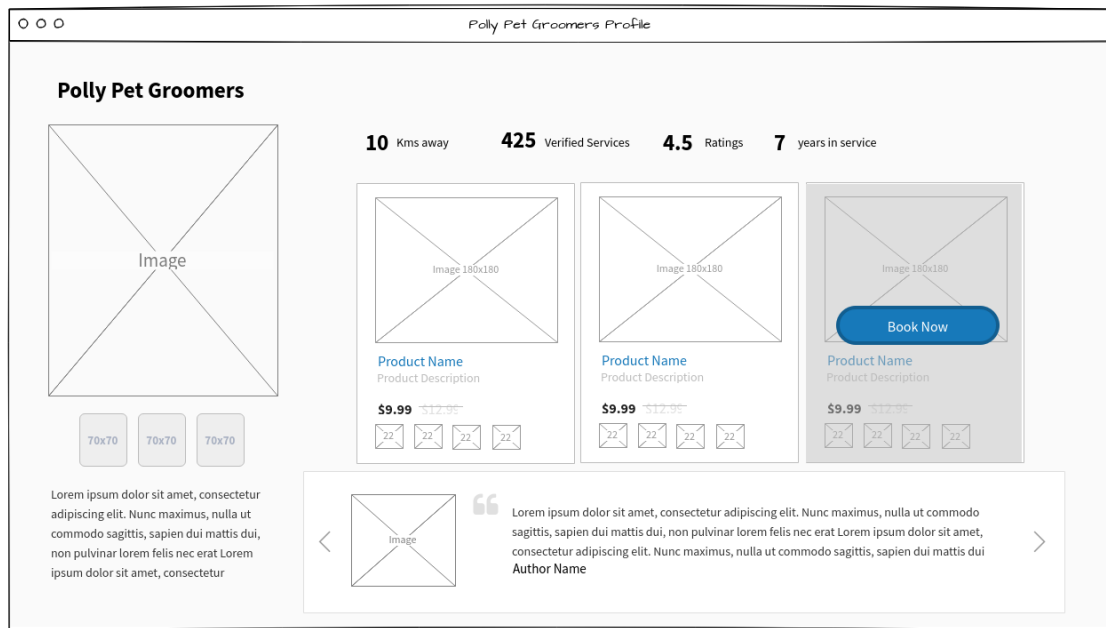


Image 9: Profile page wireframe, Source: Author

4.4 Branding

During the previous chapters, a good understanding of the product and its main features has been created, allowing defining the vision and mission of the business. The vision of the company is to have all pets treated with care and love as family members; this is the main high-level goal of the business. This supports the company's purpose of existence to make the world friendlier towards animals and should always be kept in mind when making any strategic decisions. From the other hand, the mission of the company is to have the largest pet servicing brand in the Czech Republic, to become the "Airbnb" in the pet services industry. The company's mission will come in hand and should be referenced to when defining the KPIs and business goals for the future.

Keeping in mind the company's vision and mission, but also the services offered the following brand name was chosen Pawfection. This word has resulted by combining the word Paw, which is usually associated with pets and the words perfection and affection. Perfection represents the looks of the pet after they are groomed; from the other hand affection represents our defined vision, the love towards the four-legged friends.

4.5 Planning

4.5.1 Roadmap

This chapter describes the approach to project management and the pre-launch roadmap. The pre-launch development of the application will use the agile software development methodology; specifically SCRUM with 4 weeks-long sprints. The main goal of each sprint is to deliver one or multiple full-working features and several features would take longer than 2 weeks.



Figure 11: Pre-launch roadmap, Source: Author

Figure 11 illustrates the proposed pre-launch roadmap. The first sprint is called Pluto and is a Sprint Zero. This sprint will start once the full team is assembled and everyone is introduced to the project. For the technical development team, the main purpose of Sprint 0 is to conduct investigations around the technical solutions and to provide the architecture of the whole service. From a quality assurance perspective, the main focus for Sprint0 is to participate in the requirement definition together with the Product Manager and the user experience designer in order to elaborate a high level testing plan for the specific features. The main goal of the user experience designer will be to create wireframes and designs for the features that will be in sprint Mercury – Sign in/Sign up and Groomer profile. Product Manager’s main focus will be to elaborate detailed user stories for Sign In/Sign Up and Groomer Profile and to hold a backlog grooming session in order to introduce the feature to the development team.

