

A business plan for a new type of medical centre in Eastern Finland

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<p>Abstract</p> <p>This thesis presents a business plan for the establishment of a new type of medical centre in Eastern Finland with tele-health services capabilities. The key product/service of this medical centre is to provide the tele-health care system by making use of mobile E-Health monitoring agent (EMA) and the E-Medical Centre with secured wireless communication protocol to provide advantages in monitoring health, immediate responses, and correct actions to changes in a customer's health. This study focuses on the analysis of factors affecting to the successful chance of this new E-Medical centre, e.g., current demands, possibility, potential profitability, competitors, risks of the venture, etc.</p> <p>The study started with a short revision of the definition, elements of business planning and procedures to start up a business in Finland. Next, current situation of the Finnish healthcare system, potential demand of the new E-Medical Centre in Finland were analysed. Then the detailed plan for the new E-medical centre was introduced. Based on the performed analyses, there is a feasible chance for establishing this new E-Medical centre in Eastern Finland. However, further studies on capital investment, management system, and technology transfer, etc., have to be carried out before the real E-Medical centre can be going to operate.</p>			
<p>Keywords</p> <p>Business plan, innovation, healthcare, medical centre, self-tracking, tele-monitoring</p>			

CONTENTS

1	INTRODUCTION	7
2	BUSINESS PLANNING.....	10
2.1	Business idea	10
2.2	Elements of a business plan	12
2.3	Business environment.....	14
2.4	Establishing a business in Finland.....	20
3	FINNISH HEALTHCARE SYSTEM AND MEDICAL DEVICE INDUSTRY	24
3.1	Finnish Healthcare System	26
3.2	Healthcare technology and Medical device industry in Finland	28
4	THE RESEARCH ON THE POTENTIAL DEMAND OF E-MEDICAL CENTRE	33
4.1	Research methods.....	33
4.2	Results of the research on the potential demand of E-Medical Centre	38
5	CASE: AN E-MEDICAL CENTRE IN EASTERN FINLAND.....	44
5.1	Product and service	45
5.2	Market analysis	48
5.3	Competitors and competitive edge analysis	50
5.4	Risks analysis and management	55
5.5	SWOT analysis and Market segmentation.....	57
5.6	Marketing Mix Strategies.....	63
5.7	Financial plan.....	70
6	CONCLUSION	74
	BIBLIOGRAPHY	76

APPENDICES

- Appendix 1 The research questionnaire in English
- Appendix 2 The research questionnaire in Finnish
- Appendix 3 Executive Summary of the EMA Medical Centre

LIST OF FIGURES

FIGURE 1.Reasons for business establishment	11
FIGURE 2. The Business plan content.....	12
FIGURE 3. Business environment.....	15
FIGURE 4. Internal and External Environment.....	19
FIGURE 5. A business establishing process	23
FIGURE 6. Funding sources for enterprises.....	23
FIGURE 7.Organisation, funding, provision and supervision of healthcare services	28
FIGURE 8. Finland's Exports of Healthcare Technology in 2012	30
FIGURE 9. Finland's Exports of Healthcare Technology in 2013.....	31
FIGURE 10. Research purpose and objective.....	34
FIGURE 11. Age and gender of respondents.....	38
FIGURE 12. Geographical distribution of respondents.....	39
FIGURE 13. Perception on the tele-monitoring in helping elderly people.	39
FIGURE 14. Perception on tele-monitoring according to age groups.....	40
FIGURE 15.The trend of using wearable healthcare agents	41
FIGURE 16. The potential demands on wearable healthcare agents	42
FIGURE 17. Suggested services for the EMA Medical Centre.....	43
FIGURE 18. Proposed service fee of the EMA Medical Centre	43
FIGURE 19. Working principle of the proposed E- Medical centre.....	46
FIGURE 20. Working principle of the proposed E-Health monitoring agent.....	48
FIGURE 21. Polar products and support services.....	52
FIGURE 22. Porter's Generic Strategies	53
FIGURE 23. Porter's Generic Strategies and Industry Forces	55
FIGURE 24. New paradigm for patient behaviour	59
FIGURE 25. EMA Medical Centre's SWOT analysis.....	60
FIGURE 26. Segmentation procedure.....	62
FIGURE 27. Consumer marketing channels of The EMA Medical Centre	65
FIGURE 28. Provisional pricing formula	66
FIGURE 29. Example of the calculation of sales price	67

LIST OF TABLES

TABLE 1. Forms of Business in Finland	21
TABLE 2. Classification of medical products	29
TABLE 3. Basic information about the business	45
TABLE 4. Example of EMA's investment calculation	71
TABLE 6. Example of EMA's forecast profit and loss account	72
TABLE 5. Example of EMA's profitability calculation	73

1 INTRODUCTION

In our era, there are many challenges for humanity to face with. Among them, one of the most critical problems in Finland is the rapid aging of the population since mid-twentieth century. According to Statistic Finland's data, the fertility rate decreased for the second year in a row, while the life expectancy increases because of developments in public health system and policies. In the near future, the demographic dependency ratio, the quantity of children and pensioners per one hundred persons of working age, will go up. This will be the major challenge for healthcare systems in developed countries and Finland is not an exception. (Statistic, 2012.)

It is common that elderly people prefer to be taken care at their home. Besides, the older people are, the more special care services they need. Hence, it is an issue for the public sector to provide enough supports to the population. From one survey made by the Local Government Pensions Institution (Keva) in 2012, Finland is facing the shortage of nurses in healthcare sectors, and the situation has become critical. According to YLE news agency, about 25 percent healthcare staffs will retire in the next ten years. The current system will be overloaded in the next decade. Therefore, finding solutions for greater demands in healthcare sector becomes urgent. The new system needs to meet the basic requirement for healthcare purposes; that is a well-balanced system of support concerning healthcare, welfare, nursing care and medical treatment. (Malcolm, 2012.)

The twenty-first century is also known as an e-century, when technology is applied in different fields, i.e., from discovery our surrounding environment to society management and even in the healthcare sector. Nowadays, people can find many devices which help them track their health easily, and self-tracking has become a new trend in many countries. For instance, in Finland, there are more than 1800 members of a closed Facebook group, where members share their experiences and stories about self-tracking devices and many self-tracking events have taken place. (Heikkinen & Teivainen, 2014.)

Because of the current needs and trends, E-Medical Centre can be considered as an innovative solution for reducing the burden on the healthcare system. The core idea of this business is about a remote healthcare service to elderly and disabled people in

Eastern Finland. Customers' health will be monitored by a device called E-Health monitoring agent (EMA). These EMAs can be with customers everywhere they go to do basic health monitoring activities such as ECG (heart rate monitor), blood pressure, temperature, etc. These health data will be wirelessly transferred and processed by the E-Medical Centre with advantages in monitoring health statuses, immediate responses, and correct actions to changes in a customer's health.

Firstly, the result of this study is a useful source for the author. Furthermore, it can contribute valuable information for those who wants to start a business in the medical sector.

Thesis objective

The purpose of this thesis is to make an effective business plan based on a business idea. Moreover, the author wants to analyse the possibility, potential profitability, demands, risks of the venture, and to evaluate the success chances of this business plan when implementing it in reality.

In order to achieve these goals, these issues will be focused on this thesis: The current situation of the Finnish healthcare system, potential demand of E-Medical Centre in Finland, target groups of this service as well as marketing and financial plan.

The scope and limitations

This study starts with the definition of a business plan, elements of business planning and information about how to start up a business in Finland. Then the current healthcare system and the medical industry will be analysed as a market research. The empirical part is about planning a business for a medical centre which will be first located in Eastern Finland. The structure of this study can be organized as follows:

The Literature review section gives an overview about business plan and how to make a business plan. It provides information about business idea, business plan definition, elements needed to make an effective plan and the setting up process.

Information on establishing a business in Finland helps entrepreneurs to have some basic information and requirements about starting up a business in Finland and where they can get support to run their businesses.

Market research is an essential part, because it indicates the potential demands and successful chances of this plan. Industry overview, market analysis through data collection, questionnaires are conducted in this section. Market research is the base of a business plan.

Business plan includes all information which is needed to set up the new medical centre such as business background, marketing plan, financial plan, operational plan, etc.

The conclusion provides useful and valuable information to the reader about the process of establishing the new medical centre in Eastern Finland.

Throughout this thesis, the author wants to emphasize the business idea and the planning process, not to focus on the cash flow statement in detail. This will be done by third parties in reality. Hence, these parts will be covered in support meaning or reference.

2 BUSINESS PLANNING

A business plan is a critical road map for entrepreneurs to start up their business. It can be seen as the result of a thorough research (Deakins 1999, 254). The plan includes the description of the business idea, executive summary, the marketing strategy and the financial planning with provisional cost, lost and profit statements. (Entrepreneur, 2014.)

This plan is considered as a tool to show the owner's intention with his or her business. Besides this, it can be used in negotiation with potential funders, partners or suppliers, etc. Moreover, when doing a business in Finland, the entrepreneur needs to submit a business plan to Employment and Economic Development Offices for funding or Economic Development, Transport and the Environment (ELY) for business subsidies. (Uusyrityskeskukset 2014, 10.)

Before writing a business plan, the entrepreneur should identify the viewer/reader exactly in order to give the right information and get good responses. Depending on the audience, there are different ways to approach. For instance, the business plan for raising money is dissimilar from the one for running own business. The plan for investors will be focused on how good it is in return with low risk. The plan about running own business concentrates on the idea, the management, personal development, etc. Understanding the target audience will help the entrepreneur give clear information and the right message. (Finch 2010, 2-3.)

The planning process will give an explicit view about the road which the entrepreneur has to go to reach the goal. In order to get to the destination successfully, he or she should have answers for these questions: Where are you? Where do you want to go? These two questions will help to define the position and how far he or she must go. A careful plan will increase the opportunity of getting there. (Burns 2007, 377.)

2.1 Business idea

The most important thing for every entrepreneur to establish a business is an idea. A business idea demonstrates what the entrepreneur intends to do, to whom it will be sold and how to implement it in reality (Uusyrityskeskukset 2014, 9). Business idea can

be formulated by past experiences, work, training, and education, the combination of them is called “human capital”. It can be generated by the influence of family, friends or creativity of the entrepreneur as well. (Deakins 1999, 51-52.)

Most people, some times in their life, have an interesting idea and want to do it, but only a few people take action. There is a block of reasons which prevents people from turning an idea into a business. These obstacles may derive from internal factors, e.g., regular income needed, a family to support, no capital, doubts of ability or from external factors, e.g., economic environment, policies, culture, religion, etc. Entrepreneurs need strong motivations which can be formed as push and pull factors to start up their businesses. Figure 1 describes the way of business establishment. (Burns 2007, 98-99.)

Push factors are those that put people into self-employment. Such factors are unemployment, conflict with the management/manager, or no other alternatives due to health condition, etc. (Burns 2007, 98-99.)

Pull factors are those that help the business grow such as independence, achievement and recognition, personal development and wealth, etc. (Burns 2007, 98-99.)

