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DEVELOPING A BUSINESS PLAN FOR A START-UP COMPANY, WHICH PREPARES TO REACH THE INTERNATIONAL EDUCATIONAL MARKETS

Case Study

# DEVELOPING A BUSINESS PLAN FOR A START-UP COMPANY, WHICH PREPARES TO REACH THE INTERNATIONAL EDUCATIONAL MARKETS Case Study

Maiju Oikarinen Thesis Spring 2020 Degree Programme in International Business Oulu University of Applied Sciences

#### **ABSTRACT**

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reach the international educational markets

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The commissioner of this thesis is a start-up company, which is aiming for international education markets. The first aim of this thesis is to construct a preliminary business plan for the case company, as they do not currently have one. The second aim of this thesis is to provide theoretical background, which will help the company to develop their business by offering relevant information for their business functions.

This thesis consists of two parts, the theoretical background and the created business plan. The research of this thesis was qualitative and the data collected was mainly secondary. Primary data was collected by interviewing the owner of the case company in order to develop the business plan. The main research topics were how to develop a business plan, what are the special features of exporting business plan and a start-up business plan. And how a company should prepare for education export. All of these aspects were then taken into consideration when developing and analyzing the preliminary business plan of the case company.

The research result showed that developing a business plan is beneficial for a start-up company and that there are various aspects, which companies have to consider before they start exporting. Export, especially education export is a complex process compared to establishing a domestic business. Exporting abroad adds a level of political, cultural and legal aspects that have to be considered in every element of the business, for example in terms of marketing and methods of payment.

This thesis provides information about the main contents that are found most commonly in a business plan. It also defines the special features of a exporting business plan and a start-up business plan as well as how to prepare for education export. The subjects addressed in developing a business plan can also be used when defining what companies should take in to account when operating a business.

Keywords: business plan, exporting, education export, start-up company

#### TIIVISTELMÄ

Oulun ammattikorkeakoulu Degree Programme in International Business

Tekijä(t): Maiju Oikarinen

Opinnäytetyön nimi: Liiketoimintasuunnitelman kehittäminen startup-yritykselle, joka valmistautuu

koulutusviennin aloittamiseen Työn ohjaaja: Sinikka Suutari

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Opinnäytetyön toimeksiantaja on startup-yritys, joka pyrkii kansainvälisille koulutusmarkkinoille. Opinnäytetyön tavoitteena on tehdä alustava liiketoimintasuunnitelma toimeksiantajalle, sillä yrityksellä ei vielä ole kyseistä suunnitelmaa. Opinnäytetyön toisena tavoitteena on luoda teoriapohja, joka auttaa yritystä kehittämään liiketoimintaansa sisältämällä yrityksen liiketoiminnalle tarpeellista tietoa.

Tämä opinnäytetyö koostuu kahdesta osasta; teoreettisesta taustasta ja luodusta liiketoimintasuunnitelmasta. Opinnäytetyö toteutettiin laadullisena tutkimuksena ja kerätty tieto oli pääosin toissijaista. Ensisijaista tietoa kerättiin liiketoimintasuunnitelman kehittämistä varten haastattelemalla toimeksiantajayrityksen omistajaa. Tärkeimmät tutkimusaiheet olivat liiketoimintasuunnitelman kehittäminen, viennin ja startup-yrityksen liiketoimintasuunnitelman erityispiirteet sekä yrityksen valmistautuminen koulutusvientiin. Kaikki nämä tutkimusaiheet otettiin huomioon liiketoimintasuunnitelman kehittämisessä.

Tutkimus osoitti, että liiketoimintasuunnitelman kehittäminen hyödyttää start-up yrityksiä monilla tavoilla ja liiketoimintasuunnitelman tekeminen on tärkeää. Tutkimus osoitti myös sen, että viennin liiketoimintasuunnitelmassa tulee huomioida useita eri asioita ja varsinkin koulutusvienti on erityisen monimutkainen prosessi verrattuna liiketoiminnan aloittamiseen kotimaan markkinoilla. Vienti ulkomaille lisää poliittisia, kulttuurisia ja oikeudellisia riskejä, jotka on otettava huomioon liiketoiminnan monilla eri osa-alueilla esimerkiksi markkinoinnin, tuotteen lokalisoinnin ja maksutapojen suhteen.

Opinnäytetyö tarjoaa tietoa liiketoimintasuunnitelman yleisimmistä sisällöistä. Se määrittelee myös viennin ja startup-yrityksen liiketoimintasuunnitelman erityispiirteet ja sen, kuinka yrityksen tulisi valmistautua koulutusvientiin. Liiketoimintasuunnitelman laatimisessa käsiteltäviä aiheita voidaan käyttää myös määriteltäessä, mitä asioita yritysten tulee ottaa huomioon liiketoiminnan harjoittamisessa.

Asiasanat: liiketoimintasuunnitelma, vienti, koulutusvienti, startup-vritys

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#### 1 INTRODUCTION

The subject of this thesis was found when the author saw an announcement that students were searched for making theses about education export. As the subject sounded interesting in the authors mind, she contacted the person who had left the announcement. The more information the author got from education export, the more interested she became and wanted to take on with the subject. The subject was found trough PINO Network, which is a project that builds networks to support the growth and internationalization of education export in Northern Ostrobothnia. The commissioner of this thesis is one of the many companies that are a part of PINO Network. During the thesis process the author also gained a great experience, as she was asked to be a volunteer to help at the Artic Education Forum that was organized by PINO Network.

The aim in this thesis is to research how a business plan is developed and the special features of exporting business plan and a start-up business plan. In addition to these the aim is also to research how to prepare for educational export and develop a preliminary business plan for the case company. The commissioner of this thesis is a Finnish start-up company that works in the IT-field and their goal is to reach the international education markets.

#### 1.1 Commissioner

The commissioner of this thesis is SIMUA, which is a start-up company located in Oulu. The company is specialized in education technology, teaching of robotics, programming and Artificial Intelligence. The product of the company consists of three components, which complement each other. It includes Alvin A.I an artificial intelligence assistant, a robot that students can program and control with Alvin and teaching materials in the form of textbook and exercise book for teaching programming and fundamentals of artificial intelligence for students' from ages 11 to 18. The product of the company is still under development and there are no hired employees currently working at the company yet.

As the company is a start-up company they are still lacking skills in areas such as marketing and business management and the current skills of the company are focused on developing the product further, such as skills in programming and artificial intelligence. Therefore the

commissioner wishes to gain theory and practical instructions for subjects, such as how to develop a business plan and what are the things to consider before entering international markets, as the company's goal is to reach the international education markets. This thesis will provide relevant information about exporting in order to help the company to take important matters into account before starting to export. As the company does not have a business plan they will get a preliminary business plan, which they can develop further. With the help of this thesis the company can create a business plan and with that they will be able evaluate the profitability, risks and opportunities of the business as well as what would be the right steps to take in order to be successful.

#### 1.2 Educational Export

Finland is known worldwide, for its high quality educational system, and the Finnish primary school system has been ranked number one in the world out of 138 nations, and its higher educations system as number one in Europe by The World Economic Forum in its 2016-2017 Global Competitiveness Report. So it is no wonder that the government has also stated that Finland should sell its remarkable educational innovations abroad. The government of Finland also sped up the opportunities of educational export during 2015-2019 and set goals to grow the sales of educational export. The Board of Education is coordinating the Education Finland - growth program, which is funded by the Ministry of Education and Culture. (Opetus & Kulttuuriministeriö, cited 27.03.2020.)

According to Schatz the term "educational export" has not yet been clearly defined, but in Finland it is generally used when talking about selling educational equipment or knowledge to other countries or when selling Finnish education know-how, programs and degrees to other countries. Teachers visiting Finnish schools from abroad or exchange students are also considered to be educational export even though it is happening in Finland. This is because the educational expertise gained from Finland will leave the country in form of visiting teachers or foreign degree or exchange students back to their home countries. (2016, cited 4.3.2020.) In this thesis the subject of how to prepare for education export was researched, as the case company is aiming for the educational markets.

#### 1.3 Research

#### **Research aim and Questions**

In this thesis there are two main aims, the first one is to create a preliminary business plan for the case company, which they can develop in the future as the company grows. To support the actions of the company's future the company will receive the whole thesis to work as a guide as they wish to gain theory and practical instructions. Therefore the second aim is to construct a theoretical background, which provides useful information and theory for the case company. This information consists of subject such as developing the business plan for different purposes, how the company could make an export business plan and how they should prepare for educational exporting. Through the subjects that are addressed in developing a business plan the company will gain information about the relevant matters that should be taken into account when operating a business, as the questions to which a business plan answers are the questions that companies should be able to answer in order to have a functional business.

- Q1. How creating a business plan can benefit a start-up company?
- Q2. How to take exporting in to consideration when developing a business plan?

#### **Focus and Limitations**

Since there is no scientifically defined one specific and correct way to create or structure a business plan, there is no ultimate certainty that this thesis addresses the best way to create a business plan. It is more focused on what it most commonly includes. The information in this thesis is based on the concepts that are most often and commonly found from various sources. When it comes to developing a business plan, there are differing opinions and studies presented about the issue that is it important or reasonable to create a business plan. This thesis was made from the perspective that creating a business plan is important and reasonable so the focus of this thesis was directed to that perspective and the subject of why business plan should not be created was not addressed.

#### Structure of the study

First part of this thesis gives the theoretical background for the development task. It includes defining what a business plan is, why is it needed and what are the contents of it. It will provide detailed information about what the different contents include and what are the special features of

two different types of business plan. It also covers the issue of how a company should prepare for education export. After the chapter of developing a business plan, the research methods used in this research are introduced and after that the actual results and conclusions obtained from this research are expressed. The results will answer the set research questions and the description of the done development task, which was developing the business plan. In the conclusions the developed business plan is analyzed by reflecting it to the information gained from the literature review. The final discussion part will include information about the research process as well suggestion for the commissioner of the thesis. The developed business plan and the interview questions are included in the appendices.

#### 2 DEVELOPING A BUSINESS PLAN

This chapter provides the theoretical background for the development task of this thesis. It addresses the questions "what is a business plan?" "why is it needed?" and explains what are the contents that are usually found in a business plan. The special features of two different types of business plan that are relevant for the commissioner are also elaborated, as well as the subject of how to prepare for education export. Some of the subjects addressed are explained more in detail as the commissioner of this thesis wishes to gain theory and instructions. Therefore the purpose of this chapter is to provide more information than it would if it was constructed to work only as a theoretical background for the development task.

#### 2.1 What is a Business Plan and Why is it Needed?

Business plan refers to a written document that includes information and the plan of a business to achieve its goal. The plan will work as a guideline for starting businesses and describes how the business idea will come to life in practice. It describes the current situation of the company in terms of what the product or service is, how the company is operating, the customer groups, the possible competition and the expertise and amount of working staff. It also includes a financial statement, the contents of which may vary depending on the state of the business. For an older company it can include for example income statement and balance sheet, and for a start-up company forecasted revenues and the amount of financing needed to get the business running. It also states the short- and long-term goals of the company. (Suomen uusyrityskeskukset ry 2020, cited 27.03.2020; Nordea, cited 19.2.2020.)

A business plan explains the nature of the business, its targets and markets and the key competitive advantages, which will differentiate it from the competitors. It also describes the resources and skills that are found in the company and the operations of it, as well as financial resources and needs. The fundamental questions that business plan answers are "Where are we now?" "Where do we want to get to?" and "How are we going to get there?"(Guţă 2014, cited 12.2.2020; Greene & Hopp 2017, cited 4.4.2020.)