Mercury is the first actual development sprint. The development team will be focusing on delivering the Sign In/Sign Up and Groomer Profile epic, the quality engineer will be testing the features once they are done from development perspective, thus finding bugs early in the development phase. During the first half of the sprint the UX designer together with the PM will focus on elaborating the requirements of the items that should be picked up in the next sprint: Search and Location Detection, once the requirements are elaborated, the focus will transition to introducing the features to the other teams.

During Venus, the third sprint the pattern will follow, development team will focus on the requirements that were defined during the previous sprint and will be introduced to the upcoming features in the next sprint. The PM and UX will prepare the set of requirements for the next sprint – Booking and Payments and introduce them to the wider team, which will then be developed during the Earth sprint. Due to the complexity and need of integration of 3rd party services for payments, there is a risk that this feature might extend a bit into next sprint, Mars, which will be shorter only two weeks, and the only deliverable of this sprint from a development perspective is the ratings feature.

During the whole development cycle, all SCRUM ceremonies will be followed:

- **Daily Stand-ups** will be held every morning, where everyone shares updates and where all the blockers and possible risks are raised. Daily stand-ups will be held from 11:00 till 11:10.
- **Retrospective and sprint planning** will be held on the first day of every sprint. During the sprint retrospective, the team will analyze what were the strong points and the accomplishments of the previous sprint and will reflect on what did not go well and can be further improved. After the retrospective the sprint planning will occur, during meeting the PM will prioritize the work for the next sprint and will move the user stories to the sprint backlog.
- On the first day of the third week of each sprint, a **Backlog Grooming** session will be booked. The main purpose of this ceremony is to introduce the development and quality

assurance teams to the upcoming features of the next sprint. The desired outcome of the meeting is to have the complexity of the requirements sized and to have all the possible technical risks and concerns raised.

- On the last day of the sprint, a **Sprint Demo** of the work that has been done will be held. The goal of this meeting is to present to the wider team the working solution.

Due to the fact that by nature startups are short on budget at early stages, the role of the Scrum Master will be covered by the PM, who will be the owner of the Daily Stand-ups, Retrospectives, Sprint Planning and Backlog Grooming meetings. The Sprint Demo will be owned by the development lead, who will also be the presenter.

4.5.2 Pre-launch Cost Structure

Based on the above mentioned roadmap and on the author's personal experience in software development project, the following decision on pre-launch staffing has been made:

- One senior full-stack developer that will also act as a team lead.
- One junior full-stack developer that will be able to pick up tasks that are more trivial and will be supporting the team leader when needed.
- One QA engineer who will assure that the business logic of the service is working as expected and that the product is bug-free.
- One UX designer that will work closely with the product manager in defining the user experience and that will have the sufficient knowledge to prepare the visual designs.
- One PM, who will also cover the role of Scrum Master and who is the owner of the company.

Role	MD Rate (in CZK)	Allocation (in %)	MDs	Total Cost (in CZK)
Senior Full-stack developer	8 000	100%	100	800 000
Junior Full-stack developer	5 000	100%	100	500 000
QA engineer	7 000	100%	100	700 000
UX Designer	8 000	80%	80	640 000
Product Manager		100%	100	0
Total labor effort			480	2 640 000
Contingency (15%)				396 000
Total labor cost estimation				3 036 000

Figure 12: Personnel estimated costs for launch, Source: Author

Figure 12 represents the estimated staffing costs for launching the project; the monthly rates are based on the author's personal experience and knowledge. The work will be outsourced and the personnel will be hired remotely outside the Czech Republic in order to minimize the initial costs.