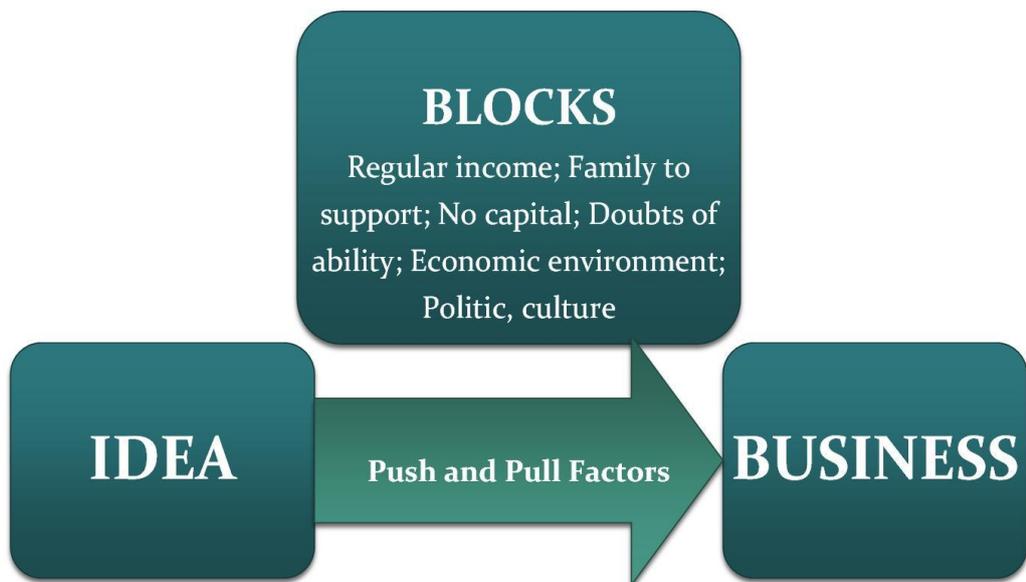


FIGURE 1.Reasons for business establishment (Burns 2007, 99.)

Even though the entrepreneur has a good idea and strong motivations to turn it into reality, it does not guarantee a successful business. Implementation of a business idea requires personal skills, qualities, as well as financial supports. To increase the chance of a successful business, entrepreneurs should make a business plan carefully and answer these basic W-H questions (What, to Whom and How): What is the product or service? What makes the product be different from others existing in the market? Which is the target market? Or to whom will the product/service be sold? How to sell this product/service in that market? (Uusyrityskeskukset 2014, 9). Besides this, the entrepreneur should also make a research about competitors and the competitive edges. From this point, he/she can estimate the cost of operation and other related works through a provisional financial plan.

2.2 Elements of a business plan

There is no exact form of a business plan. It may vary from time to time, case to case and depend on many internal and external factors. However, as shown in Figure 2, all the forms should include the following critical information: Executive summary, business background, market analysis/research, marketing strategy, operational and financial plans. (Burns 2007, 376.)



FIGURE 2. The Business plan content (Burns 2007, 376.)

Executive Summary is considered as a doorway to the business plan. It introduces briefly about the business, products/service and makes the very first impression to the funders. Target of the executive summary is to sell the idea and the business to investors, convince them of a good idea and a good plan. Hence, although it is the first section, it may be the most difficult part of the business plan and should be written after all other parts are completed. The length of this part should not be long and all strength points should be highlighted to get better impact on the viewers. The executive summary includes information about company, product/service, target market, competitors, financial information and future plan. (Berry, 2010.)

Business background can be seen as the motivation to the business. It will give information about vision and mission statements, company goals and objectives, business philosophy, brief information about industry and market, also the legal form of ownership. The target of this part is to draw the map for the readers to understand the detail in the body of the plan. (Entrepreneur, 2014.)

Description of product/service includes detailed information about technical specifications, functions, what makes it become different/stand-out, and services coming along with it. (Entrepreneur, 2014.)

Market analysis and market research indicate the industry and the market structure. It usually encompasses a wide range of market information such as industry description, target market, projecting market share, customers, competitors, etc. No matter how good the idea is, the business cannot go far without an effective marketing plan. And a good marketing plan normally starts with an in-depth market research and analysis. There are two types of market researches: *primary research and secondary research*. Secondary research means collecting information from published resources such as historical industry profile, magazines, newspaper, etc. Primary research is gathering own data by making surveys, interviews, etc. Both methods should be used to help the entrepreneur be acquainted with all aspects of the market. With this, entrepreneurs can identify the target market, set the price, and make a distribution, promotion plan. This section also includes information about competitors and competitive advantages of the product/service. (Entrepreneur, 2014.)

Marketing strategy starts with SWOT analysis. It helps the business owner define his/her position and answer two questions: Where are you? Where do you want to go?

(Business Vision and Mission Statement). A marketing strategy can be seen as the plan how to get there. This section can be divided into three parts: analysis, formulation and implementation. While the strategic analysis provides a deep-understanding about the business's strengths, weaknesses, opportunities and threats; the strategy formulation identifies strategic options, then evaluate and select the strategy. The last part is implementation. (Burns 2007, 253-257.)

Operational plan illustrates the daily routine of business, location, equipment, people and other surrounding elements. This part also includes information about legal requirements, personnel management, inventory, suppliers, distribution, etc. (Entrepreneur, 2014.)

Financial plan indicates a profit and loss projection, a cash-flow projection, a projected balance sheet and a break-even calculation. (Entrepreneur, 2014.)

2.3 Business environment

Business environment analysis plays an important role in making a business plan. It can help entrepreneurs increase the success chance by providing a deep understanding about influential factors. The business environment is a complex one, including legislation, customers, competitors, suppliers, etc. It is a combination of all external and internal factors, which have influence to strategic decisions. Business environment is divided into two areas: internal and external environment. Usually, the strategic manager focuses on the external environment. However, they both have the same important positions in making a strategic plan. Understanding of market environment will help entrepreneur know about the strengths, weaknesses (internal factors), opportunities as well as threats (external factors). Although Blythe (2005) and Armstrong & Kotler (2014) emphasize different aspects of the external environment, they all agreed that external environment consists of micro-environment and macro-environment. Micro-environment includes all factors close to the operation of the company, such as suppliers, competitors, customers, etc. The macro-environment refers to the larger scale of influence forces, which come from society, for instance, demographic, economic, natural, technological forces, etc. (Blythe 2005, 23-26; Armstrong & Kotler 2014, 93). Figure 3 gives the chart diagram of the business environment.

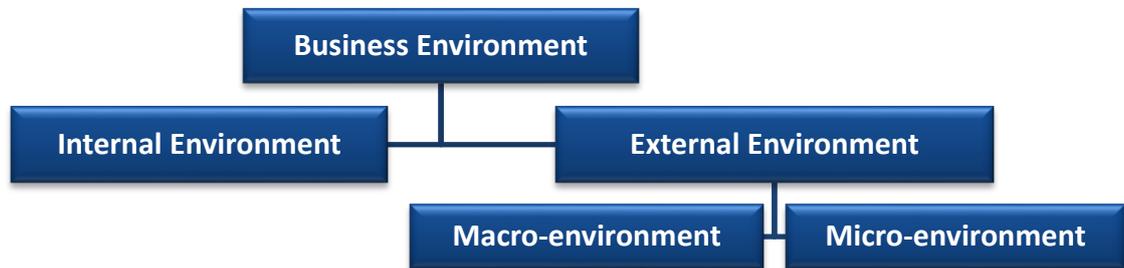


FIGURE 3. Business environment – Blythe 2005, Armstrong & Kotler 2014

External Environment refers to outside factors, which surround and influence to the business operations. The external environment describes the picture outside company, and point out the opportunities as well as the threats. It consists of the macro - environment and micro-environment.

The macro – environment is about uncontrollable factors, which have an impact on organization’s strategies and decision-making. The strategic manager needs to adjust the plan and adapt to the environment to get the success. Macro – environment include six major forces: Demographic, Economic, Natural, Technological, Political, and Cultural. (Armstrong & Kotler 2014, 96.)

Demographic environment includes many aspects of human population, such as size of population, density, age, gender, occupation, lifestyle, etc. Demography is important to the marketers because its change will affect to market structure, which will require the change of marketing strategy. Besides, there are several trends in demographic environment that might influence to the achievement of many companies: The ageing population in developed countries; the raising of educational levels in developing countries – which lead to higher income and more ability to purchase additional goods and service; the increase of immigration; the decrease in the marriage rate in developed countries. (Armstrong & Kotler 2014, 96.)

Socio – cultural environment consists of norms and values, attitudes and behaviour of individuals in a specific society. Beliefs and values are passed from generation to generation with high persistence. Cultural factors have significant impact on how people perceive and consume. Therefore, understanding the cultural trends in the target market will help the marketers adjust the plan to fit the customer’s requirement. (Armstrong & Kotler 2014, 110-111.)

Natural environment includes both physical environment and the natural resources which are needed as inputs or affected by marketing activities. It is no doubt that business operation significantly depends on the natural environment. The effect of changes in natural resources or in weather condition is dramatic. For instance, the warmer winter will make the sales of winter products decrease; the shortage of fuel will lead to the rise of producing cost, etc. Hence, marketers should pay attention to the changes of this factor and adjust the plan in order to maximize the revenue of the company. There are five trends which are happening now in the natural environment factor: the shortage of raw material, the rise of energy cost, increase of pollution, changing of government role, and environmental sustainability strategies. (Armstrong & Kotler 2014, 104-105.)

Political environment comprises of the laws, legislation, government agencies, and other pressure groups which have influenced to organizations and individuals in the specific society. The legal environment has a direct effect on business. Nowadays, expanding business to other countries is familiar with many companies; legislation becomes the “fence” for government to protect local businesses. Hence, it is more and more difficult for business to take action without meeting with laws, regulation, or legal problems. (Blythe 2005, 33.)

Economic environment comprises all economic elements which have influence to consumer purchasing power and spending patterns. They are the payment balance, business cycle, income distribution, monetary and fiscal policies, interest rate, etc. Its impact may vary from industry to industry. Before entering any market, marketers should consider this factor carefully, because it may affect to the consumer spending, which will influence to the final revenue of the company. For example, when the economy goes into recession, jobs are cut down, businesses go bankrupt. In this situation, people become less willing to pay for capital items, such as house, cars, etc. In contrast, when income grows, consumers spend a lot of money for house goods likely without caution. (Armstrong & Kotler 2014, 103-104.)

Technological environment refers to elements by which new products are being developed or existing products are being improved. In modern society, technology is associated with human life. It impacts on many aspects of our life, such as, the way people connecting, shopping, working, as well as producing goods. Technology is changing day by day, so that the marketers need to update their plans regularly to keep

pace with the changes. It brings new opportunity to company as well as threats and problems. (Armstrong & Kotler 2014, 106.)

The micro – environment has five important elements. They are: Suppliers, Intermediaries, Competitors, Publics, and Customers. (Blythe 2005, 27.)

Suppliers In the modern market, suppliers are considered as company's partners in creating and delivering customer value. The company relies on the good performance of its suppliers. Supplier problems can lead to serious impact on customer value delivery network. For example, inappropriate materials may affect to the quality of products, not-in-time delivery will delay the producing and increase the cost. Therefore, the company needs to keep a close relationship with their suppliers to ensure they will provide right required materials, service in time at right place. To strengthen this relation, suppliers and purchasers should regularly exchange information; frequently visit each other, etc. (Blythe 2005, 30; Armstrong & Kotler 2014, 93.)