When writing a business plan, the entrepreneur has to do research about the market, industry, environment, geographic and about the competition on the desired market and critically and realistically evaluate the current situation of the company. Also as there are various types and audiences for a business plan, it is important to think about to whom this business plan is written for, is it internal or external, for investors or just for the entrepreneur him/herself to keep on track. (Williams 2012, chapter 1.) The objectives of a business plan might be for example for it to be an official expression of the planning process, an application for funding, a framework for approval or a tool for operational business management (Stutely 2011, chapter 1). Since the plan works as a guideline for reaching different goals, it should be modified over time to reflect the current situation of the business and be used as a helpful tool to achieve new goals of the business as it develops. Companies can also evaluate their success by comparing what is achieved to the done business plan. However there is no need to follow the business plan strictly one hundred per cent. Situations change and it is reasonable to be flexible and adjust the actions accordingly (Nordea 2020, cited 29.2.2020; Suomen uusyrityskeskukset ry 2020, cited 27.03.2020).

Business plans commonly include the same aspects and information, but there are few different aspects to consider depending on the nature of the business (Williams 2012, chapter 1). In this thesis the special features to consider, in addition to the subjects that are addressed in the contents of a business plan, will be described for two different types of plans. These two different plans are a business plan for exporting and a business plan for a start up company, as they are both relevant to the case company. In this thesis the business plan developed will mostly be focused on the viewpoint of developing a business plan for a start-up company. As for reaching further goals of the company, information about developing a business plan for exporting is relevant and therefore addressed in this thesis, as the case company will receive the whole thesis for further use to use as a guide.

Palo Alto Software founder Tim Berry conducted a survey where he asked thousands of its Business Plan Pro software users questions about their business goals and planning. 2887 people completed the survey and the results showed that those who had made business plans were nearly twice as likely able to successfully grow their businesses or obtain capital than those who did not write a plan. (Lesonsky 2016, cited 10.4.2020.) A business plan helps to improve the business concept, as the entrepreneur is able to perceive how changing certain parts of the plan may increase profits or to reach different goals. It increases the chances for success when the

entrepreneur is able to fine-tune the plans and business design before investing money for the execution of the plan. (McKeever 2011, 7.)

Business plan shows the opportunities and weak points or even possible failures the company may stumble into. As it may open the eyes of the entrepreneur and bring some realization about the business, it can make the entrepreneur improve the chances off success by allowing an exit to an unsuccessful project before entering the market. (Chwolka & Raith 2011, cited 12.3.2020.) This is why it is important and reasonable to create a business plan before fully going in to the business. Creating a business plan can also help start up companies to gather their ideas and help to choose, which is the right direction to take for achieving their goals. It is also difficult to gain investors or loans from a bank for a business without a proper business plan. With a well-done business plan companies are able to convince possible investors to come along even when there is no financial statements yet to be shown. (Suomen uusyrityskeskukset ry. 2020, cited 27.03.2020; Nordea 2020, cited 20.2.2020.) According to Greene & Hopp (2017, cited 4.4.2020) "A well-done plan builds legitimacy and confidence among investors that the entrepreneur is serious. It also reassures staff, suppliers, customers, and other key stakeholders."

Today business plans are being adjusted to the needs of the company, and there are no official or strict definitions to what it should include or how it should be documented. There are various models for business plans. However the same contents can usually be found in most of them, they may differ in order or naming, but the basic contents and the questions the plan answers remain similar. (Ernst & Young LLP 1997, cited 28.1.2020.) Below is listed one way of composing a business plan.

The business plan begins with a cover sheet, which includes the name and contact information of the company and the date of when the plan was made. After the cover sheet a clear table of contents follows where each main section is numbered. (Barrow 2009, chapter 5). An appendix can be added to the end of the business plan, if there is a need to add other relevant information such as pictures of products, resumes of key managers, market studies, patents or significant contracts (Ernst & Young LLP 1997, cited 28.1.2020.)

Executive summary provides a clear summary of the business, highlighting the key competences that will drive the company to success. It is the first part presented and the last part to be written, as it sums up the whole business plan. According to Guţă (2014, cited 12.2.2020) the summary

should express a meaningful business idea, a plan that clarifies the path to success, a capable management team, clearly defined markets, the key competitive advantages and a credible summary of financial forecasts and finally an attractive opportunity for investors to invest in a company that will be profitable. The purpose of the executive summary is to gain the readers interest to go trough the entire plan, especially as investors review hundreds of different business plans every year. They will not read further if the executive summary will not raise their interest. Therefore the executive summary has to provide useful information about the business and point out the chances for success, which will create value for the investors. (Ernst & Young LLP 1997, cited 28.1.2020.)

#### 2.2 The Company

In this section the subjects related directly to a company and its functions that are relevant in a business plan are described. These subjects are company description, description of the product and / or services, personnel management and business operations. These subjects provide a background for a business plan in terms of what is the company all about, what is the product or service, what is the employee situation and how does the business operate and also how all of these aspect should change in order to achieve the goals of the company.

Company description answers questions about the nature of the business shortly, such as in what field of business the company operates, what is its background, why and when the company was started, where it is located, and what is the legal entity form of the company. It states the purpose, mission and objective and the values or principles that the company follows. It also states the short and long-term goals of the company, what are the distinctive competencies that differs it from competitors and what is new about the business idea compared to competitors. It expresses why the company will succeed and what is the problem of the targeted customers that the company is trying to solve, and how it will solve it. These aspects are being addressed further in more detail in the other sections of the business plan. (Nordea 2020, cited 25.2.2020; Williams 2012, chapter 2.)

Entrepreneur Europe (2020, cited 13.3.2020) defines mission statement as "A sentence describing a company's function, markets and competitive advantages; a short written statement of your business goals and philosophies". In practice the mission statement is a short few

sentence statement that describes the reason for the existence of the company, the definition and scope of the business and its customers and the value that is offered to customers. The audience of the mission statement is basically everyone from the company's customers to its employees, suppliers and stakeholders. (Khalifa 2012, cited 13.3.2020; Williams 2012,chapter 2.) As the mission statement focuses more on the perspective of current situation, the vision statement paints the picture of the future of the business and indicates the ambitions and future goals of the company. For investors the vision statement is important, as the future of the business defines when they will get their money back. (Williams 2012,chapter 2.)

Description of the product and / or services states the company's value proposition -defining what the company does and what is its purpose to exist and how it adds value and benefit to customers (McAdam 2013,4). Provides a detailed demonstration of the product or service being sold, such as its features and benefits for the customers, what is unique about it and how it differs from competitors. Describing how the product or service solves the problem of the targeted customers, what it provides for them and why there is a need for the product or service in the market. (Barrow 2009, chapter 5.) Possible copyrights, patents and trade secrets may also be added or the existence of these mentioned. Description of the research and development activities, that are in process or to be conducted and the position of the product life cycle and the factors that can affect it. (Ernst & Young LLP 1997, cited 30.1.2020.)

The concept of product life cycle presents five stages, of which the product goes through from when it starts to be developed to the point it declines or is removed from the market. In short, these five stages are:

- Stage 1. Product development. In this stage a company starts to develop a new product idea. During this stage sales are zero and investment costs rise.
- Stage 2. Introduction. In this stage the product is first brought to the market, before there is a proven demand for it and the sales are low.
- Stage 3. Growth. If the new product satisfies the market, the demand begins to grow and the size of the market expands rapidly.
- Stage 4. Maturity. At this stage sales slow down, this might be due competition or lower demand or if the product sold is made to last long, which decreases the demand of old customers buying the product again. The duration of this stage is usually the longest one.

 Stage 5. Decline. Sales drop significantly and deteriorate. The product may be repositioned or reinvigorated in order to go back up the stages or it can be deleted from the markets.

However every product does not necessary follow all five stages of the product life cycle. Some products can decline rapidly after introduction and others may stay in the mature stage for hundreds of years. The concept of the product life cycle may be used for example as a useful framework in marketing for describing how products and markets works as well as creating marketing strategies for the different life cycle stages. By acknowledging and forecasting the product life cycle products can possibly be rescued from the decline stage and moved back to growth stage. (Kotler & Armstrong 2016, 306-310.)

#### **Personnel Management and Business Operations**

Depicting who is in charge of the business is there advisors or staff, what is the experience of the people involved in the company and their responsibilities and areas of expertise. What is the hierarchy in the company in terms of management and what is the legal structure of the company? Expressing what are the skills that the company still needs, for example technical knowledge, marketing skills or financial skills. Describing is there a need to hire staff in order to gain the needed expertise to the company or is there a need for outsourcing some activities. Making a realistic personal development plan for future. (Nordea 2020, cited 28.2.2020; Butler 2007, chapter 2.)

Illustrating the operational processes that are vital for the company on a daily basis to reach its goals. Such as how does the business operate, where is the office, is there working staff in the company, what are the production and service delivery procedures and capabilities, and the suppliers of production. Identifying how the operations of the company should change over the next 1-3 years in order to achieve success. When describing the operative side of business, every expense related to it is relevant, such as what insurances, bookkeeping and accounting systems are needed and how customer, supplier and employee records will be kept. (Nordea 2020,cited 30.3.2020; Barrow 2009, chapter 5.)

#### 2.3 Marketing

Market research reflects the entrepreneur's knowledge of the company's industry and is the analysis of the company's market research. Convinces that the company has knowledge and a research base of the market it is entering. Summarizes what the entrepreneur has learned from his/hers marketplace and to whom the product or service is going to be marketed to. (Ernst & Young LLP 1997, cited 2.2.2020). Market analysis consists of the following objects addressed below.

#### **Industry Description**

Depicting the size, characteristics and customer groups of the company's primary industry from historical, present and from the future point of view. When assessing the size of the market the number of potential customers and the value of the market should be looked in to. It should also state that if the product or service is something that has been sold before and is there a need for the product or service in the market. Illustrating how the future of the product or service will look like in terms of will there be a need for it only for a short period of time or will it have demand in the future and what are the trends affecting it. (Ernst & Young LLP 1997, cited 2.2.2020.)

#### **Target Markets & Customer Segmentation**

Who are the customers the company is targeting in the desired market. What is the location of the market for example is it local in one city, in a whole country or is there intention to go global. To whom the product or service is sold, is it business to consumers, or business to businesses? To compete more effectively, companies target their markets towards certain customer groups, which are most likely to buy the products or services. (Kotler & Keller 2016, 267.) According to Kotler & Armstrong customers may be segmented for example in the following ways:

- Geographic segmentation: cities, nations, regions, neighborhoods, or population density.
- Demographic segmentation: age, life-cycle stage, gender, income, education, religion, generation, or ethnicity.
- Psychographic segmentation: social class, lifestyle, or personality.
- Behavioral: occasions, benefits, user status, usage rate, or loyalty status. (2016, 223.)

By segmenting the target customers marketing becomes more efficient as it is focused on appealing to certain customer groups, instead of everyone (Kotler & Keller 2016, 267).

#### Restrictions, Limitations & Competition

Stating the barriers that can affect the entry into the market, like cost, time or existing patents and trademarks or customer or governmental regulatory requirements or laws. Defining the direct and indirect competitors already existing in the same product line or service and market segment. Also expressing is there anticipation that many others are entering the same market soon. Representing what are the products or services that the competitors are selling, what is the quality and pricing compared to your company, are they better or worse. Expressing what are the key competitive advantages that will make the company more successful than the competitors. (Stutely 2011, chapter 5; Ernst & Young LLP 1997, cited 2.2.2020.) Kotler & Armstrong (2016, 242) describe competitive advantage as "an advantage over competitors gained by offering greater customer value, either by having lower prices or providing more benefits that justify higher prices."