The total labor effort is estimated at 480MDs with the total cost at 2 640 000 CZK. A contingency of 15% has been selected, resulting in a total labor cost for the initial product development estimated at 3 036 000 CZK.

4.5.3 Five Years Revenue Forecast

Figure 13 illustrates the forecasted revenues for the first five years. The forecasts were made based on the research results from the previous chapters and on the personal assumptions of the author. These numbers are going to be used in defining the goals and main KPIs of the business. A total addressable market of 4.4 million has been selected; this represents the total number of cats and dogs in Czech Republic.

Revenue forecast (in CZK)					
Item	Year 1	Year 2	Year 3	Year 4	Year 5
Share (% of total pet owners)	0,25%	0,50%	1,00%	2,00%	3,50%
Amount of serviced pets	11 000	22 000	44 000	88 000	154 000
Number of transactions	2	3	3	4	4
Average transaction growth	1,00	1,02	1,04	1,06	1,08
Average transaction cost	500	510	530	562	607
Expected revenue forecast	1 100 000	3 366 000	7 001 280	19 790 285	37 403 638
Total 5 year revenue forecast					68 661 203

Figure 13: Revenue forecast, Source: Author

The first row represents the share of total addressable market, in the first year a total market share of 0.25% is expected with a total amount 11 000 users registered, the market share of 0.25% has been chosen due to the fact that the first 5 months will be spent on product development, resulting in no registered users. Based on the questionnaire that was previously described, an average transaction cost of 500 CZK has been chosen with each user making an average of 2 transactions per year. Keeping in mind the 10% revenue from each transaction, an amount of 1 100 000 CZK has been predicted for the first year.

In year two, a 100% growth of the user base is expected, resulting a total market share of 0.5% or 22000 serviced pets. The number of transactions is also expected to grow, as the users should find the service useful and start using it more often, also the service will introduce new features that would increase the amount of transactions per user, resulting in an average of 3 transactions per year. Keeping in mind the inflation and other economical factors, a 2% cost growth is forecasted, resulting in the average transaction cost to grow to 510 CZK. The total revenue for year 2 is predicted to be 3 366 000 CZK.

The forecast for year 3 is again a 100% growth of the user base, due to the increased popularity of the service, the new provided services and the word-of-mouth. A total amount of 88 000 users is expected by the end of the year. The amount of transactions forecasted for this period will remain at the 3 transactions per user mark, with a total transaction cost of 530 CZK. The total forecasted revenue for this period is 7 001 280 CZK.

The growth of 100% per year will also continue in year 4, increasing the amount of serviced pets to 88 000 and the total market share of 2.00%. Due to the natural development and addition of new features, an increase in the number of transactions per user is also forecasted, resulting in 4 transactions per user per year. The average transaction cost for year 4 is expected to be 562 CZK, resulting in a total expected revenue of 19 790 285 CZK.

Due to the increased market share, the growth in year 5 is predicted to reduce, a 50% growth is forecasted, resulting in 132 000 serviced pets. The number of transactions is expected to remain the same, at 4 transactions per user and the average transaction cost is expected to grow at 607 CZK. As a result of these numbers, a revenue of 32 060 261 CZK is expected for year 5.

4.5.4 Five Years Cost Forecast

This sub-chapter presents the high-level costs for the first five years, which can be seen in Figure 14. The values used in the table are estimations based on the personal experience and knowledge of the author.