Intermediaries refer to all individuals, organizations, companies between customers and the company. They are retailers, wholesalers, distribution companies with transporting and warehousing service, etc. Intermediaries play an important role in the customer value supply chain. They help the company find customers as well as bring products to them. Nowadays, the power of resellers becomes stronger. Partnering with existing resellers or designing own distribution channel is not an easy mission, especially with small companies. Intermediaries also refer to some marketing service agencies, such as, marketing research firms, promotion, advertising agencies, etc. They will help companies identify and advertise their products to the right markets. Realizing the importance of intermediaries, many companies see them as partners rather than a channel. Maintaining a close relationship with them will help to optimize the entire chain performance and bring better service to the final customers. (Armstrong & Kotler 2014, 94.)

Competitors are not only mentioned about direct competitors, but also indirect one. They are those who offer closest substitutes in terms of satisfying customers' needs, for instance, competitors of a physical clothes store are from other physical one as well as online shops. Market segmentation will group customers according to their needs and characteristics. Each segment has different demands; therefore the competitors will come from different sources in each segment. To succeed in the market, the

company must provide greater value and satisfaction to customers than their competitors. Hence, competitive strategies are not only about satisfying customers' needs, but also strong recognised products in customers' mind. According to Blythe, there are four types of competitive structure. **Perfect competition** refers to a large number of suppliers compete with the same products. None of them can have enough power to influence the market so that it is easy to entry to the market. **Monopolistic competition** is the situation which one major supplier, with differentiated marketing approach, gains the largest share of the market. In this situation, other companies are still capable to enter the market in order to get their own market share. In **Oligopoly**, few big companies control the almost entire market due to the high entry cost and long time in the ROI. **A monopoly** exists when a single company provides a product to the entire market without substitutes and close substitutes. (Blythe 2005, 28-29; Armstrong & Kotler 2014, 95.)

Publics are all groups that have an interest, potential interest or influence to the business operation. They can be divided into seven types: Financial, Media, Government, Citizen-action, Local, Internal, and General Publics. Financial publics are those can have an impact on the company's ability to obtain funds. Media publics are magazines, newspaper, television stations, internet, etc. They are responsible for carrying news, giving opinions, evaluations. Government development is needed to take into account when doing business. The operation of the company may be questioned by consumer organization, environmental groups, etc. They are all Citizen-action publics. Local publics include neighbourhood residents and community organizations. Internal publics refer to groups from inside of a company, such as workers, managers, board of directors. General public's attitude toward the product/service may affect the buying decision. (Armstrong & Kotler 2014, 95.)

Customers This is the most important factor in the micro - environment. The purpose of the value delivery network is to satisfy the needs and build a strong, sustainable relationship with target customers. There are five types of customer market: Consumer market, Business market, Reseller market, Government market, and International market. A company might target any group among them. Each market has different characteristics which will require seller carefully research about it. (Armstrong & Kotler 2014, 96.)

Internal environment

The internal environment illustrates the company's strengths and weaknesses by analysing the influence forces from the inside of the company, including the vision, mission and objectives of the company, organizational culture, structure, employees, managers, etc. The firms' internal environment can be considered as a microcosm of the external environment because employees in each organization/company tend to categorize into different groups. Employees in a group work under the same language, share the same working culture, and have their own laws and regulations, hierarchy, etc. From the managers' point of view, these internal environmental factors are as important as the external one. Since all of these elements will affect to employees' attitude, its problems will be affected to the public face of the company. Every company has their own culture and structure, therefore none of business has the same internal environment. Doing marketing is not only about activities outside company, but it should be taken inside company as well in order to motivate the employees also (Blythe 2005, 37). Figure 4 summarizes the internal and external environments of a company.



FIGURE 4. Internal and External Environment (Armstrong & Kotler, 2014.)

2.4 Establishing a business in Finland

Finland is located in Northern Europe. It is bordered by Sweden to the west, Russia to the east, Norway to the north and Estonia to the south, respectively. During the last decade, Finland has transformed its economy to become one of the most competitive economies in the world by strong growth, innovation, and structural reforms. Engineering and high-tech industries have become more important recently, when they attract more investment from inside and outside Finland. (OECD, 2014.)

Finland is a good place for entrepreneurs to start up their business with many available support forms from public and private sectors. According to the Business Register of Statistics Finland, there are 322,183 enterprises operated in Finland in 2012, SMEs (Small-Medium Enterprises) represented about 99.8% of total enterprises. Among them, there are around 6500 businesses which were set up by immigrants or foreigners. Business can be established in Finland by a private entrepreneur, an organization or a corporation. (Findicator, 2013.)

According to Finnish Patent and Registration Office, there are four forms of business in Finland: Private Trader, General/Limited Partnership, Limited Liability Company and Co-operative. Procedures for establishment of Private Trader and General/Limited Partnership are generally simple, while those for Limited Liability Company and Co-operative are more complicated. Table 1 is the lists of registration forms of business in Finland. These forms can be found on the webpage of Finnish Tax Administration. This website is available in Finnish, Swedish, and some of the contents are translated into English. Entrepreneurs can find some instructions and forms in other languages as well. (Vero, 2014.)

TABLE 1. Forms of Business in Finland (Finnish Patent and Registration Office, 2014.)

	Private Trader	General Partnership	Limited Partnership	Limited Liability Company	Co-operative
Number of owners	1 natural person	At least 2 partners	At least 1 general and 1 silent partner	At least 1 shareholder, 1 ordinary member, and 1 deputy member in the board of directors.	At least 1 persons (the founders may be natural or legal persons)
Capital requirement	No	No	General partner: No Silent partner: Capital investment	Share capital at least 2500 Euro	Participation shares, no minimum capital
Representatives	Private trader	The partners	The general partner	The board of directors	The board of directors
Decision making	Private trader	In accordance with the partnership agreement	Responsible partner	General Meeting, Board of Directors and Managing Director	General Meeting, Board of Directors and Managing Director
Registration to the Trade Register	Possibly	Yes	Yes	Yes	Yes
Trade Register handling fee for a start-up notification	105 Euros	225 Euros	225 Euros	380 Euros	380 Euros
Notification form	Y3	Y2	Y2	Y1 + Appendix form 1	Y1 + Appendix form 2

In the case that the entrepreneur is not a resident of the European Economic Area (EEA), he/she may need a trade permit from the National Board of Patents and Registration (NBPR). This application includes personal information of the entrepreneur such as name, address, citizenship; information about the company/organization; and he or she should state clear reasons why this permit should be granted. Some trades need particular licenses. There are three categories of trade

licenses: license to engage in a trade; license to launch a business at the intended location; license related to the required professional qualification. (Vero, 2014.)

Enterprises are also required to file a Start-up Notification form, with this form they can apply for trade register, VAT, employer register, etc. There are three forms for different types of businesses: (Vero, 2014.)

Y1: foreign-registered corporations

Y2: foreign-registered partnerships

Y3: foreign self-employed businesses or professionals. (Vero, 2014.)

For taxation, besides Y forms, enterprises need to enclose the foreign certificate from the trade register and a detailed description of the business. All documents are sent to PRH-Verohallinto, Business Information System. The Finnish Tax Administration will analyse and determine if the company can be considered to have a permanent establishment in Finland. (Vero, 2014.)

Business establishing process and funding sources

When entrepreneurs decide to turn ideas into a business plan and set up the business, they will have many things have to be taken care of such as funding options, financial opportunities, tax arrangement, etc. They also have to choose a form of business which is the most suitable for them, then some paper/permit requirements. A business establishment does not have many steps, but the entrepreneur should prepare for additional or alternative options. These steps can be summarised as shown in Figure 5. (Vero, 2014.)

Entrepreneurs can find financial support from many public and private organizations such as Tekes, Finnvera, Sitra, Centres for Economic Development, Transport and the Environment, etc. They can also raise capital from other private organizations around Finland. Figure 6 describes the general funding sources for entrepreneurs. (Vero, 2014.)

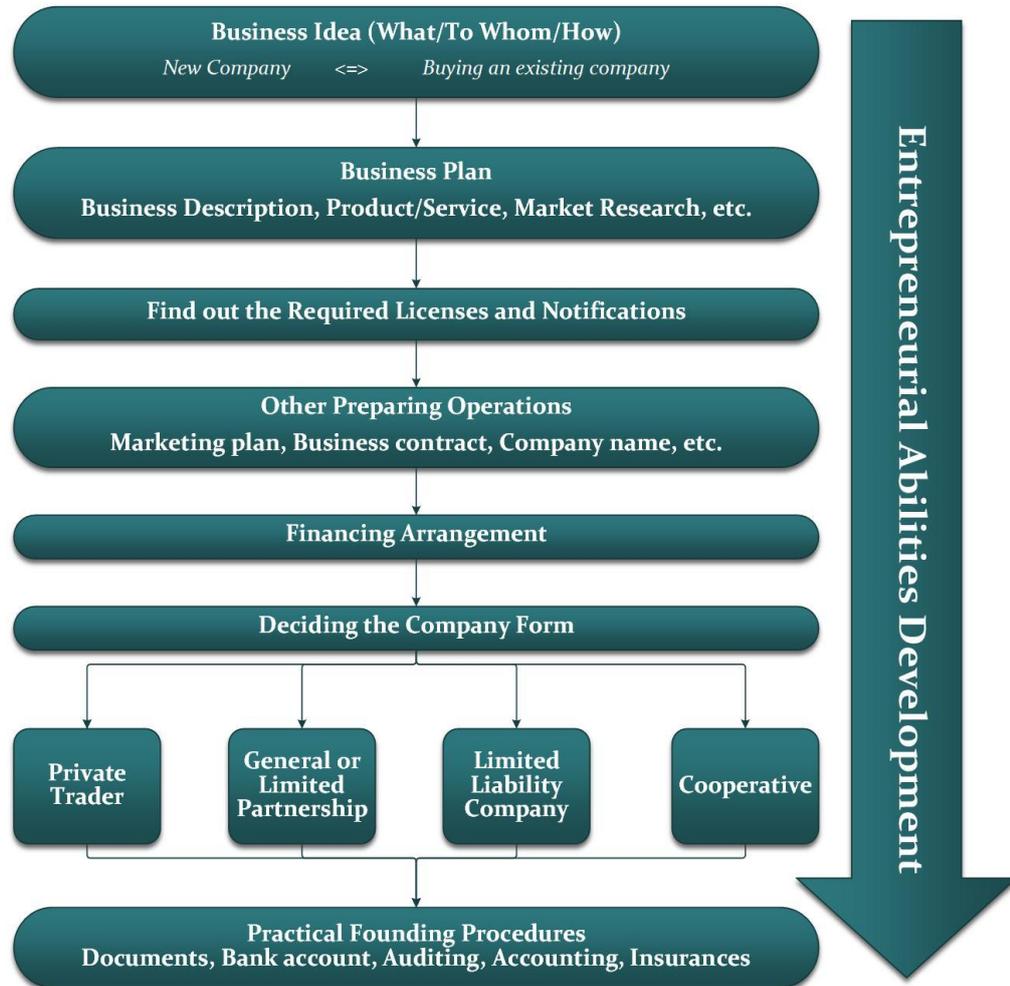


FIGURE 5. A business establishing process (Uusyrityskeskukset, 2014.)



FIGURE 6. Funding sources for enterprises (Uusyrityskeskukset 2014, 10.)

3 FINNISH HEALTHCARE SYSTEM AND MEDICAL DEVICE INDUSTRY

Like other developed countries, the Finnish healthcare system is facing with several problems, i.e., the shortage of workforce since the retiring time of “baby boom” generation is about coming, the increase of health expenditure, the burden on healthcare service, etc.