#### Marketing and Sales Strategy

The common goal of marketing strategy is to increase sales and through sales to increase profits. Representing the overall marketing strategy and the short- and long-term initiatives of the company's marketing strategy. How the marketing of product or service is going to be promoted and through which channels to reach the targeted customers, which were defined in the market research. Describing how the customers will find the company online to keep in touch and gain customer service and what are the possible post sales support activities. Expressing how the sales objectives are achieved through marketing strategies and tactics. Describing sales as part of marketing in terms of who sells and how and where, face to face or in the Internet or in a physical store. Explaining the pricing strategy of the company and presenting sales revenue forecast - estimates of the future sales revenues and the budget for marketing and sales expenses. (McKeever 2011, 140; Nordea 2020, cited 28.2.2020.)

**Marketing Mix** (4P's) can be used as a tool when creating a marketing strategy. The definition of the marketing mix is to have a right product at the right time and the right price in the right place. When talking about the marketing mix, it is usually referred as 4P's: product, price, place and promotion:

- Product The goods or services and their features, name of the product, guarantees, novelty value and how the product or service differs from the competition.
- Price How much it costs for the customer in terms of money or other compensation.
- Place Where the product or service is being sold, in a concrete store, Internet, or both?

Promotion - All the channels via which the product or service is being sold, such as
advertising and communications at the point of sale, sales campaigns, and public
relations and word-of-mouth that is passed through customers.

As the 4P's concentrates on the seller's point of view, the 4 P's can also be illustrated through the four C's to take a look from the customer's viewpoint. Here listed below are the 4P's on the left and their equivalents to the four C's on the right.

- Product Customer solution.
- Price Customer cost.
- Place Convenience.
- Promotion Communication.

One concern regarding the 4P's is that it does not take the customer's viewpoint into account. Therefore as customer value and relationships are highly valued in this time it is reasonable to consider the 4C's first and then acknowledge them when creating the 4P's. (Kotler & Armstrong 2016, 78-79.)

#### 2.4 Risks and Opportunities

A good plan also shows the potential risks and weaknesses and the competition that the business faces, which may affect on the success of the business. Usually there is no success without taking any risks. By exploring the potential risks, the entrepreneur will be better prepared for them and able to manage them. (Suomen uusyrituskeskukset ry. 2019, cited 06.04.2020.) By analyzing the current situation of a starting business or an already working business it is reasonable to evaluate potential risks and opportunities, that are coming from both - inside and outside of the business. SWOT-analysis is a helpful and widely used tool for examining risks and opportunities and it helps companies to identify their challenges and possibilities when making a business plan. The name comes from a word combination of Strengths, Weaknesses, Opportunities and Threats as seen in figure 1. It has been created in the 1960s and it has been in use ever since. Creating a SWOT-analysis makes it easier to understand the competitive markets and how to develop the company's strengths, use the opportunities, eliminate the weaknesses and counter the threats. Like the whole business plan, SWOT-analysis should also be evaluated and updated regularly, since the business environment will develop, both internally and externally over time. (Nordea 2020, cited 28.03.2020; Schooley 2019, cited 21.2.2020.)

#### **Strengths**

Internal factors/ Positive influence For example good financial skills

#### Weaknesses

Internal factors/ Negative influence For example lack of marketing skills

## **SWOT**

#### **Opportunities**

External factors/ Positive influence For example existing customer base

#### **Threats**

External factors/ Negative influence For example strong competition

FIGURE 1. SWOT-analysis

#### **PESTLE**

As there are macroeconomic forces that companies cannot affect to but they affect companies it is reasonable to be prepared. These forces might harm the business and therefore developing possible solutions for managing the impacts of them is important. Some external influences can also be beneficial for companies and therefore they should be acknowledged in order to be able to use the opportunities that come from them. To make an analysis of the external influences of the operational environment of a company, PESTLE can be used as a helpful tool to keep up with and predict possible upcoming changes. It is one of the most widely used tool for analyzing external influences. PESTLE takes a look into six external factors: Political, Economic, Social, Technological, Legislative and Environmental. The influences of these factors may be either positive or negative, or both. The factors of PESTLE and examples of them are listed below:

- Political, subjects such as government policy on transport, unemployment, regional development and education and so on.
- Economic factors, such as lending policies, stock markets, exchange rate.
- Social influences and trends, forecasting which way the trends that are relevant to the
  company are heading and how they are currently impacting to the company's goods or
  services sold, for example does the increased awareness of environmental issues impact
  the company.

- Technological change, depicting the possible changes in technology, which may affect the business.
- Legislative changes, any forthcoming legal changes that can affect the business.
- Environmental, both legal and social issues around the environment. How the changes
  that are made towards environmental issues are affecting the business now, or in the
  future, such as reduction of exhaust emissions and reduction of packaging materials and
  tighter control of usage and disposal of toxic materials.

These factors should be thought from the perspective of individual organization, its particular geographical location and the market in which it operates so that the analysis provides relevant information. (Butler 2007, chapter 3; Williams 2012, chapter 3.)

#### 2.5 Financials

This is a Record of the financial dealings within the company, current or future funding and investments. Description of what investments will need to be funded and how expenses and earnings balance at the end of each month. A forecast of how the finances develop over time and calculations for example of financing statement, profitability and break-even point. The financial records and calculations depend on the current state of the business, in terms of which financial statements are available or existing, for example start-up companies usually do not have many financial records yet to be shown and the financials can conduct from funding needs, financing statement and forecasts. Stating the sources of funding, for example loans, investments or the entrepreneurs own money. (Nordea 2020, cited 28.2.2020; Suomen uusyrituskeskukset ry. 2019, cited 06.04.2020.) Below are listed a few different financial reports, which may be included when describing a company's financials.

Balance Sheet & Income Statement. Balance sheet shows the company's assets -how much it owns and debts -how much it owes at a specific point in time. The income statement shows how much money the company has made or lost over a specific time period. (Beltraide 2020 Export business plan guide, cited 28.2.2020.)

**Break-even Analysis**. The break-even analysis will help to determine the pricing of product or service, as it tells the break-even point: how much sales is needed to cover the costs (Beltraide 2020 Export business plan guide, cited 28.2.2020).

**Financing Statement**. Lists all the investments and purchases needed to start the business. Such as initial stock, the machinery needed for production, company registration fees and working capital for the first three months of operating the business, like rent, salaries and insurance. (Suomen uusyrituskeskukset ry. 2019, cited 06.04.2020.)

**Profitability Calculation**. Shows how many products need to be sold in order to make the business profitable. Indicates the volumes of sales that will cover all the variable and fixed costs without the business making any profit - the break-even point. Based on the calculation of the break-even point, the company will be able to calculate, which combination of sales volume, prices and costs will lead to the targeted result. (Suomen uusyrituskeskukset ry. 2019, cited 06.04.2020.)

**Sales Volume Calculation**. "In the sales calculation, the minimum invoiced sales target indicated by the profitability calculation can be apportioned among the various customer groups. This makes it easier to assess the importance of the customer relationships; any discounts and variable costs for products being sold shall be taken into account" (Suomen uusyrituskeskukset ry. 2019, cited 06.04.2020.)

#### 2.6 Business Plan for Exporting

This section addresses the question "what are the special features of an exporting business plan?" as the case company will start exporting in the future. The development of internalization and recent developments in technology have opened many possibilities for companies to expand their businesses abroad. " The world has become a smaller place. New transportation, shipping and communication technologies have made it easier for us to know the rest of the world, to travel, to buy and sell anywhere" (Kotler & Keller 2016, 38). As before writing any type of business plan, researching relevant information is important. When writing a business plan for exporting, the research takes a more global perspective, as the business plan for exporting should include a broad industry analysis from both a global point of view and from the viewpoint of the certain foreign markets that are targeted. (Sandler 2017, cited 26.3.2020.)

#### **Evaluate Your Business/ Situation Analysis**

The current state of the business should be evaluated realistically, from the domestic and international point of view of the businesses market potential. Stating what would be the company's mission and objectives to start exporting, and the long-term goals of it. How would the product or service differ from those that are available on the local market and which of the company's products or services have the best potential to exporting and why. (Sandler 2017, cited 26.3.2020; Beltraide 2020. Export Business Plan Guide, cited 2.3.2020.)

#### **Product & Services**

Defining is there a chance the country's climate or geography present logistical problems for sales or that the government helps or impedes the sales of the company's product or service. Is there a need to adjust the product or service to the targeted market in some way, such as changing the physical package, or change the serving practices and are the using conditions same in the international market as in the domestic markets. Is there a need for personal aftersales services and if so, can it be provided and how. Drawing up a logistics plan to explain how the product or service will be exported to the targeted country. (Delaney 2016, chapter 2.)

#### **Risks and Opportunities**

Expressing the potential risks of exporting, as doing business abroad adds a level of political, legal and commercial risks compared to domestic markets. The product or service being exported should reach the level of regulations of the targeted exporting country. Describing the possible tariffs, taxations, labeling standards and consumer protection rules and other barriers that may affect exporting, such as language, legal restrictions, logistical challenges and possible payment problems. Stating what are the benefits and opportunities in expanding markets. Conducting a SWOT-analysis of the targeted market. (Sandler 2017, cited 26.3.2020; Beltraide 2020 Export Business Plan Guide, cited 3.4.2020.)

#### Different entry modes for exporting

There are several options when choosing from different entry modes for exporting, expressing the chosen mode of entry. Shortly about the most common modes of entry:

- Direct exporting: the entrepreneur is exporting directly to the buying customer and is him/herself responsible for handling the logistics and payments.
- Indirect exporting: products or services are sold to an intermediary, who then sells the product or service to customers or indirectly to importing wholesalers.

- Collaborative sales: partnership or global strategic alliance.
- Joint venture: if two companies invest money to form a third jointly owned enterprise, that new enterprise is called joint venture.
- International franchising: typically involves a franchisor who grants a right for an
  individual or a company, the franchisee to run the business or sell a product or service
  under their business model.
- Establishing a foreign office or acquiring an existing company: in order to maintain good
  control of exports a company can establish a foreign branch office, subsidiary or joint
  venture, where local staff is hired to receive the imported goods (the company's exports)
  and then they distribute them to the customers in the target country. Company can also
  purchase a smaller already existing company, which already has the resources for the
  targeted market.
- Licensing: a contractual arrangement where the company offers some proprietary assets, for example trademark or a patent to a foreign company in order to gain royalty fees or other payments from the use of their assets.

There are several factors that should be considered when determining which mode of entry would be the most suitable one. What is the amount of recourses that the company has and how much control it wishes to have over the export ventures are few of the most important aspects that should be considered. (Delaney 2016, chapter 4.)

#### **Determine Capital Needs**

Detailed financial analysis related to exporting costs such as supplier, manufacturer, transportation, tariffs, taxes, shipping logistics and other related costs. Is there a need to hire more staff to increase production capacity or to handle marketing/sales or customer service abroad, or is there a need to buy more machinery or more facilities. What are the costs that relate to negotiating a deal, such as transportation and accommodation costs as usually larger deals require personal face-to-face meetings and may require multiple of them in order to gain trust. A differentiated sales forecast from the sales of the targeted country. (Delaney 2016, chapter 5.)

#### Marketing analysis and plan

As countries differ in many terms, such as legislation and culture it is important to create a separate marketing plan for each targeted country to avoid possible marketing mistakes, for example marketing in a way that is seen as culturally disrespectful. Understanding the culture will also help to understand the customers and their needs and wants. Depicting what is the best

target country to start exporting in to and why, and how the cultural factors are taken into consideration. Representing the competition in the targeted market, both domestic competitor exports and the local competition and also the countries that are exporting similar products or services to the target country. Describing the short and long-term goals, such as possible plans for testing the markets before going "all in". (Delaney 2016, chapter 2; Sandler 2017, cited 1.4.2020.)