Cost forecast (in CZK)					
Cost position	Year 1	Year 2	Year 3	Year 4	Year 5
Project implementation	3 036 000				
Features development		500 000	700 000	700 000	900 000
Maintenance	1 460 000	3 537 200	5 112 000	6 235 600	8 304 800
Thereof Wages	1 260 000	3 427 200	4 992 000	6 105 600	8 164 800
Thereof Hardware	150 000	50 000	50 000	50 000	50 000
Thereof Software	50 000	60 000	70 000	80 000	90 000
Thereof Third Party Services	25 000	32 000	40 000	48 000	56 000
Contingency (20%)	899 200	807 440	1 162 400	1 387 120	1 840 960
Totals	5 420 200	4 876 640	7 014 400	8 370 720	11 101 760
Total 5 year cost forecast					36 783 720

Figure 14: Cost forecast, Source: Author

The cost structure is divided into 4 main categories:

- Project Implementation
- Features development
- Maintenance
- Contingency

The Project implementation costs, which were described in more details in chapter 4.5.2 are valid only for the first 5 months and consist of 3 036 000 CZK. These are the costs needed to launch the first version of the product to the market.

The Features development cost represent the additional staffing cost required for the implementation of new features, this would include additional costs for designs, wireframes and other development-related items. For the second year, an estimation of 500 000 CZK for features development has been made. During year 3 and year 4 this number is expected to increase to 700 000 CZK per year, due to the company growing and the increase in complexity of the new features. For year 5 another increase is expected, resulting in a total of 900 000 CZK forecasted costs strictly for feature development.

The next category of costs consists of maintenance costs, and is divided into 4 sub-categories. Wages costs, which are calculated at an average of 70 000 crowns per month per person, are of 1 260 000 CZK for the first year, the reason why this number is so low is because the first 5 months of the first year will be covered by the project implementation staffing costs. A total staff of 4 people is planned. For year 2 the amount of personnel will remain the same, and the total personnel costs will be of 3 427 200 CZK. In year 3 the average salary will increase by 10 000, resulting to an average of 80 000 CZK per month, also it is planned to hire one more person to the project, due to the increasing number of users. For year 4 the average salary will remain the same, but there will be the number of people hired will increase to 6, resulting in total wages costs of 6 105 600 CZK. Year 5 is expected to see an increase in both average salary and personnel, resulting in a staff consisting of 7 people with the average salary of 90 000 CZK, resulting in 8 164 800. During all the years an average prices growth of 2% is considered.

The second subcategory of the maintenance cost represents hardware costs, which are expected to be of 150 000 CZK for the first year, due to the launch of the project. After the first year the hardware costs are expected to stay the same, at 50 000 CZK per year.

The third subcategory is showing the expected software costs, which will be of 50 000 CZK for the first year and will see an increase of 10 000 CZK per year, due to an increasing number of personnel and user-base.

The last subcategory of the maintenance are the third party services, and these are mostly the hosting services. For the first year the third-party services costs will be 25 000 CZK, increasing by 8000 CZK each year due to the increase of user-base.

The last main costs category is the contingency, a 20% contingency has been selected, that would cover all the additional costs that were unplanned as well as the unexpected costs due to any errors, such as project delay, incidents and others.

4.5.5 Cashflow Simplified View

Cashflow simplified view (in CZK)					
Item	Year 1	Year 2	Year 3	Year 4	Year 5
Revenues	1 100 000	3 366 000	7 001 280	19 790 285	32 060 261
Cost	5 420 200	4 877 640	7 015 400	8 371 720	11 102 760
Totals	-4 320 200	-1 511 640	-14 120	11 418 565	20 957 501
Total 5 year cashflow forecast					26 530 106

Figure 15: Cashflow simplified view, Source: Author

Figure 15 represents the simplified cash flow view for the first five years. The numbers were calculated based on the forecasts described in the previous sub-chapters. As it is illustrated above, the first three years the business will be on the negative side in terms of profit, which would mean a loss. During the 4th and 5th year the company will start gaining profit, resulting in a total forecast of 26 530 106 CZK profit for the first years before taxes.

5 Conclusion

This thesis confirms the hypothesis that has been made in the introduction part that states the following “with the help of a well-designed and well-described set product management best practices, it is possible to evolve a problem hypothesis into a working product that has a strong value proposition and that has its place to be on the market”. This hypothesis has been confirmed and demonstrated on the example of a potential business idea called Pawfection.