The rise of health expenditure

Most of the European countries were impacted by the economic and financial crisis in 2008-2009. The strong increase of government deficit and public debt placed many European countries in difficult situations. Finland was also influenced on some export-oriented industries and domestic sectors. Finland healthcare service was funded by municipal taxation and state grants, thus the crisis did not have the direct effect on the service sector but on the tax revenue. In general, the budget for healthcare has been lower than the operating demands. The obvious impact since the cost was cut down is the increasing of waiting time and the patients in the waiting lists. This lowers down the service quality as well as the patient satisfaction. (HOPE 2011, 65-66.)

Health expenditure has increased within most categories except health administration costs. In 2012, the Finish health expenditure, which was around 17.5 billion Euros, increased 0.4 percent in comparison with the previous year. Health expenditure per capita amounted to 3,229 Euros. In which, expenses on specialised and primary healthcare counted for more than half of the total in 2012. (Statistic, 2014.)

According to the Economist Intelligence Unit, the rising of health expenditure in Finland and European countries may arise from:

The ageing population with the rise of chronic diseases

While the life expectancy is higher, the chronic diseases also go up. Elderly people are easy prey for chronic diseases because of the deficiencies in genetic makeup. When the defective genetic reaches to a critical level, it will cause chronic diseases. According to one research from The Economist Intelligence Unit, there is a gap which is approximately seven to ten years between life expectancy and healthy life

expectancy. If the government and municipalities do not manage healthcare expenditure efficiently, the cost for chronic disease treatment can be counted up to 70% of health expenditure. Most of these costs will come to hiring nursing staff to take care of sick elderly people. (The Economist 2011, 9.)

The development of healthcare technology

The development of technology improves the chances to survive for humanity. But it also leads to the rise of costs in R&D, new medicines as well as new medical equipment. (The Economist 2011, 10.)

The growth of demand due to the increased knowledge of options and less healthy lifestyles

There are two main reasons lead to the growth of patient demand: the increased knowledge and the unhealthy lifestyles. Nowadays, when searching information through the Internet is a common thing, patients can approach and demand for the latest/newest medical innovation, which is also the most expensive one. The reason is that people may suspect that the healthcare system does not offer them the necessary medical treatment they need. On the other hand, the modern lifestyle which is not healthy will cause many chronic diseases, such as type-2 diabetes, obesity, heart diseases, etc. These diseases need to be treated in long-term and that increases the medical costs. (The Economist 2011, 7-9.)

The shortage of workforce in healthcare sectors

The shortage of workforce in healthcare sectors will be the future problem, especially in primary healthcare, mental health services, dental care, and student healthcare. In Finland, the labour force in social and healthcare service sectors are around 16 percent of the national workforce. And approximately half of them will retire in the next ten years, while the social and healthcare education has not got the capability to respond to the growing needs yet. (Malcolm, 2012.)

There are several reasons that lead to this shortage of workforce, such as rapid ageing of the Finnish population, requirement of future skills due to the increasing of chronic diseases and new treatments, difficulty in recruiting and retaining healthcare staff

because of low pay, long working hours, stress or work life balance problems, etc. (HOPE, 2012.)

Therefore, many reforms in this sector are proposed, for instance, increasing the study place in healthcare universities every year; finding new methods/systems to reduce the number of intensive medical centres, and remaining or improving the quality of service; innovating medical tools/equipment, etc. Among them, E-Health emerges as an innovative solution for the public sector to increase the quality and productivity of healthcare service. (European Commission 2012, 5-9.)

3.1 Finnish Healthcare System

The purpose of this part is to give an overview about the Finnish healthcare system. From this point, the author positions the business to be suitable with the Finns and adapt itself to the current system.

In modern life, education and healthcare service are the most essential sectors. They are key factors to ensure the sustainable development of each country. According to OECD Indicators, Finland has been known as the developed country with high quality of education and healthcare service. This achievement was from the reform in 1980s. (OECD, 2013.)

After World War II, Finland with Turkey and Albania are countries who had the lowest density of doctors in Europe. However, things have changed since the 1960s, when the primary healthcare centres were set up. In only a few decades, the Finnish healthcare system has been improved from a basic system to a high quality system, which is acclaimed by international community (Sitra 2009, 21). The life expectancy of Finnish people has increased by approximately 25 years in a century. It is around 76 years for men and 82 years for women. Every permanent resident in Finland has the right to access full healthcare service. (OECD, 2013.)

The current system has been monitored in two levels: National and Municipal.

From the national level, the Ministry of Social Affairs and Health (MSAH) is responsible for the policies, legislation and decisions on the reform process. Besides this, MSAH monitors and oversees the implementation of healthcare service via the Regional State

Administrative Agencies and the National Supervisory Authority for Welfare and Health. (MSAH 2013, 11.)

The municipal level will be in charge of organizing the provision of social welfare and healthcare service. They can arrange the service independently or outsource it to non-governmental organizations and private service providers. The scale and scope will be different between regions and decided by local authorities, depending on the population and conditions of each city. Operations and services are financed by municipal tax revenue and state grants. (MSAH 2013, 11.)

Municipalities will form hospital districts, where special treatments will be provided. Hospital districts are responsible for special medical care service and monitor the quality of municipal laboratory, education, training, etc. There are 20 hospital districts in mainland Finland and each of them belongs to one of the five university hospitals: Helsinki University Central Hospital, Kuopio University Hospital, Oulu University Hospital, Tampere University Hospital, and Turku University Hospital. (MSAH 2013, 13.)

Recently, private healthcare service has been provided widely in Finland. This is done by enterprises, non-government organizations/foundations, etc. These private providers need to be licensed to ensure the quality of healthcare service. Most of them are operating in southern Finland with physiotherapy, doctors' surgeries, dental care and occupational healthcare (MSAH 2013, 14.). Adding to the population ageing and the burden on the public sector, the rise of private providers in healthcare is an opportunity as well as a challenge for entrepreneurs to establish their business.

Overall, the Finnish healthcare service has been provided by two parallel systems: the municipalities and the private system. Although the occupational healthcare service has been also provided by both municipal and private system, it is usually seen as third care delivery channel with its own funding and different legislation. . (MSAH 2013, 11.)

The diagram in Figure 7 summarises the structure, sponsoring, provision and supervision of Finnish healthcare services.

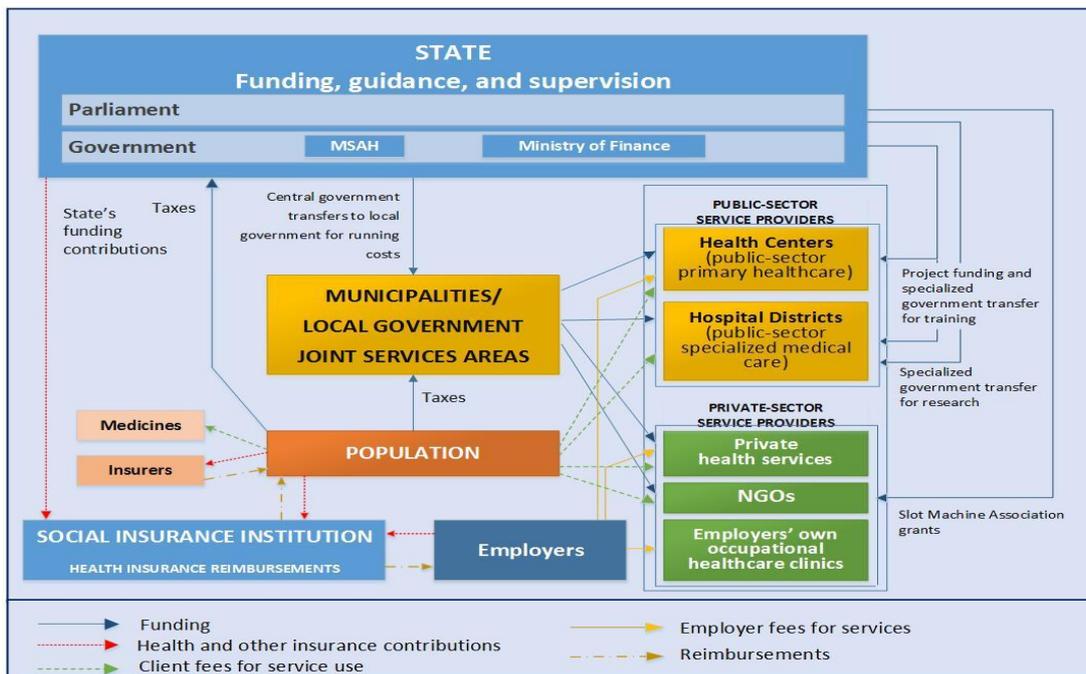


FIGURE 7. Organisation, funding, provision and supervision of healthcare services (MSAH, 2013.)

3.2 Healthcare technology and Medical device industry in Finland

This section will show the latest trend in the medical device industry with general information about the market, current situations, e-health solutions as well as the prospective development in this field.

Definition of medical device

The Finnish Medical Device Act defines “medical devices” as: any article, machine, tools, software, or apparatus that is used alone or in combination with the purpose of prevention, diagnosis, or disease treatment, etc. Medical devices also include all instruments, which are used for detecting, measuring, controlling, investigating and modifying the function of the body for any health purpose (Segercrantz & Haapanen 2011, 1). In short, any device that can be used for analysing the data gained from people, involving in checking, curing, or changing people’s health is called a medical device. There are about 500,000 medical devices existing in the global market, including basic to complex products, for instance, pregnancy tests, temperature measurement, bandages, contact lenses, MRI scanners, surgical

instruments, etc. Despite of the diversity of medical devices, all of them are categorized in 16 groups of products presented in Table 2. (WHO, 2014.)

TABLE 2. Classification of medical products (MedTech Europe 2013, 3.)

<i>Code</i>	<i>Classification</i>	<i>Examples</i>
01	Active implantable technology	Cardiac pacemakers, neurostimulators
02	Anaesthetic and respiratory technology	Oxygen mask, anaesthesia breathing circuit
03	Dental Technology	Dentistry tools, alloys, resins, floss, brushes
04	Electro mechanical medical technology	X-ray machine, laser, scanner
05	Hospital hardware	Hospital bed
06	In vitro diagnostic technology	Pregnancy test, genetic test, glucose strip
07	Non-active implantable technology	Hip or knee joint replacement, cardiac stent
08	Ophthalmic and optical technology	Spectacles, contact and intraocular lenses
09	Reusable instruments	Surgical instruments, stethoscopes
10	Single use technology	Syringes, needles, latex gloves
11	Technical aids for disabled	Wheelchairs, walking frames, hearing aids
12	Diagnostic and therapeutic radiation	Radiotherapy units
13	Complementary therapy devices	Magnets, moxibustion devices, suctioncups
14	Biologically-derived devices	Biological heart valves
15	Healthcare facility and adaptations	Gas delivery systems
16	Laboratory equipment	Most IVD which are not reagents

According to Valvira (National Supervisory Authority for Welfare and Health), the medical device can only be sold in the market or used in the service in Finland if it has complied with existing regulations. Producers must ensure that all the device functions work well in required conditions. CE marking is compulsory to prove that the device conforms to the requirements. Valvira is responsible for monitoring the compliance of medical devices with regulations and all the promotion of them in Finland. (Valvira, 2014.)