Defining how to reach customers in different countries and what are the economic trends and the demographics of the country in terms of gender, age, location, income and population and who are the target customers and why they would buy the product or service. When exporting to other countries, providing a great global customer service is very important, defining how the customer service will be provided, as it might not be possible to do that in person. (Beltraide 2020. Export Business Plan Guide, cited 3.4.2020; Delaney 2019, cited 30.3.2020.)

#### Sales & Operations

Explaining the pricing strategy of the product or service, for example usually importers and exporters take a 10% to 15% mark up over cost, which is the price manufacturers, charge when buying a product from them, expressing how this will be taken into account. "However keep your pricing separate from logistic, because at some point you combine the two to determine a landed price per unit." (Delaney 2019, cited 30.3.2020.) Determine the methods of payment, how to make sure that the customers will pay, since they are abroad and harder to reach and what are the payment methods provided for the customers. Expressing how the business strategies are going to be supported through international operations, systems and organizational structures. How the product is made, and is there enough capacity to produce and deliver abroad and what is the current availability of resources -current production capacity analysis of the company. (Delaney 2016, chapter 2; Beltraide 2020. Export Business Plan Guide, cited 30.3.2020.)

#### 2.7 Preparing for Education Export

As internalization has developed also education has become an item to be productized and governments have started to see it as an opportunity to create new markets to export and strengthen their economy. This has started a process for supporting the marketing of education also in Finland where the government has set goals and strategies to increase Finnish education

export. The case company of this thesis is also aiming for educational export in the future as the company develops and therefore this subject of preparing for education export is addressed in this thesis and it focuses on exporting education from Finland. When a company or organization makes the strategic decision to go international there should be a reasonable export strategy and a working business model in order to success in education export. Relevant tools for companies and organizations are risk analysis and evaluation of potential customers and also the evaluation of the current situation. In a study made in Laurea University of Applied Sciences the key competences raised for achieving strategic goals of education export were things such as ethical skills & cultural knowledge, juridical expertise, business & negotiating skills, pedagogical skills, language skills, and the ability to acknowledge the needs of the customers as well as skills for budgeting, selling and marketing. (Vanhanen 2016, cited 24.4.2020.)

#### **Choosing The Right Market**

When planning to start education export, it is important to pay attention to the choosing of the target country or areas and make a thorough groundwork and assess the possible long-term effects of it. When defining the target country, it is useful to research earlier experiences from different areas and their special features and use already existing marketing and promotion strategies. Good sources for research are for example the Finnish embassies and the ambassadors of Team Finland Knowledge, which are working as subordinates of the embassies of different countries to support education export. Large international organizations such as OECD and the World Bank also provide information for education export. It is also wise to follow the education offering of the target country and information and education occasions related to the choosing of the target country. (Eksymä, Hokkanen, Ilvesviita, Jurkko, Kananen, Luukkonen, Niemi, Paloniemi, Ruohomäki, Suutari & Viherkari 2020; Delahunty, cited 24.4.2020.)

#### **Knowing The Markets**

The market knowledge and the marketing methods of the target country should be taken into account, as they vary and the same methods are not being used in every country. These can be subjects such as the use of social media and the different platforms that are used for it. It should be considered would it be reasonable to market the product yourself or would it be more efficient to get outside help, from someone who already knows the target markets. Even though we could think that the poorer the economical situation in a country is the more there is a need for education and for developing it. It should however be taken into account that is the target country able to offer sufficient compensation for the product in order to make the exporting reasonable.

However some areas might have growing potential, which should be counted in when thinking about the future. The nature of the deal for the target market should be considered, for example would it be reasonable to offer a cheaper option, which is provided for a shorter period for larger groups, or for a smaller group for a longer period. If the company is working under a project funding, the option for offering education export for longer period of time might be challenging when the funding is bound to a time-limited project. It is also important to understand that the buyer of the product or program might not be the same as the actual users or utilizers of them. (Eksymä et al. 2020.)

#### Localization

Another aspect that should be taken into account when determining the target market in the beginning of internalization is that which countries would be able to use the products/services as such for example in terms of language and content, and which products or services would be easy to adjust in terms of these to the targeted country (Delaney 2016, chapter 2). Usually localization is needed when going into the international markets. Aspects that can affect the need for modifying the product can be for example the laws and rules of the targeted country. Especially when exporting educational products or programs they have to meet the qualifications and regulations of the education of the target country. Being aware of the cultural aspects of the target country is important when localizing the products, as some contents, modes of operations and other aspects might be seen as disrespectful in other cultures, where as in domestic markets they might be completely normal. Developing the product with the buyer is a good way of assuring that it will meet the expectations of the customer and that it will meet the regulations of the targeted area. If the product is constructed in a way that it can be easily modified it reduces the costs and risks of getting the product to different markets. (Eksymä et al. 2020.)

#### Politics and Legislation

Even though there is an obvious need in the market for education export, it can be hard to sell the product or program, as the political situation, safety and solidity of the region affects on it. Especially when looking for a long-time partnership these aspects can affect cooperation tremendously. The legislation of the target country may restrict the operation of foreign businesses in their markets; in these situations partners are in an important position. When making the offer it is vital to determine precisely, which are the practical issues that the buyer is responsible for. The bureaucracy and different modes of operation can consume a lot of time and

resources, and therefore it is better that the buyer will take responsibility over these subjects and the exporter of education can concentrate more on creating content. (Eksymä et al. 2020.)

#### Selling

El Cheikh identified seven major steps of selling for Finnish educational export in a case study for productizing Finnish education export which where:

- 1. Knowing the core product
- 2. Meeting and discussing with the client
- 3. Identifying client's needs and wants
- 4. Pricing and negotiating
- 5. Customizing the core product
- 6. Delivering the product
- 7. Receiving payment (2015, cited 24.4.2020.)

This process should be acknowledged in order to get the right attitude and needed skills for completing this process. The right attitude is said to be being alert, humble, and entrepreneurial, hardworking and having the skills to be able to meet and network with people. Being capable to sell the products and close the deal in person as well as being able to deliver a compelling story or an elevator pitch is also important. (El Cheikh 2015, cited 24.4.2020.) Vanhanen described the subject of relationship based business cultures and their importance for education export. As many countries base their business on a so called relationship-based business culture, making a long term investment for constructing personal relationships with business partners, customers and other stakeholders involved in the purchasing process is important in order to achieve a strong position as an education exporter. For example Asia, South America and Africa are countries that run their businesses through this relationship-based culture. (2016, cited 24.4.2020.)

Building meaningful customer relationships and maintaining them takes time and resources. In order to create this kind of relationships it usually requires building trust, which is not build based on a few contacts. To build these relationships it is extremely important to get to know to the culture of the target country: what are the habits, business culture, history and the modern ways of the country in order to avoid incorrect use of old stereotypical customs. It is good to know for example, souvenir traditions, dress codes and greeting habits. By learning about the culture, mistakes such as being impolite or even disrespectful towards the customer can be avoided, as

habits that are seen as normal in Finland may be frowned upon somewhere else. (Eksymä et al. 2020.)

#### **Creating Contacts & Cooperation**

It is said that finding the right contacts and creating meaningful partnerships "is an absolute cornerstone of successful education export" (Vanhanen 2016, cited 24.4.2020.) Finnish exporters of education are usually too small to succeed in the international field of education export by themselves, therefore when starting education export it is wise to find suitable partners. A successful cooperation might bring benefits, such as sharing resources and know-how, decreasing risks, finding the right contacts, increase credibility and visibility and raise awareness of the company. Contacts may be found for example by participating in seminars and occasions, contacting Finnish representatives abroad, joining an organization or network of education export such as Worlddidac or Education Finland -growth program, and taking advantage of social media. Suitable partners may be found for example from academic institutions, companies or research institutes. There are also regional collaborations, which bring together multiple actors of the education field. Cooperation possibilities can be found from both, public and private sectors. (Eksymä et al. 2020.)

#### Contracts

Some products and their special qualities can create challenges. When exporting education or teaching to target groups in Finland or abroad, there must be the ability to commit for them. This commits the buyer and the exporter of products or services and therefore the activities of the exporter have to be in a level of being able to carry out as agreed. This differs from a product that is delivered on a one-time basis and should be recognized when writing the contract. In the preparatory phase of an education export project, the participants and their roles and the nature of the implemented project should be recognized. The common way to proceed in negotiations is to conclude a Memorandum of Understanding or a Letter of Intent. The purpose of these is to indicate the interest of both parties about negotiating from a specific topic, but they do not commit to executing anything. Another contract that is often used at the beginning or concluded in the Letter of Intent is a Non Disclosure Agreement or Confidentiality Agreement. (Eksymä et al. 2020.)

If the product or service does not require localization or customer specific customization or involving multiple service providers, it is possible to proceed directly to the trade agreement between the seller and the buyer. For this type of situation to quicken the process it is advisable for the seller to have an already existing standard contract and the general terms and conditions of the sale of the service. If more than one company or organization are responsible for executing the product or service together, the structure of the contract needs to be decided. Usually from the client point of view making one contract is usually the most desirable one as then the client is able to handle affairs with one contributor. (Eksymä et al. 2020.)

#### **Important Aspects of Education Export Contracts**

The contracts should include as precisely as possible the product and its quality, as the quality of education differs broadly in different countries and cultures. Having a common vision about the quality criterion between the exporter and the buyer is important and it should be clear for both parties what the client is going to receive. Being transparent when it comes to the delivery times at an early stage is also important as the assumptions of delivery times can also vary noticeably between countries. The description of the contracts subject should include the intellectual property rights and the ownership and user rights of the results. The relevant objects for the seller are at least the following: the contract will not grant wider rights than what it can acquire or otherwise grant from its employees or partners. The terms and conditions of the contract cannot overly restrict the sellers other teaching, researching or business actions, especially if someone claims for exclusivity there is a need to be cautious. The granted rights must be in relation to the compensation paid by the client, the results cannot have inappropriately wide maintenance or warranty responsibilities. (Eksymä et al. 2020.)

The terms of payment are essential part of the contract. Especially when the contract is made with a new client and products sold require high preparation costs it should be within possibilities taken care of that the first payment installments are sufficient. The payments can be for example divided to three parts, first payment when the contract is signed, second when the execution is started and third when the product or service is delivered. The safest way of course is getting fully paid in advance. When dealing with reliable and older clients or products that are prepared with low costs the terms of payment can be more flexible. The possible restrictions of international payments, taxes and withholding taxes and other payment related issues of the target country should also be taken into account as they can delay the receiving of payments or lower the final amount of payment that will be received. (Eksymä et al. 2020.)

It is usual that education export contracts include a limit for damages liability. The common way is to restrict possible indirect damages from the liability and set a certain currency amount for the limitation of liability. The acceptance of possible contractual penalties should be considered carefully. The laws that are applied and the dispute resolution methods often create conversation in international agreements, because at least the other party will have to abandon the application of their nations laws. One option is to choose the applied laws from a third country and set the dispute resolution methods there, but usually the client has overpower over the negotiations and the laws of the clients nations will be applied. Therefore it is useful to research how the enforcement of judgment is handled in practice in the client's country. (Eksymä et al. 2020.)

#### 2.8 Business Plan for a Start-Up Company

When comparing a business plan between a start-up company and a company that has been functioning for several years, in a start-up company's business plan there is some information missing or it is narrow, due to the fact that there might not be income statements or other actions yet to be shown as the product or service might not even be ready yet. However the business plan is important for a start-up. As the business plan for a start-up company emphasizes mostly on forecasts, visions and goals than concrete statistics it is important to be credible and realistic. Generally the business plan for a start-up company follows the same basic elements of a usual business plan but it may contain lesser pages as there is not much information to show from the past and the current operations are not of high volume.