The first step was the identification of a potential, unaddressed market, in this specific case – the pet owners market. Based on primary research, the author was able to find that there is a potential market of 4.4 million pet owners in Czech Republic. As a pet owner himself, the author thought about possible problems that occur in the day-to-day life. The problem hypothesis that the author came up with was that making an appointment to a pet groomer is a painful process and that there is a market opportunity to profit from. In order to be able to proceed further, the author also analyzed the possible high-level solutions to this problem by using the Zoom in, Zoom out, Zoom in method and then chose the most suitable one.

Once the problem hypothesis and the high-level solution were identified, the author moved on to the definition of the product-market fit. The first step into defining the product-market fit was the definition of the consumer segment and their underserved needs. A survey has been created in order to validate the problem hypothesis and to understand better what is the consumer behavior. As a result of the survey the problem hypothesis was validated, 90% of the respondents use professional pet grooming services and only around 20% of them consider the process of finding a pet groomer that offers a high level of services very easy, which means that for 80% of the respondents there is space for improvement in this process. Also the survey helped to have a better understanding about the spending of the pet owners for pet grooming services and their criteria of choosing a groomer. As an outcome of the consumer segment and underserved needs analysis the problem statement canvas and the personas were created, these two artifacts should help both the product manager and the wider team to have a good understanding of the customer segment that the product addresses. After defining the market fit, the author started to look into the product fit by defining the value proposition of the product. Two main tools were used to define the value proposition – value proposition canvas and business model canvas. As an outcome of this chapter, the business model was created and the main driver of the product, the value proposition was defined, allowing to move to the next step and define the MVP feature set. In order to define the MVP feature set, an extended set of features that support the value proposition were created and then a prioritization exercise was conducted with respondents. The main outcome of the prioritization exercise was a clear overview of what features have to go for MVP. Once the features were defined, the author created a story map with high level user stories that were describing the main requirements for MVP. The user stories will then be used in the implementation phase of the product. The last layer of the product market fit is the UX, in this part the author defined the user flows for the main actions that consumers would perform while using the service, and then based on the user flows the author created wireframes. The main purpose of the wireframes is to provide a visual understanding of the feature to the team before the feature goes into actual development.

Another use of wireframes is the user tests that can be conducted before the product goes into actual development in order to confirm that the user experience is intuitive.

Once the product-market fit was well-defined, and the MVP of the product was scoped, the author defined the company as a whole. The branding chapter defines the main vision and mission of the company, as well as the company name. The vision stated here is on a very high-level, thus allowing addition of further services to the application in the and allowing to transform it into a platform where pet owners can find anything related to their pets.

The last chapter of the thesis touches the project management aspect and the implementation details. In this chapter the pre-launch roadmap was created and the development method was chosen. Based on the roadmap initial cost estimations for launch were made, resulting in forecasted implementation costs of 3 036 000 CZK for staffing. The last subchapters of the thesis refer to costs and revenue forecasts, and the main reason for this is to understand whether this product has business potential and is able to bring revenue. The results were positive; the total cash flow was estimated at an amount of 26 530 106 CZK for the first five years. The numbers used in the forecasts were derived from the survey results and from assumptions.

Taking into consideration the above mentioned information, the thesis hypothesis can be considered validated. With the help of the set of product management best practices, the author was able to design a product that has a potential of 26 530 106 CZK cash flow for the first five years and that will reach breakeven point in terms of Costs and Loss in less than 4 years. All the results of the practical part have brought confidence to the author, and the author will continue to develop this idea and will try to get this product released to the market. As further steps the author plans to prepare an investor's presentation and try to find an investor to help finance the project. As another option, the author is thinking of gathering a team of people that would want to work for shares of the company that will be formed in future. The author also believes that this idea shouldn't be limited only to pet grooming services and that after launch the application should be developed further, by introducing new services such as pet sitters, pet trainers, veterinaries, etc. The long term-plan of the author, as stated in the mission of the company is to become the biggest pet service app in Czech Republic.

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