Healthcare technology and medical device industry in Finland

For a long time, the Finnish economy was only known as the country with strong forestry, hosting the largest mobile phone manufacturer in the world. Recently, people have talked more about another success story of Finland. It is a healthcare technology sector exporting over 90 percent of production. It was highly developed and mature. Even though in recession time, healthcare technology industry kept growing steadily. For decades, innovation and development of technology solutions in healthcare made Finland place on the top of the medical device producers and exporting countries. Finland is one of seven countries which have the number of health-tech bigger in exporting than importing. In 2012, the export sets a new record of €1.65 billion and became the second largest high-tech sector with 38 per cent of total high-tech product exports in Finland. The leading market of Finnish health-tech products is the USA which counted 35 per cent of total exports in 2012. Following are the EU countries with Germany being the main market. The third largest market is Russia (FiHTA2013, 3-9). Pie charts in Figures 8 and 9 indicate the important markets of Finnish medical devices.

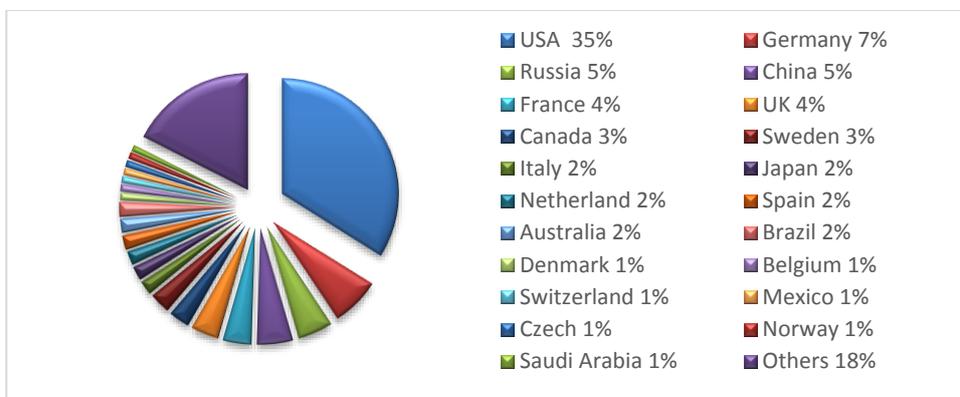


FIGURE 8. Finland's Exports of Healthcare Technology in 2012 (FiHTA 2014, 23.)

In 2013, there were some changes in the exporting markets. The first and second largest market were unchanged, although the exports to the USA declined by 9%. The exports to China and Hong Kong increased significantly, up to 19%. The exports to Canada and Mexico also increased 10% and 40% respectively. (FiHTA2013, 3-9.)

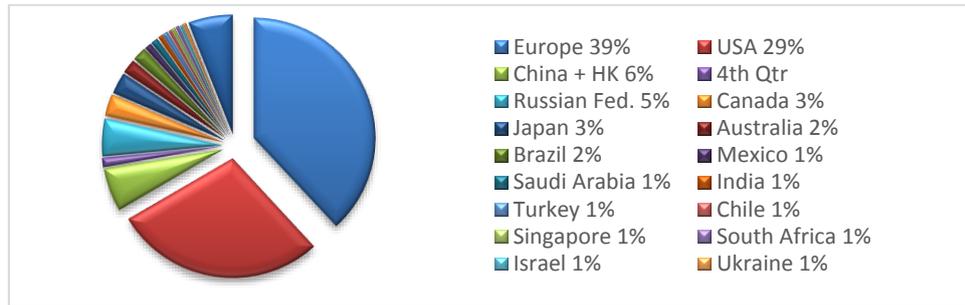


FIGURE 9. Finland's Exports of Healthcare Technology in 2013 (FiHTA 2014, 3.)

The main products of Finnish medical device industry are high-tech medical systems for professionals, disposable tools and consumer-related health devices. There are approximately 100 companies which are currently working in the medical device manufacturing sector in Finland. Fifteen of them produce dental-related products. Most of these companies are located in Helsinki, Turku, Tampere, and Oulu region. Finland contributes 5.2% of the European workforce in the medical device industry. It is an impressive number in comparison with Finland's total population of five million people. (Infodent International 2009, 13.)

The success story is the result of a good co-operation between industry, university and local hospitals. However, not all countries with the same conditions will succeed as Finland has done. The sustainable development of Finland is believed to arise from the suitability of business model with the work ethics of Finnish scientists and engineers, the result of an education system, the requirements from society, the absence of society hierarchy and the gender-equality. The societal structure helps Finns work in teams efficiently and the co-operation between engineers, nurses, and doctors is easier than other countries. The gender-equality helps the products to be designed more user-friendly since most of the end-users are female nurses. On the other hands the Finnish government encourages entrepreneurs to start up their business in this sector by capital funding through Tekes or other programs. Although the sector has been developed for decades, there is still room for entrepreneurs see opportunities health-tech can offer. (FiHTA 2014, 9.)

Emerging trends in Finnish healthcare technology

There are several existing trends in Finnish healthcare technology. First of all, there are the 2D and 3D technologies applied in healthcare. For instance, there are 2D and

3D digital dental imaging devices, which are made in Finland and exported to many countries. Finland has been known as the pioneer in laboratory automation where robots will be responsible for doing and checking the experiments with thousand tubes and input data to the systems. This trend starts from the requirement of society, while the ageing population leads to the insufficient skilled labours. Self-tracking is also going up in Finland. Nowadays, when people care more about their health with the increase of many chronic diseases, self-tracking equipment becomes familiar to many people. These devices can help people checking and monitoring their health in daily life without help from the nurses. They can perform some basic functions such as ECG, temperature, blood pressure, etc. Kone is one of several enterprises to advise their employees to use self-tracking equipment in order to monitor and improve their health. (Heikkinen & Teivainen, 2014.)

The latest and most famous trend recently in Finland is the increasing number of wireless solutions in medical technology. The best evidence of this trend is Oulu with its healthcare ecosystem. With this system, people can engage with their doctor directly through electronic communication, checking the result of blood test electronically and make an appointment with their doctors online. Besides, this system helps to collect data to the bio-banks, which human biological samples and associated data are stored. From this, professionals can build some preventative service and give a guide to citizen for better healthcare. (Badham, 2014.)

4 THE RESEARCH ON THE POTENTIAL DEMAND OF E-MEDICAL CENTRE

Various research approaches are used to analyse business environments. The most common one is to collect information from previous studies, official or unofficial published sources, magazines, newspaper, journals, etc. Gathering information from existing sources only gives an overview of the business environment. For a deeper understanding, other methods will be applied. A small discussion with customers, focus group, can provide many ideas for new marketing programs. A survey can help marketers define the problem in wide range. These methods should be used in parallel to get better and more accurate results. (Kumar et al. 2002, 9-10.)

4.1 Research methods

The key to successful business is the understanding customer's demand, and offering the right products to satisfy their needs and wants. Market research is the process of collecting, gathering valuable information to give a comprehensive view of consumers so that the business owners, strategic managers, can understand their customers clearly. It provides Accurate, Relevant, and Timely (ART) information. The result of this process will help the owners determine whether he or she should provide this product/service to the market. (GWA, 2014.)

The market research process includes: Finding the issue, translating it into a research project, making a survey questionnaire according to the research problem, gathering information from the survey, analysing the result, reporting and implementing in marketing decisions. (Kumar et al. 2002, 3-4.)

Research purpose and objective

Business owners do the research for many purposes, for example, potential customers' identification, understanding existing/current customers, feasible targets, strategy development, etc. The research purpose consists of the common understanding between the manager and the researcher about the problems, opportunities, decision alternatives and the users of the research results. Before carrying out any research, the owners, strategic managers, researchers should set the objective. The objective of the research has three phases. The first stage is the research question, and then the

development of hypotheses and the last stage is the boundaries of the research. It helps the researchers determine the appropriate methods such as conducting an interview or making a survey, etc. A clear objective will bring better result to the research (Kumar et al. 2002, 50-54). A summary of research purposes and objectives is presented in Figure 10.

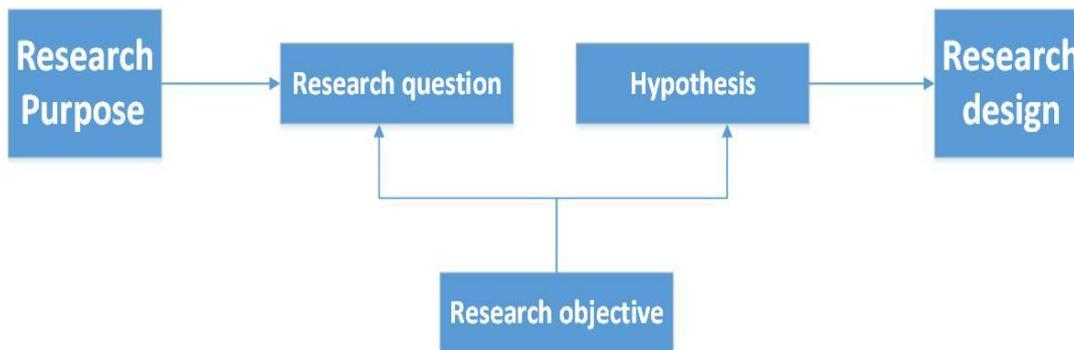


FIGURE 10. Research purpose and objective (Kumar et al. 2002, 57.)

The hypothesis of this business plan is that there is a demand for E-Medical Centre in Finland, especially in Eastern Finland. Therefore, the questionnaire survey will be used to gather opinions of citizens about their needs and interest in wearable healthcare agents. Furthermore, it also shows the knowledge and potential demand of tele-monitoring healthcare service as well as the suggestion of suitable price for the service. From the result of this research, a strategic plan will be developed for establishing an E-Medical Centre in Eastern Finland.

Data collection methods

There are various types of research approaches, data collection methods, such as exploratory, descriptive, causal research, singly or in combination of two data collection methods (Secondary and primary sources of data). (Kumar et al. 2002, 50-54.)

Secondary data refer to existing data from old research, magazines, books, publications, etc. It can be published by official or non-official organizations. This type of research does not cost much money and time. **Primary data** are the information which is collected through interview, group discussion, specialized surveys. This method will cost more than gathering data from secondary source. Primary data play

an important role in data collection, since it is the only option when secondary data is unavailable or unreliable. Secondary data have support meaning, it is available for purposes other than solving the research problem. (Kumar et al. 2002, 106.)

In this thesis, both data collection methods will be used to analyse the situation of the market and the potential demand of tele-monitoring healthcare service. The questionnaire survey is published online and mailed to as many respondents as possible, who are living in Eastern Finland. It is hoped to get around 150 – 200 replies.

Questionnaire design

The objectives of the questionnaire are to maximize the response rate and obtain precise information. Therefore, researchers need to ensure the questionnaire meets the research objective. Questionnaire designers should use precise words in order to give clear information. Researchers need to ensure that respondents understand the questions, so that they will not skip the questions or ignore the survey. The survey should be in appropriate length to keep the interest of respondents. The long questionnaire with complicated words will make respondents drop in the middle. The order of questions is also important. It needs to be categorized from general to particular, easy to difficult, factual to abstract, etc. From the questions, researchers can obtain three types of information: information that researchers are interested in, it is also called dependent variables; the information is used to explain for dependent variables, which is called independent variables; and the last one is the information related to both dependent and independent variables. (Leung, 2001.)