#### Why to write a business plan before the business is running?

A business plan provides guidance to a start-up company, which steps to take to get the business running and the evaluation of opportunities helps to avoid entering the market if the plan shows that there is a high risk that the business will be unsuccessful. It is also important, as usually start-ups require outside funding the business plan convinces the possible investors, that the company will be profitable and describes how the investors will get their money back. As the start-up begins to take its form and grow, a business plan will become necessary then at the latest. (Greene & Hopp 2017, cited 8.4.2020; Nordea 2020, Cited 4.4.2020; Chwolka & Raith 2011, cited 12.3.2020.)

In a study conducted by the Harvard Business Review together with Panel Study of Entrepreneurial Dynamics II, more than 1000 entrepreneurs over a six-year period time in the U.S were studied, that is it profitable to make a business plan. The findings showed that entrepreneurs who write formal plans are 16% more likely to achieve viability than those companies that do not write it, when the entrepreneurs where otherwise *identical*. (Greene & Hopp. 2017, cited 8.4.2020.) As to sum it up for the "why": A business plan for a start up company provides guidance to entrepreneurs how to move from idea to business, offers a possibility to exit before going into the market and helps to get investors and loans for necessary funding.

#### Marketing

As there usually is very little money available for marketing when starting a business and outsourcing it is rarely a choice at the beginning, the entrepreneur him/herself has to do research and learn about marketing and do the sales work him/herself by contacting potential customers via phone, email or in person (Suomen uusyrityskeskukset ry. 2019, cited 6.4.2020). Describing the marketing plan and the reasons behind the chosen channels, such as taking advantage of the Internet and social media, as it is fairly cheap or in some cases even free. Expressing what are the future plans in terms of marketing, either from development point of view, or from the starting point of view if there has not been any actions towards marketing yet and what is the estimated budget for marketing.

#### Product/Service

If the product or service is still under construction, describing the measures that have already been taken in research and development and how it will continue and what investments it requires. Also in what time frame the product or service is ready to be on the market and will create profits, proving that there will be a need for the product or service. What will be the pricing strategy of the product and why and what are the estimated sales and what they are based on, if there are no records of previous sales yet to be shown. (Barrow 2009, chapter 6.)

#### **People**

As in a start-up there is usually very few employees, or there is only the entrepreneur him/herself. It is important for the entrepreneur to assess his/hers own skills, motivations and capabilities for running the business as well as those employees in the company. The possible investors have to be convinced that the owner and possible other employees have the capabilities to make the

business successful. If there are very few employees or only the entrepreneur, illustrating how the time is divided in order to manage all the aspects of the business. Introducing the additional people helping, such as educated advisors or students of the field. Depicting the plans for personnel development, such as when the company will hire more employees, for what purposes and are they going to be working with fulltime or part-time contracts. The CV of the entrepreneur and other key employees may be added to appendix. (Butler 2007, chapter 2; Williams 2012, chapter 7.)

#### **Plans of Growth**

As in any business plan, the future goals and plans are being addressed, but when the question is about a start-up company, it is very important to state the plans of growth. It provides important information about the purpose, goal and direction of the company, as there is not yet a fully functioning business. Presenting the plans of growth and explaining how large the company will be and in what time it will get there and how. Stating how the business will be scaled up and what are the possible limiting factors. (Williams 2012, chapter 7.)

#### **Financials**

As start-ups do not usually have revenues in order to run the business, describing from where and how the company will receive resources to get and keep the business running. Expressing the amount of needed funding and what is it going to be used for and from where the funds are going to be received (Nordea 2020, cited 11.5.2020). If the business plan is made to raise funds, explaining what purchases will be made, why and from where and states a clear explanation of the costs of those purchases and forecasted financial statements.

#### 3 RESEARCH METHODOLOGY

The concept of *research methodology* or *research design* is used when referring to the strategies used in a research, which ensure that the research can be critiqued, repeated and adapted. The strategies used guide the researcher, which choices to make regarding the sampling, data collection and analysis of the research. Every empirical study requires a design for research and it is formed from the research questions and initial hypotheses. *Research methods* are the tools that the researcher uses in order to investigate the research topic and the methods used are selected based on the research questions. (Lapan, Quartaroli, Riemer 2011, chapter 4.)

#### 3.1 Data Collection

Every research involves collecting and analyzing data, it can be done through observation, reading, and measurement, asking questions or using several of these or other strategies. The characteristics of the collected data may vary and it can be for example numerical, consist of words or both of these, it can also consist of pictures and may not have numbers or words at all. Data can also be original, something that has never been collected before, or secondary, which is already collected by someone else but then reused in different way. Data can also be collected from responses received from questionnaires, interviews or other records of observations or experiments or a combination of all of these. In this thesis is the data is collected through qualitative research; the primary data is collected by interviewing the owner of the case company and the secondary data from written already existing documents through desk research. (Blaxter, Hughes & Tight 2010, 188.)

#### 3.2 Qualitative research

Usually researches are based on either qualitative or quantitative research, but commonly the research will have some features of both of them. The strategies for collecting data, such as documents, interviews, observations and questionnaires can involve features from both of these. Qualitative research is concerned exploring a topic in detail and collecting and analyzing information from various sources, which are usually non-numeric, and it aims more to be deep than of wide-scale, and with inductively generating hypotheses and theories. In quantitative

research the objects studied consist of matters that can be measured and observed. It is thought to be concerned with testing of hypotheses and theories, and involving a large-scale demonstrative data including an empirical research where the data collected is in form of numbers. (Blaxter et al. 2010, 65, 185, 186; Nunnally & Farkas 2016, chapter 2.)

#### Case Study

Case studies are researches, where the research objective is defined and specified and it has clear limits or boundaries. Setting these limits or boundaries are necessary as case studies are usually limited in terms of time and resources. The limits allow the use of valuable investigative time for in-depth observations, which will produce rich and detailed case descriptions. Due to its nature, usually case studies rely on collecting qualitative data, as the focus is to examine single instances in depth instead of gathering wide-ranging data and they provide a theoretical or conceptual framework based on a literature review. (Lapan et al. 2011, chapter 10.) This thesis is a single case study as it focuses on conducting a study and analyzing it for one specific company.

#### Interview

Interviews can be executed in different ways, for example they can be done face-to-face, or at distance over video chat or phone or by email. They can be arranged in different places at the interviewee's or interviewer's home or at a restaurant, or workplace and so on. The structures of the interview may also vary, it may be tightly structured where the set of questions require specific answers, or it may be open and be in a form of a discussion. Semi-structured interviews are in the between of structured and open interview. (Blaxter et al. 2010, 65, 194.)

Since the nature of this thesis did not in the authors mind require broad interview in order to create a sufficient research, the interview of this research was directed to one person. To achieve the aim of this thesis, which is developing a business plan for the case company, the company's owner was interviewed. The interview was a semi-structured interview and the questions were formed from the basis of the constructed theoretical background to get answers that are relevant for developing the business plan. The questions are seen in appendix 1. As the questions asked might have required time and preparation from the interviewee they were sent by email to make sure that the answers are correct and will provide valuable information for developing the business plan. If the interview would have been done by telephone or in person there would have been a risk that some of the information needed from the answers would have been insufficient or distorted, as the interviewee would not have had time to prepare for the questions. This could had

led to poor outcomes in the task of development, which then would not had served its purpose. All the answers gathered from the interview were used in the business plan for example regarding the subjects of product development and the exporting goals of the case company.

#### **Desk and Field Research**

Desk research consists of research processes, which can be done while sitting at the desk, such as collection and analysis of surveys. The analysis of data collected by others and literature searching and other research conducted using the Internet and writing are also included being deskwork. (Blaxter et al. 2010, 66.) In this thesis desk research was one of the main methods for collecting and analyzing secondary data. It was conducted in order to research how to develop different types of business plans and what are the aspects that should be taken into consideration when developing a business plan to the case company. The collected information was analyzed in terms of validity and reliability in order to provide accurate and reliable information that are relevant for the case study. Additionally desk research was carried out about the case company and its operations by analyzing the answers of the interview and other provided information. The case company was very cooperative and information gathered from the company were mostly from the company's own files in Google drive, as the company granted access to their own documents about the business.

As a research that requires the researcher to "go into the field" in order to collect data is concerned as a field research, in its simplest form field research can be observation and questioning that happens some place else than at the desk (Blaxter et al. 2010, 185). In this sense the research done for this thesis consists also slightly of field research, as the author has had a few meetings with the case company. These meetings were not formal and the purpose of them was to get the author familiarized with the products and functions of the company as well as discuss the wishes of the commissioner regarding this thesis.

#### Reliability and Validity

Reliability and validity refer to the repeatability and accuracy of the research. If another researcher would conduct a research with the same questions in a similar setting and they would end up with similar results the research would be concerned to be reliable. Validity is about are the used methods, approaches and techniques actually related to the research issues that have been explored, is it accurate. (Blaxter et al. 2010, 245.)

The subjects that were addressed in this thesis were highly related to the education the author has received. Therefore as the subject was not completely unknown it might be that the authors own preliminary information affected the research methods, in terms such as what information was researched. However as the subjects of this thesis have been taught in the degree programme of international business, it is assumed that even if it affected the research one way or another, the information is correct and the gained education supports the conducted research.

For the literature review the information was collected from academic sources in the form of articles, reports and books. Internet sources used were found from academic databases or from otherwise recognized organizations that are reliable. The books used were from reputable authors and they included several methods that are recognized as common methods and tools for developing a business plan and the same information was found from several sources. Therefore it can be assumed that if different author would conduct this research again, the same core elements would be found from the research. The researched topics were related to the research questions and aims of this thesis and were accurate to the topic.

### 4 RESULTS & CONCLUSIONS

In this chapter the results and conclusions of this thesis are presented. The results answer the set research questions and state the key findings of the research. In the conclusions part the task of development is analyzed comparing it to the theoretical background. It will elaborate the most important findings that were found from the analysis.

### 4.1 Results

One key finding of this research was that companies should make an effort of making a business plan. It increases the chances of success by giving a realistic evaluation of the situation of a company and enables making the right decisions of which way the company should take. As especially start-up companies usually require outside funding a business plan will show possible investors that the entrepreneur is taking his/hers business seriously and has the needed expertise to make the business succeed. Another key finding was that when it comes to developing a business plan for exporting or preparing for educational markets, there are several different aspects that have to be researched before entering the markets when comparing to entering a domestic markets as the markets are more unfamiliar. These aspects are things such as legislation, politics and the localization of products or services in order to make them suitable for the targeted country. The financials aspects of exporting to consider are things such as transportation costs, payment methods and the possible restrictions of international payments as they can delay the receiving of payments or lower the final amount of payment received. There are also various different modes of entries of which can be used when entering exporting markets. Therefore the business plan for exporting should include a broad industry analysis from both a global point of view and from the viewpoint of the certain foreign markets that are targeted (Sandler 2017, cited 26.3.2020).

From the information gathered from the literature sources a preliminary internal business plan for the case company was developed, which the company can use as a base for developing the plan further. The plan is attached to this thesis as an appendix (appendix 2). The owner of the company was interviewed to obtain information about the company and the interview questions were based on the theoretical research in order to obtain information that is relevant in a business

plan. The developed business plan follows the structure and order introduced in the theoretical framework and answers the addressed questions that the company was able to answer. The author took some liberties in subjects such as writing the stated objects of the SWOT-analysis open and researched some statistics for the market research. The used language and expressions were mainly constructed by the author in the way she saw was the best and they were conducted from the facts received from the case company about its operations, objectives and vision. The author was responsible of the visual representation of the business plan and decided which format was used and created the tables and the cover sheet seen in the business plan. As this is the first business plan for the company, the information available is relatively narrow and it does not answer all the questions addressed in the theoretical part of this thesis. Its focus is mainly to work as a base that the case company can use for developing the plan further.

### 4.2 Conclusions

The subject of this research task changed in the beginning, as the first thought subject was developing a marketing plan for the case company. However when the research process continued, it was found out that the case company in question does not have a business plan. Therefore, the subject was changed in the beginning in order to provide more helpful information for the company. When comparing to the starting point of this thesis, the company has been able to concentrate their focus to one special market and have made actions according to it, as in the beginning the business idea was not yet fully clarified. These changes however resulted to the situation that every aspect of the business has not yet been clearly defined, as the business is relatively new. Therefore when analyzing the developed business plan to the theoretical part of this thesis, the business plan does not cover all the necessary aspects and is not consistent with the research and will require further development. This section describes the conclusions drawn by analyzing the business plan by reflecting it to the theory.

At this moment the aspects such as the goals and marketing plans of the case company are scattered, as they are at the same time focusing on both, domestic and international markets. The research pointed out that business plans for entering domestic markets and international markets should be their own separate plans. Business plan should be conducted in a way that the questions it answers are addressed from a specific viewpoint. For example an exporting business plan should state what would be the company's mission and objectives to start exporting, and the

long-term goals for exporting (Beltraide 2020. Export Business Plan Guide, cited 2.3.2020). Currently the business plan is focused on stating the overall goals of the company and not addressing the questions deep enough so that it states the strategic steps which to take in order to achieve the stated goals. However it is important in a business plan to state the overall goals of the company, but it should be mostly focused on answering questions from one chosen aspect. As the business plan created is for a start-up company it should emphasize more on which steps to take to get the business running.

This leads the fundamental question of a business plan "how are we going there?" unanswered, as there is no one stated goal that the business plan is made for. The operational processes that are vital for the company now and in the future should be defined in order to be able to answer this question. The current operations of the company are not of high-volume so the lack of information there is understandable, however the future development of operations should be elaborated more. There is a need for a realistic evaluation of the business in order to express the chances of success and define the steps that have to be taken in order to achieve the goals of the company.

As one researched view found was that a company should first have success in domestic markets before starting to export, the export plans of the case company are not in line with this view as they are planning to start exporting in 2021, because currently the product is not yet fully finished and launched to markets. As stated in the research, when a company or organization makes the strategic decision to go international there should be a reasonable export strategy and a working business model in order to success in education export (Vanhanen 2016, cited 24.4.2020). Currently as the business is just started, there is no export strategy or a fully working business model yet established. The starting of education export also requires a set of various different skills. From the personnel development plan we can see that the company will invest in obtaining various different skills to the company in 2021, but it requires more time to ensure that all the needed skills are found in the company.

The research showed that before entering markets, especially education export markets it is important to pay attention to the choosing of the target country or areas and make a thorough groundwork (Eksymä et al. 2020). The target countries and customers of the case company have been determined, but market researches have not been conducted. As the countries the company is planning to start exporting first are all English speaking countries (England, U.S.A.,

Canada) and other countries with English language skills early enough (11-12 years old kids). These countries should all be researched individually despite the fact that the product is suitable in terms of language as there are things to consider in terms of localization other than language. Especially as U.S.A and Canada are considerably larger areas in terms of population and geographic and they are far away, the process of getting the product to the markets should be clearly defined from different points of views, for example logistics.

The subject of product description has been addressed and it states the processes and steps made for product development as well as what investments are still needed, when the product is ready to enter the markets, and the pricing strategy of the product and what it is based on. The company has evaluated their internal weaknesses realistically in terms of what are the skills that are lacking in the company. The needed skills for the company have been taken into account and acknowledged in the personnel development plan of the company. The sales and profit goals have been set based on aspects such as material costs. The bases of these estimates should however be determined also from other perspectives, for example the size of the potential markets and customers of the markets that are entered. The concrete plans of entering the markets and financial forecasts such as profitability calculation should also be expressed.

### 5 DISCUSSION

During the thesis process the author deepened her knowledge about different business functions and what it takes to run a business and understood the importance of a business plan. The author was surprised how many different aspects affect to the starting of exporting and how much it differs from starting a business in domestic country. The subject of education export was very interesting and it left the author wanting to gain more information about the subject, as the current information available is not of deep nature. This also left the author wonder, why this subject has not been researched more as the goal of Finland is to expand the markets on the field of education export. This research showed that there still is a need for researching educational export from various different perspectives. For example there are no sufficient instructions for how to develop a business plan for education export and overall the amount of researches conducted about how to reach the international education markets from Finland is still low.

The first aim was to create a marketing plan for the case company. When the author found out that the company does not have a business plan, she suggested that it would be more reasonable to create a business plan first. The second aim was to create a sufficient business plan for the case company. However as the process went further the aim modified to be more about how to address subjects that would be important for the company to learn in order to develop their business and gain knowledge about subjects such as marketing, as it is one of the skills the company is currently lacking. Therefore the perspective for building the theoretical background slightly changed in terms such as describing the contents of a business plan in more detail in order to provide practical instructions in addition to providing theoretical background information for the development task. This transformation of the main aim was reasonable as there would have not been possibilities to create a sufficient business plan as the company is still taking its form. During the process of this thesis the company has been able to develop their ideas further and have started to concentrate their focus more to specific areas as in the beginning there were many possible directions the company had thought of taking. The theoretical framework of this thesis will support the development of the company and will help the company to eventually to create a sufficient business plan after they have first focused on addressing the questions of which a business plan answers and chosen their steps to follow.

The expressed results and conclusions of this thesis showed that there is a need for this thesis for the commissioner. This thesis will help the company to see, which are the relevant matters that should be acknowledged when developing the business further. The theoretical framework is serving the purpose of working as a guide for the company and it also provides the needed background for the development task. The next chapter provides suggestions for the commissioner. The suggestions include advices for the operations and goals of the company, which were drawn from the obtained conclusions.

# 5.1 Suggestions for the commissioner

At the moment the business plan is not fulfilling the requirements of sufficient business plan. Therefore it is advisable to go through the plan, correct if there is wrong information and compare the information about the contents of business plan that is found in this thesis to the business plan. It is important to answer the questions that are left unanswered, as the objects addressed in a business plan are not just things that are needed for the business plan, they are objects that need to be defined and taken into consideration when operating a business.

Conducting a proper business plan is advisable, as it will work as a helpful tool to show the right steps which to take in order to achieve the goals of the company. It would be reasonable to make a business plan that is targeted for the first markets that the company is entering so that it answers questions of a business plan from a specific viewpoint so that the plan will provide deep enough understanding from the markets and will answer the question of "how are we going there?" The updating of the plan regularly is important, as then the results achieved can be compared to the set goals and objectives made in the previous business plan and then the plan is renewed to reflect the current situation and used as a guide for achieving the next goals. The audience of the business plan should be taken into account and if the plan is developed in order to gain investments, it is reasonable to add an exit plan, which will show the investors how they will receive their money back if the plan does not work.

The description of the operations of the company and the financials are some of the parts that should be defined more in detail. The operations should also be described from the future point of view, in terms of how the operations should change in order to achieve success. The financials are still missing some calculations and forecasts, for example financing statement, profitability

calculation and break-even analysis. The estimated sales should be justified in terms of what is it based on, for example the size of the potential markets.

Based on this research when it comes to the plans of exporting, it is in conflict with the plans of the company. Usually it is advisable to enter the exporting markets after the product has succeeded in domestic markets. If there is a possibility to hold back with the exporting plans, it could be beneficial, as currently there might be a high risk as the product development has properly started just this year. This would also help with the possible issue of the company that a fatal bug would occur abroad and there would be a need for massive call backs if the product would be properly tested first in the domestic markets. The process of starting exporting also requires various sources such as money and time and conducting a proper market research. The conducting of proper market research is vital as for example legislations and cultures differ. Especially as the product is made for educational use there are barriers that need to be acknowledged and tackled. Usually as entering any foreign market a product or service will need localization in some terms. Even that the product is programmed in English there are other things to consider in terms of localization other than language. Therefore it is highly recommendable to conduct a proper market research and create a separate marketing plan for every different market that the company is entering.

One another suggestion is the development of the websites. At the moment the websites cannot be found and the information that previously was there were scattered. As websites are of high importance these days it would be recommendable to develop one. The websites should be formed in a way that it would provide clear information about the company and the products for the targeted customers and it should be easily found. The websites will work as a "business card" and therefore it is important to put effort on creating them.

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# Company:

- What are your motivations and ambitions for the company?
- What is the purpose your company exists for/ mission statement?

### People:

- What are the current skills found in the company, which are important for the company?
- What skills are still needed?
- On what timeframe you will possibly hire employees, and for what tasks and will they be part-time/fulltime employees?

# Marketing & Sales:

- When are you going to start marketing and how much are you ready to invest in it?
- Through which channels are you going to sell the product and will you sell it directly yourself or are you going to sell it indirectly, for example through education platforms?

### Product:

- When is the product estimated to be finished in order to sell it for schools?
- What is the plan for developing the product?
- Estimated costs and pricing of the product?

# Risks & Opportunities:

What would you say that are the biggest:

- Internal strengths
- Internal weaknesses
- External opportunities
- External threats of the company?

# Funding:

How much funding do you need, and from where are you going to get it?

### Future:

- What are your plans of growth? How big you want the company to grow?
- When are you planning on starting exporting your product abroad?
- What are the countries you plan to start exporting to first, and why?

## Thesis:

What do you hope to gain from this thesis?



# **BUSINESS PLAN**

May 2020

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### 1 EXECUTIVE SUMMARY

SIMUA is specialized in education technology, teaching of robotics, programming and Artificial Intelligence. Our product consists of three separate components, which all complement each other. These components are Alvin A.I an artificial intelligence assistant, a robot that students can program and control with Alvin and teaching materials in the form of textbook and exercise book for teaching programming and fundamentals of artificial intelligence for students' from ages 11 to 18. Our mission is to revolutionize education business with artificial intelligence and make it possible that every student has an A.I. robot. Our product Alvin A.I creates a personal and interactive way to study new things and it makes learning interesting, pleasant and personal experience. Our goal is to get the product to the international education markets.

SIMUA is a newly founded start-up company in Oulu, Finland. Tommi Mänttäri, who is a private entrepreneur, owns the company. The aim is to transform the company to a limited company during 2021 to continue the efforts of building the business even further. Mika Saari is supporting to develop and run the company and he has taken the role as a leading developer for the Alvin robot and Lasse Hietala is developing the Alvin Al Android app. Our ambition is to be able to do what we love and build something cool and different that we ourselves enjoy. Our team has the needed know-how for developing the product further. We are also collaborating with many talented people and organizations, such as University and a primary school in Oulu in order to develop our product. The aim is to get the first commercial product to schools in 2021.

The main problem for teachers is the lack of time and resources. There are no pre-existing teaching materials for robotics teaching, which leads the teachers having to assemble the materials by themselves. The resources that can be used per student are relatively low and therefore the materials used are not allowing students to use them at home in order to use their own creativity and enthusiasm at their own time and pace. Our goal is to create cost-effective ready-made teaching materials for the needs of schools so that the students are able to get the materials for their own. Our company's comprehensive education package will take the weight off from teacher's shoulders and motivate young students in a new innovative ways to learn about the new technologies, which will be a big part of our future. One of our main opportunities is, that the product has been developed in English from the beginning, which is spoken as a mother language in many coun-

tries, or being taught so that the students have sufficient skills for operating the product in English. This will also work as an advantage in terms of localization when we start exporting.