There are two types of questions, which are often used in surveys: open-ended and closed questions. Open-ended questions allow respondents answer in their own words. This type of questions helps the researcher to explore other problems, which are arising from the research issue. Closed questions are commonly used, since it is easy to fill, code, record and analyse. In closed question type, respondents are forced to choose one option among several. Besides, semi-close ended questions are also used to get a particular and textual response. The textual response is usually placed at the end in the answer. Respondents can choose this when other options are not their choices. This type of question is used in question 3 and 8 (see appendix). There are some main types of close-ended questions: Dichotomous, Likert-type scale, list of

items, ordinal, and matrix question. In this study, the author used Dichotomous, Likert-type scale, and the list of items (multiple choices) questions. (Survio, 2013.)

Dichotomous is the question which only has two possible options. Normally, it is: Yes or No, Male or Female, True or False, etc. This type of question is used in question 2, 4, and 6 (see appendix).

The Likert-type scale is used to identify the feeling, attitude, opinion of respondents. It gives a grade or rating scale for respondent to choose. It is used in question 5, 7, 9 and 10 (see appendix).

Multiple choice questions are the most commonly used in survey. Respondents can choose one or more than one possible answers in the greater number of options. (Survio, 2013.)

Elements influencing the choice of a survey method

Sampling is a subject selecting process. These subjects are chosen for research investigation and they will provide information, which are relevant to the research. Generally, there are three sampling methods: convenience, judgment and theoretical sample. *Convenience sample* costs less money, effort than others, because researchers will choose the most reachable subjects. Hence, it is the least reliable method among three due to the risk of obtaining poor quality data. *Judgment sample* is also called purposeful sample and it is the most popular method. Researchers choose subjects according to their previous knowledge/experiences about the research problems. *Theoretical sampling* is often used in the most theoretical investigation and in one way or the other for studies explanation. The problem of using sampling methods is the inaccurate result, due to the inappropriate sample size. In most qualitative research, it is impossible or expensive to investigate all the cases, thus researchers will choose a sample size to do a research. The deviation of choosing sample from the true figures of the entire population is called sampling error. It makes a big effect on the final result. The researchers should think carefully about choosing the sample size in order to minimize the sampling error. (Harrison, 2013.)

Using group-administered surveys will help researchers get the **response rate** that is likely much better than by other research methods. However, e-mail surveys and online

surveys may get a low response rate because of ignorance or forgetting. To solve this problem, researchers should extend the **duration of data collection**. Surveys done in a short time period will get limited responses, because some people may not reach it during this time. Telephone surveys will get the result quicker with high response rate, but it costs more than email surveys and online surveys. (Kumar et al. 2002, 238-241.)

Available facilities and costs are also needed to take into account. The interviewing person needs to have experience in conducting interviews questions and enlisting the cooperation of respondents. The costs for personal interviews are higher than mail, fax, and online surveys in most cases. These costs depend on many factors such as, the sample size, population dispersion, selection of respondents, etc. (Kumar et al. 2002, 241.)

The questionnaire of this study was created at the end of October, 2014 and published in the beginning of November the same year (01.11.2014). It included twelve questions, in which there were three dichotomous questions, five multiple choice questions (closed-end and semi closed-end questions), and four Likert-type scale questions. (see appendix 1). The author combined two services, which were provided by Google to create and publish this survey. First step was to make a questionnaire by using the Google form. This survey was conducted in two optional languages: English and Finnish. The second step was to make a temporary website with the hyperlink to existing Google forms of the author. The website was created by using Google sites – another service of Google. This temporary website would be closed at the end of November the same year. The duration time of data collection was about three weeks. In this research the target group was mainly resident of the Eastern region of Finland. The simple random sampling method was applied in this study to collect information randomly from the population. The website link was sent to the author's friends, through Facebook groups, papers, etc. With the help from the author's friends, who are living in Kuopio, Turku, Helsinki, Joensuu, and Joroinen, and they are currently students of Savonia University of Applied Sciences, Kuopio campus; Karelia University of Applied Sciences; University of Turku, Aalto University School of Business; by sending the website link and asking to answer the survey on paper, the author collected 148 answers. Many answers were in English, it means that the respondents may not be all Finnish. The hyperlink to the temporary website was:

<https://sites.google.com/site/thesisquestionnairesurvey/>

4.2 Results of the research on the potential demand of E-Medical Centre

This section will present the result of the survey on the potential demand of an E-Medical Centre. There were 148 answers were collected in nearly one month and mainly in the Eastern region of Finland.

The questionnaires are included in appendices 1 and 2.

Background information of respondents

The first three questions are about respondents' gender, age group, and living places. About 41 percent of 148 responses were females and the rest were males. The largest age group participating in this survey were people from 21 to 40 years old. Although this service is aimed at serving for elderly people, the number of respondents from age group over 61 are the smallest. Figure 11 displays the age and gender distribution of samples.

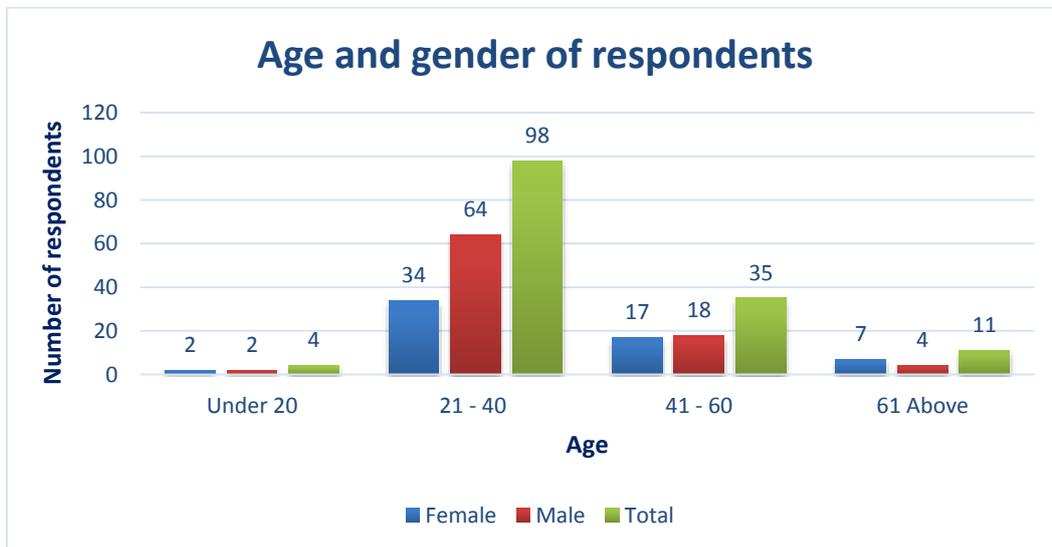


FIGURE 11. Age and gender of respondents (N=148)

Figure 12 describes the geographical distribution of the respondents. As shown in this figure, most of the respondents are living in the Eastern region of Finland, only 6 respondents are from other regions. 30.4% of total respondents are living in Kuopio.

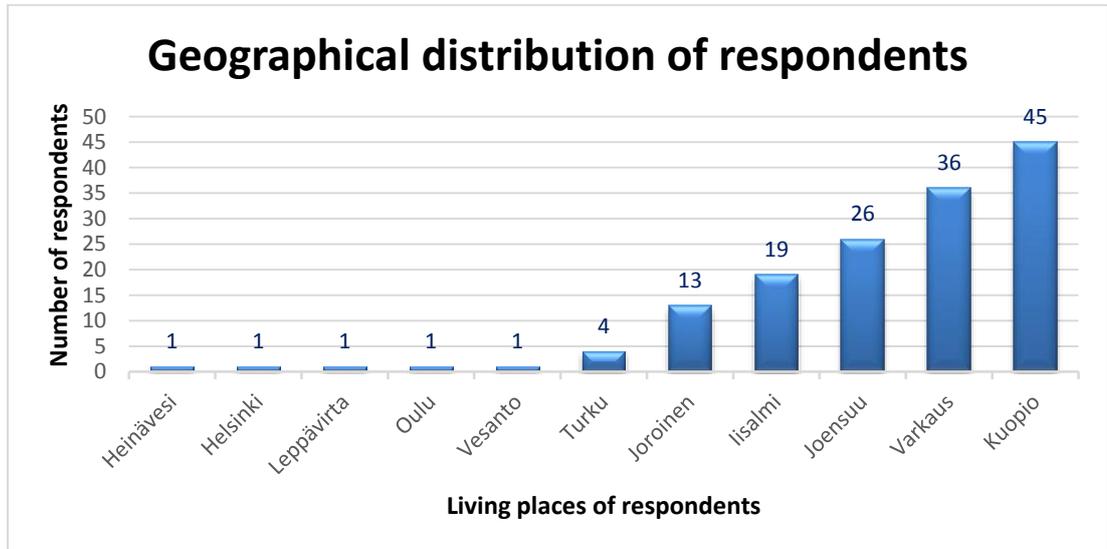


FIGURE 12. Geographical distribution of respondents (N=148)

Knowledge about the tele-monitoring service

People were asked about tele-monitoring service in two different questions (question 4 and 5) and their responses are presented in Figure 13. About 62% of respondents knew about tele-monitoring service and most of them are male. Among them, 61% agreed (22% strongly agree, 39% somewhat agreed) that this kind of service can help elderly people to prevent and reduce the falling down risk, while there were 17 people, who counted for 11% of the total of strongly disagreed.

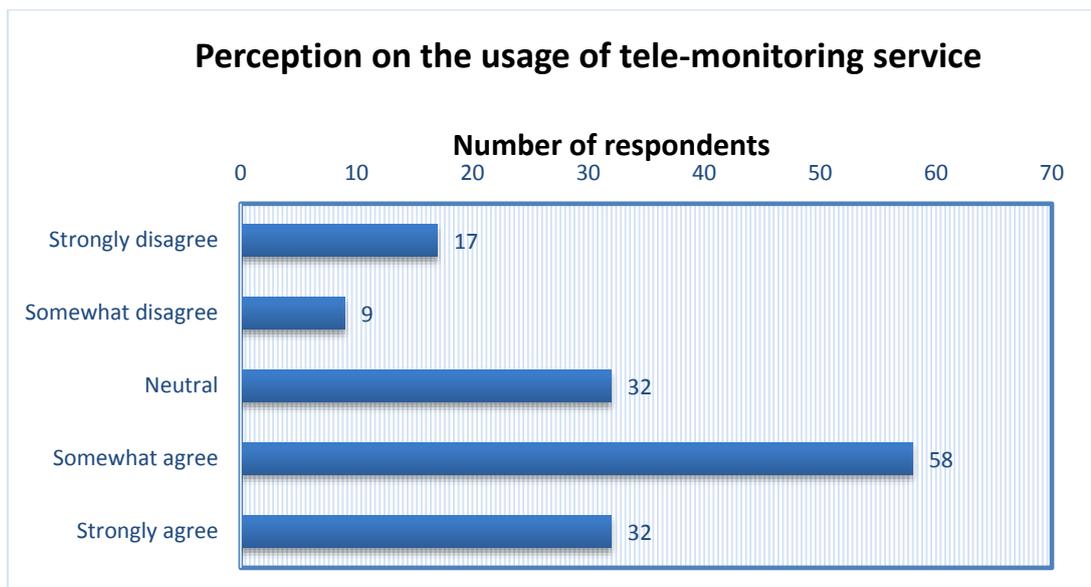
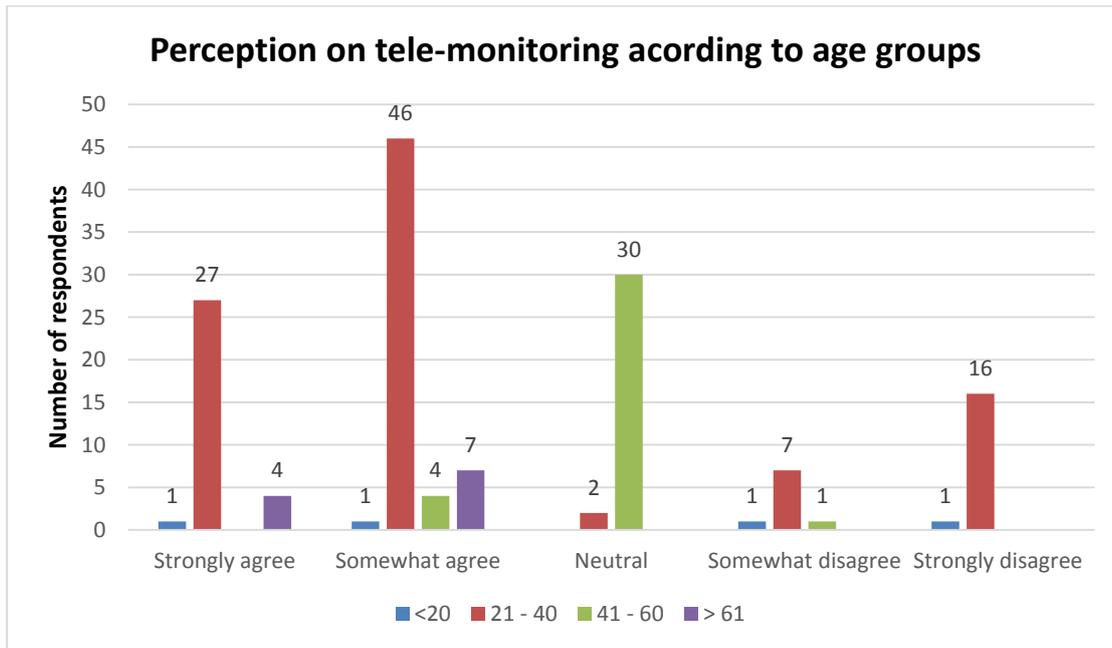