As robotics and artificial intelligence are a major part of the future, the education systems have started to acknowledge it. However there is a lack of products and programs, which will motivate the students to learn basic coding and robotics, that's where our product comes to fill that need in the market. As our target markets are students from the age of 11 to 18 there definitely is a large potential markets. In many countries the finishing of primary school is compulsory and majority of students continue their studies after it. For example in 2019 there were 2 187 primary schools in Finland, in which the amount of students were 550 400 and in the UK there were 25 020 primary schools.

Unlike the competitors, our revenue model is based on selling the software license instead of robots. This enables noticeably lower prices and every student will have the possibility to have their own robots as the schools will be able to create them by themselves by laser cutting thin plywood and ordering the rest of the needed parts from us. Alvin artificial intelligence also comes with the product and as it is used for programming and controlling robots in English language, there is no need for the students to learn a whole new coding language. This opportunity does not exist in the competitor's products.

Our sales projections for the first year of getting the first commercial product for schools are 50 000€ of which profits will be 13 210€. We project that sales will grow to 100 000€ of which profits will be 26 435€ the next year after the product has been successfully launched to the markets. The start-up financing requirements are 57 900€ for the year of 2020. These expenses will be funded by own personal money, in terms of not taking salary or by applying for external funding from Teknologiateollisuuden 100-vuotissäätiö.

### 2 THE COMPANY

### 2.1 Company Description

SIMUA is a newly founded IT company in Oulu, Finland that started operating officially in 2017, when it got its business identification number. Current form of the company is a private entrepreneur, so the official name of the business is Tommi Olavi Mänttäri, who is the owner of the company. The brand name is Simua or Simua Technologies, to which the official name will be changed to after the company is transformed in to a limited company after the product is successfully launched. Our company is specialized in education technology, teaching of robotics, programming and Artificial Intelligence. Our product includes Alvin A.I an artificial intelligence assistant, a robot that students can program and control with Alvin and teaching materials in the form of textbook and exercise book for teaching programming and fundamentals of artificial intelligence for students' from ages 11 to 18. The main goal is to get the product to the international education markets.

The mission of our company is to revolutionize education business with artificial intelligence and make it possible that every student has an A.I. robot. Our product Alvin A.I creates a personal and interactive way to study new things and it makes learning interesting, pleasant and personal experience. The goal is to develop cost-effective educational materials for schools that the school can provide to its students.

At the moment the company is fully owned by Tommi Mänttäri and Mika Saari is supporting to develop and run the company and Lasse Hietala is developing the Alvin Al Android app. We are currently doing this as part time alongside our full-time jobs. When the business develops further we are forming a limited company to continue the efforts on building the business even further. This is expected to happen during 2021. Our ambition is to be able to do what we love and build something cool and different that we ourselves enjoy. We want to be able to create that spark and joy to the children of today, what we experienced when we were young when we first realized the opportunities and possibilities of technology.

### 2.2 Product Description

The main problem for teachers is the lack of time and resources. There are no pre-existing teaching materials for robotics teaching that are suitable especially for younger students, which leads the teachers having to assemble the materials by themselves. The resources that can be used per student are relatively low and therefore the materials used are not allowing students to use them at home in order to use their own creativity and enthusiasm at their own time and pace. Our goal is to create cost-effective ready-made teaching materials for the needs of schools so that the students are able to get the materials for their own. Our company's comprehensive education package, which consist of three separate components will take the weight off from teacher's shoulders and motivate young students in a new innovative ways to learn about the new technologies that will be a big part of our future. The purpose is to sell licenses and parts needed for the robotics for the schools with ready-made education materials.

### **Artificial Intelligence**

The artificial intelligence programming environment consists of the Alvin A.I. Assistant, which is currently available for Android applications with preinstalled Alvin Artificial Intelligence and integrated EnglishScript programming language. The programming environment allows programming in English so there is no need to learn a new coding language. Students are able to create conversations with Alvin by speaking or texting with it in English; Alvin remembers the things the students teach to it.

Students can take pictures and tell Alvin what is in them or what is happening to teach it how those things look alike and Alvin is then able to show the picture when needed. The programming environment is developed further to let students to attach audio recordings to the images in order to tell how the shown things sound like. Later Alvin will use these clues to gradually learn how things look and sound like in general and will be able to recognize specific things also from new images or video streams. Since the programming environment works on school tablets and student's mobile phones, the schools do not need to buy more equipment in order to be able to use it and it also allows students to be able to use it at home. The Al programming environment is free for non-commercial use. For educational institutions there is a small licensing fee for student/year.

#### **Robotics**

An affordable robot based on the ESP32 microprocessor including its own circuit board, 3D models for 3D printing, sensors and actuators. The ESP32 circuit also allows very low-power applications, allowing students to make Internet of Things, for example a remote-read thermometer. The schools can make the actual robot for Alvin by laser cutting thin plywood and by ordering the rest of the components from us, which makes it affordable and students can get their own robots, which is not possible with other robotics in the markets. The school tablet or student's mobile phone is connected to the ESP32 via Bluetooth or Wi-Fi. Students program Alvin A.I to respond to measurements sent by a robot or IoT device, for example Alvin can say or display something and control the robot based on student's programming.

Because the accuracy, power generation, durability and quality requirements of a robot are much lower in education than in industrial use, the design of the robot and the implementation of actuators and sensors can be optimized to be as simple and inexpensive as possible. In order to find the right technical solutions, we develop technical solutions at the University of Oulu's Fab Lab to implement the robot's structure, motors, cylinders and valves with the simplest possible structure and inexpensive and ecological materials.

The Alvin-robot is also designed in such a way that any of the different actuator technologies can be used, such as electric, pneumatic and hydraulic. Sensors and connectors for robot control are implemented to its own circuit board. The circuit board is then attached to the ESP32 board using its I/O connector. This allows different kinds of robots to be implemented simply by designing a new circuit board with different sensors and both connectors and circuits for actuators.

### **Teaching materials**

A textbook and an exercise book, which will be provided for teaching robotics, programming and fundamentals of artificial intelligence, starting from 5th grade students. The textbook covers basics of programming and programmable devices, programming concepts, robotics and artificial intelligence. The exercises include tasks with Alvin Al and Alvin robot to support learned theory. The books have approximately 50 pages in total.

# Contents of the product

First the product will be sold to schools that are able to laser cut the plywood by themselves. Later on we will provide complete robots for packages for individuals. The contents of the product are seen in table 1.

TABLE 1. Contents of the product

2021	2023	
1st commercial product for schools	1st complete robot product for individuals	
-Includes separately purchased parts:	-Sold as one in its own product package.  -Includes all mandatory parts for a complete robot:  · Already laser cut plywood parts from non-toxic plywood board  · ESP32 active board  · Robot driver board  · Prototyping board  · 6 servos with cables  · 8 pieces of bearing  · Battery socket  -Includes downloadable building instructions and training materials.  -Includes downloadable Android and iOS app with pre-installed Alvin Al.  -Includes a SW license for using the product.	

### 2.3 Product Development

Products are developed using the lean development process where first a simpler product is developed and sold. The collected money from the first product is then used for developing a more complex product. This is repeated to bring different and more complex products to the market for different market needs with more value. The schedule of product development is presented in table 2.

TABLE 2. Product development schedule

February 2020	Product development starts
September 2020	1st prototype to be used in schools
March 2021	1st commercial product ready for schools
Year 2022	Own online store
Year 2023	1st complete robot product for individuals

### Collaborations for product development

Oulu Rajakylä School, co-development project with their technology class teachers. The aim of this project is to develop Alvin together to ensure that it meets the needs of the technology driven class. We will be visiting the technology classes of 5-6 grade students where the students try to use Alvin robot. Based on feedback from teachers and students, we are co-developing Alvin robot with schoolteachers. Technology class teachers also train our company representatives on the technology class pedagogical model and practical arrangements. Similarly, our company educates them on how to use, program and build Alvin robot. We also co-operate with STEAM Oulu network of schools to develop Alvin robot

Researchers in ICT and education technology from the University of Oulu. Student of learning, education and technology Rohit Mishra is participating directly to the project by collecting observations from rapid experiments at school bringing suggestions for improvement to the Alvin robot and conducting pedagogical research on the subject to capture patterns of learning and interac-

tions among students. Dr. Jari Lauru will create another version of the Alvin robot, a car, in the Fab Academy 2020 program. We also have a thesis worker Jani Aalto who implements a pattern recognition SW to the Alvin Al Assistant Android app to let Alvin recognize everyday objects for the robot to manipulate.

We are also collaborating with the University of Oulu on teaching and research of educational technology in developing the pedagogical features of the Alvin robot and we are using the Fab Lab of the university. Fab lab Oulu is a small and open working area for digital products that allows you to design your own product from scratch. We are using the Fab Lab and its equipment to develop a prototype of Alvin robot.

We are also getting technical consulting for designing, developing and fabrication of the Alvin robot from Tietomeri Oy. For the robotics part we are cooperating and meeting with EBV Elektronik, which imports the ESP32 circuit, in their office in Oulu.

### 2.4 Personnel Management and Business Operations

For now the ownership of the company is fully on Tommi Mänttäri and he is working as a private entrepreneur through OP-kevytyrittäjä service. The aim is to form a limited company during 2021 to build the business even further. Mika Saari has a big supporting role in the Company; both of us are currently working on this next to our full-time jobs. We are however getting help from various people through different collaborations and networks and we also have volunteers who are developing our product. The current relevant skills found in the company are artificial intelligence, Android app development, electronics & microprocessors, Cloud computing and IP Networks. We currently have a small office room in Kempele, and another office is going to be needed in 2020-2021.

### Tommi Mänttäri, a private entrepreneur

Owner of the business, takes care of management tasks such as, banking and taxation related actions via OP-kevytyrittäjä service, insurance contracts, business planning and meetings, vision and strategy formulation. Relevant skills in A.I., Machine Learning, Artificial Neural Networks, NLP, C/C++, Java, HTML5 and JavaScript.

### Mika Saari, supporting role

Management tasks, Infrastructure management actions and negotiations, office space: network connection, electricity, IT purchases: laptops, LCDs, keyboards, mice, digital video camera, Cloud HW, Cloud servers, Cloud hard drives, racks. Relevant skills in Cloud systems, OpenGL, C/C++, Java, HTML5, JavaScript. Mika has taken the role as a leading developer for the Alvin robot, including the HW, electronics and embedded programming.

### Personnel development plan

The skills that the company still needs are sales & marketing, business management, customer relations & support, logistics, iOS app development, web development, HW electronics, embedded programming, manufacturing and human resources. The plan for personnel development is illustrated in table 3.

TABLE 3. Personnel development plan

2021	2022	2024
These employees will start as	These employees will start as	Will start as a part-time and
a part-time and continue as	a part-time, and continue as	change to fulltime in 2027
fulltime in 2022	fulltime in 2023	
-2 for Artificial Intelligence	-1 for Business Management	-Human resources
-1 for Android app develop-	-1 for iOS app development	
ment	-1 for Cloud computing	
-1 for Electronics & Micropro-		
cessors		
-1 for Marketing		
-1 for Customer relations and		
support		
-1 for logistics		
-1 for Web development		

### 3 MARKETING AND SALES

### 3.1 The Industry & the Target Markets

The Educational markets and the exporting of education has started to grow rapidly, the new forms of technology as well as globalization are enabling this. The Finnish government is supporting educational export from Finland to other countries and the reputation of Finnish education system is seen as high, which works in our favor. As the technology has developed tremendously over the past decade, teaching of it in terms such as artificial intelligence, robotics and coding have become educational subjects for younger children too. That is why there is a need for our product as the teaching of these subjects is still being modified and a common view of how they should be taught is still taking its form. This type of technology is not going anywhere, if anything it will evolve more and more and therefore the demand for our product will last also in the future. Teaching has also started to be formed more in a way that the students will learn independently and use their own skill for retrieving knowledge and being creative, in comparison to older models where the teacher lectures for the whole class and students sit quietly. Our product will support the individual learning and creativity of the students.