FIGURE 13. Perception on the tele-monitoring in helping elderly people to reduce the falling down risks. (N=148)

On the other hand, the perception on the tele-monitoring varies between age groups. People from 21 to 40 years old tend to believe in this kind of service, while most people from 41 to 60 years old have no idea about this service, they were not sure if this service would be helpful or not. On the contrary, there were 11 respondents, who were 61 years old and above strongly disagreed that this service would be helpful.

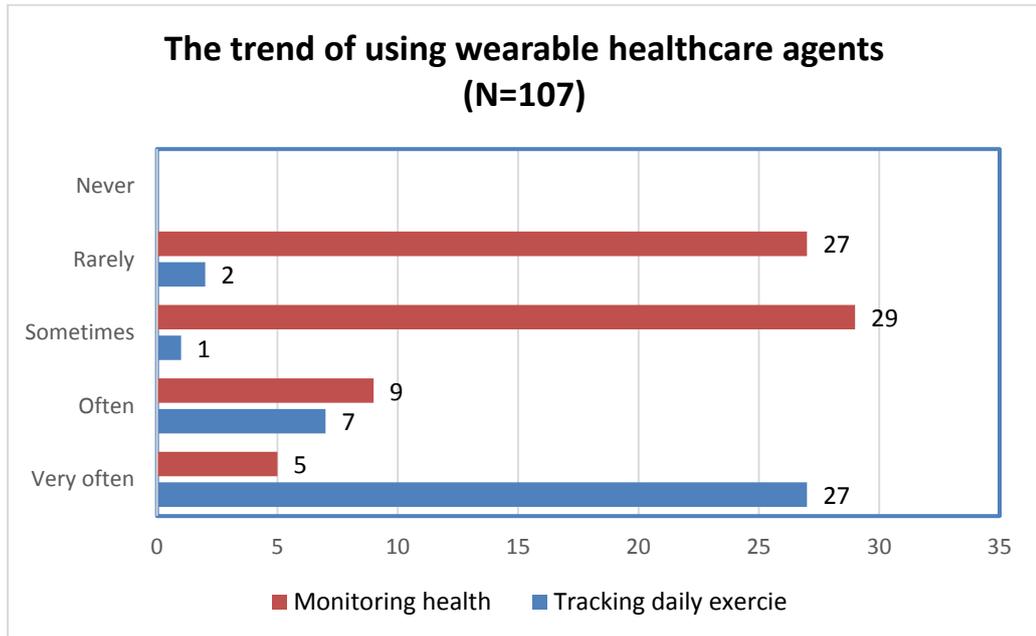


	<20	21 - 40	41 - 60	> 61
Strongly agree	1	27	0	4
Somewhat agree	1	46	4	7
Neutral	0	2	30	0
Somewhat disagree	1	7	1	0
Strongly disagree	1	16	0	0

FIGURE 14. Perception on tele-monitoring according to age groups

The trend of using wearable healthcare agents

In the next four questions, people were asked about the wearable healthcare agent. The purpose of these questions was to identify the trend of using self-tracking devices in Eastern Finland. As shown in Figure 14, there were about 73% of respondents (107 people) currently using a wearable healthcare agent. The number of people using this device for monitoring their health is bigger than the one using it for tracking daily exercise. 24% used these devices to track their daily exercises and they use it almost every day.

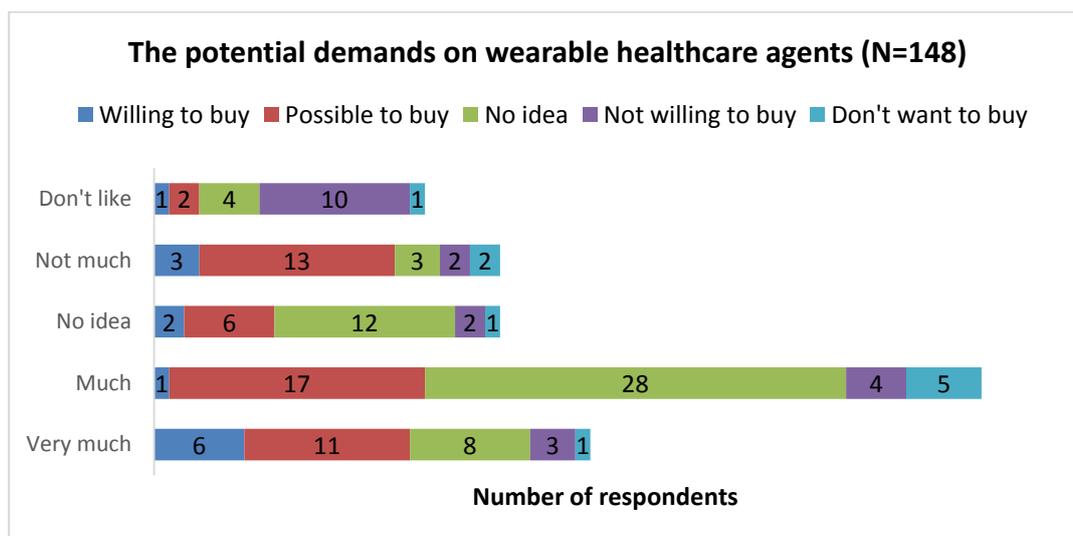


	Tracking daily exercise	Monitoring health
Very often	27	5
Often	7	9
Sometimes	1	29
Rarely	2	27
Never		

FIGURE 15. The trend of using wearable healthcare agents (N=107)

The potential demand on wearable healthcare agent

Question 9 and 10 mentioned about the demand on a wearable healthcare agent. A hypothesis was that a wearable healthcare agent was designed as a watch, and the result shows that 29 people were strongly willing to use it. It counted for nearly 20% of total respondents. Around 37% people liked to try self-tracking devices, while 16% felt uncomfortable to wear this kind of device. 12% of the total did not like to use it, and 16% had no idea whether they would use it or not.



	Willing to buy	Possible to buy	No idea	Not willing to buy	Don't want to buy
Very much	6	11	8	3	1
Much	1	17	28	4	5
No idea	2	6	12	2	1
Not much	3	13	3	2	2
Don't like	1	2	4	10	1

FIGURE 16. The potential demands on wearable healthcare agents (N=148)

According to the Figure 15, there were about 49 people for whom it is possible to buy this device for their relatives; it counted for 33% of the total. On the contrary, 6.8% did not want to buy or recommend this wearable device for other people, including their relatives. The largest proportion was the group of people who have no idea about using this device.

Suggestion for service features and service fee

The Figure 16 illustrates the suggestion for the service features of the EMA Medical Centre as well as the proposal service fee. Most of respondents suggested that EMA should have Monitoring and Emergency call in urgent situations. About 16% (23 people) thought that EMA should provide treatment along with monitoring and emergency call services.

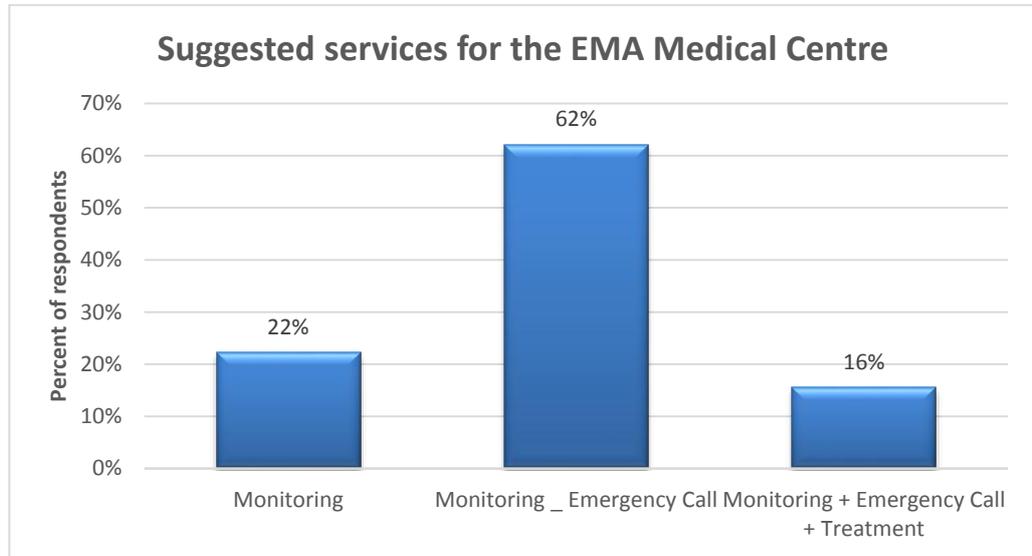


FIGURE 17. Suggested services for the EMA Medical Centre (N=148)

Figure 17 indicates the proposed price for EMA's service packages. The range of price between 30 - 40 Euros was suggested the most. 57 people proposed the price between 40 – 50 Euros, while only 12 people were willing to pay more than 50 Euros for EMA's service.