As our target markets are students from the age of 11 to 18 there definitely is a large potential markets as in many countries the finishing of primary school is compulsory and majority of students continue their studies after it. For example in 2019 there were 2 187 primary schools in Finland, in which the amount of students were 550 400 (Tilastokeskus 2020) and in the UK there were 25 020 primary schools (Department for Education; Welsh Government; Scottish Government; Northern Ireland Department of Education). Currently we are first making a co-development project regionally in Oulu, Finland but the plan is to start exporting abroad in 2021 to English speaking countries, such as England, U.S.A and Canada and to countries where 11-12 year old students have the needed English language skills. The countries with the highest English skills are primarily located in Europe, excluding Singapore, in which the level of English skill is also high.

### Restrictions

We have to make sure that we are not violating any other patents before fully starting the business. As the education of schools is regulated and governments have affect on them it can create political and legal restrictions. Depending on the country, they can for example restrict the operations of foreign businesses and they might have different qualifications and regulations for the educational products used.

### Competition

There are already providers of robotics and Internet of Things education materials in the field, however there are not as comprehensive packages as ours available in our target markets. Our product differs, as the revenues are not coming from selling robots like the competitors, instead we are selling a software license. The schools will be able to create the robots by themselves by laser cutting thin plywood and by ordering the rest of the needed parts from us. That way the costs of the robots are noticeably lower than the competitors, so every student will have the possibility to have their own robots. Alvin artificial intelligence also comes with the product and it is used to programming and controlling robots in English language, this opportunity does not exist in the competitor's products. However as the development of Al and robotics are popular rising subjects, we can anticipate that more companies will try to develop this kind of technology for educational use.

### Competitors

RobotShop - offers different kinds of robotics and materials for education such as robot books. Higher prices and does not offer a comprehensive education packages as one that work together like SIMUA's package, which includes ALVIN, robotics and direct teaching materials for schools.

Classic TI Robotic Systems Learning Kit by Texas Instruments, offers robotics kit and classroom curriculum for electronic system designs work, does not include Artificial Intelligence systems.

Mindstorms by LEGO - offers robotics, but mainly for individual consumers and the prices are relatively high.

Cooking hacks by Libelium - Offers IoT education on wireless sensor networks and electronics kits and tutorials. Does not however include suitable learning materials and tools for younger students.

### 3.2 Marketing

We have made minor investments to marketing by using Google adds, which costs minimum 1.48€/day, but have not yet started official marketing. We have participated in different occasions, such as Artic Education Forum to introduce our product and create contacts and networks. The co-development project with Rajakylä's School in Oulu will also create "word of mouth" marketing, as the robotic -and other teachers involved discuss about the projects, which will increase the awareness of our product in other educational institutions in Finland. We are also networking with STEAM Oulu and Innokas Network.

In 2021 we will start the marketing and selling trough existing school networks like Techno Class Network, STEAM School Network and Innokas Network that promotes products for schools and the Fab Lab community. Then we will sell and market the product directly to Finnish schools, by contacting them via phone and sending marketing documents and free samples to those that are deciding and promoting products in the schools. We will also start attending more education related events, such as exhibitions, conferences and market events and market and sell our product there, first in Finland and later in English speaking countries.

In 2022 we will invest in our online presence and create an online store for selling our products. We will also market in social media, such as discussion groups in Facebook and LinkedIn that are related to Finnish education. From there we will also move to international social media platforms in English speaking countries. The budget for marketing will be approximately 30% from profit, which will leads to the following estimate seen in table 4.

TABLE 4. Marketing budget

Year	€
2021	3 000
2022	8 000
2023	12 000
2024	20 000
2025	27 000
2026	35 000

### 3.3 Pricing & Sales

The revenue model comes from selling the software license to schools which will be approximately 6€/per student. The needed parts for the robots will also be sold with affordable prices so that every student would have the possibility to have their own robot. First the products will be sold for schools that are able to laser cut and assemble the robots by themselves by purchasing the other needed parts from us. Usually the costs that can be used for materials per pupil are 20-50€ so the product is made to fit that price range.

In year 2021, for 100 pcs production set for separately purchased robot parts for schools for one robot:

- · Parts are sold only in 10/100 amounts.
- · Material costs: 22€ (including assembly costs)
- · Production costs: 6€(laser cutting, flashing, testing)
- Packaging costs: 1€ (product package & packaging)
- Logistics costs: 1€ (depends on purchase amount)
- SW license: 6€ (to cover SW development costs)
- Margin: 30% (to invest in new development)
- · Price: 47 euros (without +24% VAT)

In year 2022, for 1000pcs production set for separately purchased robot parts for schools for one robot:

- Parts are sold only in 10/100/1000 amounts.
- · Material costs: 17€ (including assembly costs)
- Production costs: 6€ (laser cutting, flashing, testing)
- Packaging costs: 0.50€ (product package & packaging)
- Logistics costs: 0.50€(depends on purchase amount)
- · SW license: 6€ (to cover SW development costs)
- Margin: 30% (to invest in new development)
- · Price: 40 euros (without +24% VAT)

In year 2023, for 1000pcs production set for a complete robot for individuals:

- · Complete robot product purchased individually
- · Material costs: 17€ (including assembly costs)
- Production costs: 6€ (laser cutting, flashing, testing, stickers)
- · Packaging costs: 3€ (product package & packaging)
- Logistics costs: 1€
- · SW license: 6€ (to cover SW development costs)
- Margin: 30% (to invest in new development)
- · Price: 43 euros (without +24% VAT)

### **Sales Estimation**

First the needed parts will be purchased for the robots in 100pcs units, based on the orders from schools. Later on the parts will be ordered in 1000pcs units, which will lower the product costs and increase the profits. The future sales estimations are seen in table 5.

TABLE 5. Sales estimation

Year	Parts for one robot /	Licensing sales (€)	Total Sales (€)/year
	Units sold		
2021	1 000pcs (10x100pcs)	6 000	50 000
2022	2 000pcs (10x100pcs	12 000	100 000
	+1000pcs)		
2023	3 000pcs (3x1000pcs)	18 000	120 000
2024	5 000pcs (5x1000pcs)	30 000	200 000
2025	7 000pcs (7x1000pcs)	42 000	290 000
2026	10 000pcs (10x1000pcs)	60 000	410 000
2027	20 000pcs (20x1000pcs)	120 000	815 000
Long term			4 000 000

### 4 RISKS & OPPORTUNITIES

For analyzing the current situation of the company a SWOT-analysis was made to show the internal strengths and weaknesses and external opportunities and threats. The SWOT-analysis is illustrated in table 6.

### TABLE 6. SWOT-analysis

Strengths	Weaknesses
<ul> <li>Own AI technology</li> </ul>	<ul> <li>Marketing &amp; Sales knowledge</li> </ul>
- Strong SW development know-how	<ul> <li>Business Management knowledge</li> </ul>
<ul> <li>Professional level know-how for AI,</li> </ul>	<ul> <li>iOS app development knowledge</li> </ul>
Android app & Cloud development	<ul> <li>Logistics knowledge</li> </ul>
- Know-how for Electronics & Micro-	<ul> <li>Production knowledge</li> </ul>
processors and Web development	<ul> <li>Web development knowledge</li> </ul>
<ul> <li>Support from friends</li> </ul>	<ul> <li>Customer relations &amp; support</li> </ul>
	knowledge
Opportunities	Threats
<ul> <li>English language</li> </ul>	<ul> <li>Violating other's patents</li> </ul>
<ul> <li>Robotics as a raising trend</li> </ul>	<ul> <li>Stealing of technology</li> </ul>
- Artificial Intelligence acceptance in	<ul> <li>Loosing a team member</li> </ul>
the world	<ul> <li>Large amount of faulty/wrong parts</li> </ul>
tile world	Large amount or launty/ wrong parts
The wants of society's to motivate	purchased from external sources
- The wants of society's to motivate	purchased from external sources

The current strengths found in the company are important for this stage of the business, as the know-how for building and developing of the product are the main steps for getting the business running before entering the market. From here we can see that the current weaknesses of our company are lack of specific skills that are highly related to the actual running of the business, in

terms such as actually getting the product to the market. These weaknesses are however acknowledged in our personnel development plan, and will be tackled by following the personnel development plan and in time these weaknesses will be turned to strengths.

One of the main opportunities is, that the product is from the beginning been developed in English, which is spoken as a mother language in many countries, or being taught so that the students have sufficient skills for operating the product in English. For example in Finland students are able to use the product, as the level of English education is adequate. This will also later on work as an advantage in terms of localization when we start exporting. As robotics and artificial intelligence are a major part of the future, the education systems have started to acknowledge it. However there is a lack of products and programs, which will motivate the students to learn basic coding and robotics, that's where our product comes to fill that need in the market.

In the external threats it is possible that we will unintentionally violate other's patents, this needs to be researched and assured that we are not discriminating anyone else. As our robot and Alvin are open source, there is no current need for applying patent, and the only thing that could harm our operations would be if someone would steal the codes of our operating environment. The issue of purchasing large amount of faulty or wrong parts from external sources has to be tackled, by using reliable manufacturers and having that sort of terms and conditions for the purchases from the source that we will be insured and safe if this happens, and we will not loose our money. In order to avoid fatal bugs, we have to test the products enough before entering large markets, and make an action plan to tackle this issue in order to be prepared for it.

# 5 FINANCIALS

### **Estimated Profit of Sales**

The calculations of estimated profits are based on material costs when the needed parts are purchased in the amount of 100pcs, where the material costs of one robot are 21.77€. First the needed amount will be purchased in 100pcs based on customer orders. Later on the parts will be purchased in 1000 amount pcs, which will lower the material costs of one robot to 16.65 and the profits will be higher. The purchasing of parts in 1000 amount pcs will start sooner than seen in table 7 and the profits can therefore rise higher than illustrated.

TABLE 7. Estimated profit of sales

Year	Licensing	Robot parts	Total (€)
2021	4 560	8 650	13 210
2022	9 120	17 315	26 435
2023	13 680	25 975	39 655
2024	22 800	43 290	66 090
2025	31 920	60 610	92 530
2026	45 600	86 585	132 185
2027	91 200	173 170	264 370

# **Funding Needs**

In year 2020 the total need for funding is 57 900€ for the following expenses seen in table 8. These expenses will be funded by own personal money - not taking salary or by applying for external funding from Teknologiateollisuuden 100-vuotissäätiö.

TABLE 8. Funding needs of 2020

Expenses	Costs €
Salary	34 500
Employee contributions	8 600
Fixed costs (rent, electricity, network)	7 800
Purchase of equipment and materials	3 000
Travel costs	300
Total	57 900

- In year 2021 funding is needed for the firs 100pcs production set of the robot product that costs 2500€. The 100pcs production set is repeated as many times necessary and the funding possibilities are same as in year 2020.
- In year 2022, the needed amount is 25 000€ for the first 1000pcs production set of the robot product and the production set will be repeated as many times necessary. This will be paid from collected margin and possible external funding.
- In year 2023, for the complete robot for individuals the needed amount is 30 000€ for 1000pcs. Will be paid from collected margin and possible external funding