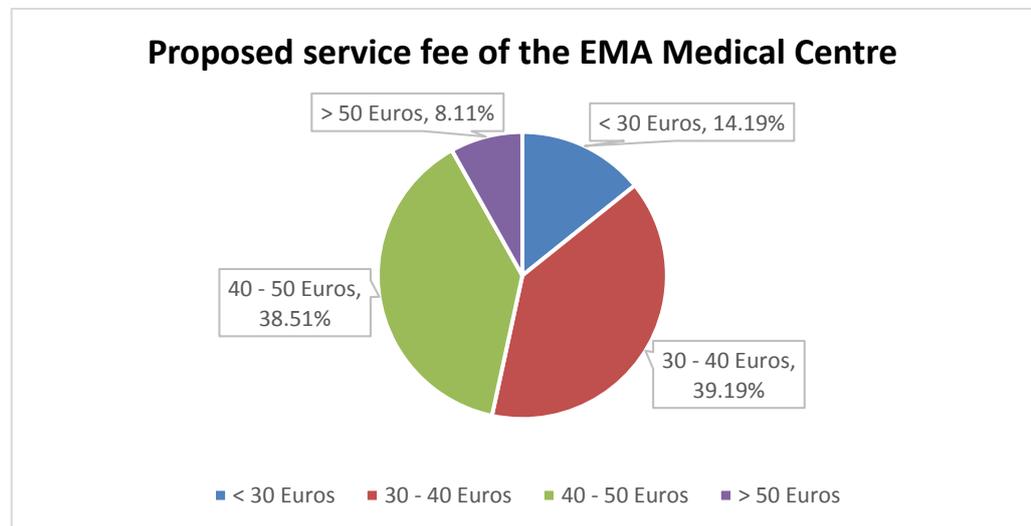


FIGURE 18. Proposed service fee of the EMA Medical Centre (N=148)

5 CASE: AN E-MEDICAL CENTRE IN EASTERN FINLAND

Business background

The business description can be considered as a gate to your business plan. It starts with a short introduction about the current situation of the industry. The current situation and future trends should be mentioned in order to explain the reason for business to start up. Information on business, such as the form of business, location, business name, vision and mission statement, are also stated in this chapter. (Entrepreneur, 2014.)

In the late twentieth century, the information technology revolution has opened a new era for humanity. The internet brings people from over the world to get closer. People can work from their home in Finland for a company in the USA, or students who are studying abroad can talk with their family in their hometown by using some software. Stepping through the early twenty-first century, the wireless technology becomes popular, many applications based on it have been invented and they are beyond normal human imagination. One of them is the development of health technology. In the past, people needed to go to the hospital or the medical centre to check their health or discuss with doctors. Nowadays, they can self-check their health at home and be in contact with doctor electronically by using e-medical devices and internet. (See chapter 3)

In modern life, especially in developed countries, the number of elderly people who are living alone is increasing. There is the rise of chronic diseases of this group such as, heart diseases, diabetes, etc. Hence, most of them need home care services. In the twenty-first century, many European countries faced to the ageing population, the shortage of workforce in healthcare service as well as the increase of health expenditure. Therefore, many innovative solutions have been proposed. One of them is the rising of health tele-monitoring devices using wireless, GPS technology. Providing this kind of service in Eastern Finland is also a business idea of the author. The main target users are elderly or disabled people who need monitoring their health regularly (See chapter 3). Basic information about the business is introduced in the Table 3.

TABLE 3. Basic information about the business

Name	EMA Medical Centre
Business form	Limited Partnership
Industry	Social Welfare and Healthcare Service
Business region	Eastern Finland
Location	Kuopio
Business Vision	To be the first E-medical centre in Eastern Finland; To provide a better healthcare service for elderly and disabled people.
Business Mission	To be trustworthy and innovative service provider.

5.1 Product and service

This part describes the product and service deeply (such as technical specifications, function explanations, etc.). The competitive characteristic, the benefits and customer value of the product/service are also mentioned.

Description of the EMA Medical Centre

In the past, people's health checking (even with some basic checking such as, blood pressure, ECG, etc.) must be done by doctors; and patients' health data are stored by huge columns of hard copy documents. Recently, the development of technology proved that health checking, and data transmission/management can be done automatically by a self-tracking device, and an E-data centre, respectively. Inspired by these achievements, the EMA Medical Centre is proposed as shown in Figure 18. (See chapter 1)

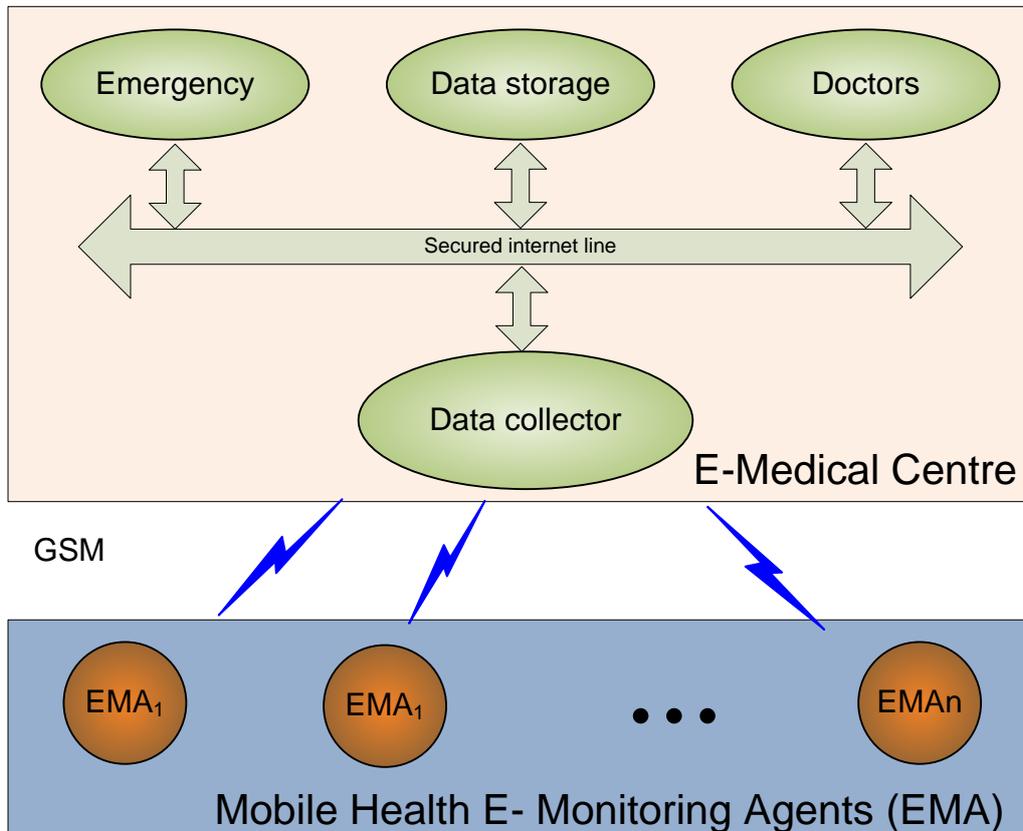


FIGURE 19. Working principle of the proposed E- Medical centre (Kiss, Patai 2011, 279-284.)

Using this E-medical service, the customer is required to wear an E-Health monitoring agent (EMA). The principle of this E-Medical Centre is that customers' health will be monitored by these EMAs. These EMAs will do basic health monitoring activities (such as ECG (heart rate monitor), blood pressure, and temperature). The health data will be transferred to a data processing centre via a secured GSM network. Inside the E-Medical Centre, data is transferred within a secured network to emergency centre, storage centre, and for physicians to perform correct actions. (Bakkes, Morsch, Krose 2011, 152-159.)

Advantages of the E-Medical centre

It can maintain health tracking 24h a day and 365 days a year. Using E-Medical Centre enables small group of physicians to provide healthcare for mass of patients. It also helps to improve the processing time and the quality response. Furthermore, it can enable the mobility for patients. (Bakkes et al. 2011, 152-159.)

Challenges of the E-Medical Centre

There are some challenges of the E-Medical Centre such as requirements of huge infrastructure, encryption methods to maintain the customers' privacy and confidentiality, operation of the centre depends crucially on the performance of the EMA, training and technical transferring for operating technicians. (Bakkes et al. 2011, 152-159.)

Description of E-Health Monitoring Agent

The EMA must satisfy two basic requirements. The first is to perform accurate tracking response with high reliability. Secondly, it needs to have a suitable design for customer wearing purpose. (Kiss, Patai 2011, 279-284.)

Inspired by recent achievements in developing tracking agent for athletics, the EMA will be integrated into the personal watch. This integration promises positive responses from customers since they are used to wearing traditional watches. Consequently, the customers' acceptance chance for this product will be higher. (Bakkes et al. 2011, 152-159.)

The EMA will be equipped with heart rate sensor, motion and altitude sensors, blood pressure sensing system, temperature sensor, GPS, etc., for tracking purposes. To perform wireless data communication, a GSM communication module is also included. This makes the EMA able to perform data transmitting just like a general mobile phone. (Bakkes et al. 2011, 152-159.)

In order to maintain operation for 24h a day, the battery is one of the biggest challenges. Beside energy optimization methods to increase operating duration, the new EMA will be designed with fast plug-in/out battery packages and auxiliary charger. This may help to eliminate the fence of battery life and enable the EMA to operate simultaneously. Figure 19 summarises the description of the EMA. (Bakkes et al. 2011, 152-159.)

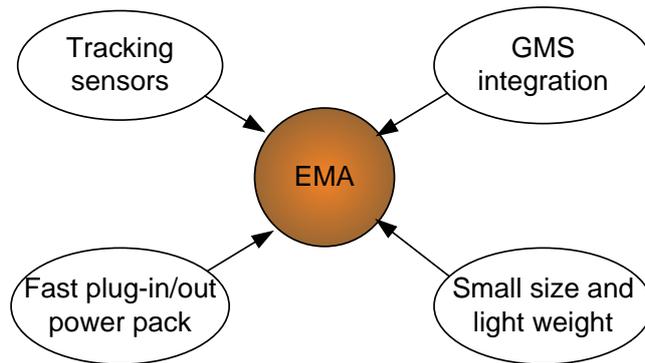


FIGURE 20. Working principle of the proposed E-Health monitoring agent (Bakkes et al. 2011, 152-159.)

Finland is a pioneer in producing this kind of device with many existing products in the market. The best example is products from Polar Electro Oy. Polar (globally known) is the first manufacturer to produce a wireless heart rate monitor (Bloomberg, 2014). These successful products come from the collaboration between universities (Universities, University Hospital, and University of Applied Sciences), related-industries and Companies. (Nummi 2006, 4.)

The business owner can choose some existing devices in the market, make some special contracts with suppliers, and resell it to the customers. Or the owner can order directly from the manufacturer to produce the device according to owner's request.

5.2 Market analysis

Marketing planning process has three stages: situation analysis, strategy and marketing program development (Strategy formulation), and implementation. Situation analysis provides an in-depth understanding about the marketing environment of the business. Its result will help the strategic manager detect the problems and opportunities as well as competitive position assessment. From this, he/she will develop effective marketing plans. (Kumar, Aaker, Day 2002, 7.)

In the first step of marketing planning process, the current situation will be analysed, in which demographic, cultural, natural, economic factors of Finland and Eastern Finland are mentioned to give an overview about the target market. After that, SWOT analysis will be used to evaluate the strengths, weaknesses, as well as the threats and opportunities of the company.

Finland is located between the 60th and 70th parallels of latitude. It makes Finland one of the northernmost countries of Europe. It has been known as a country of forest and lake with 75 per cent of the country is covered by forest and 10 per cent is covered by lakes. Therefore, forestry and forest-related industries have been the strongest sectors for a long time. They have been the main source of revenue for many regions. Although the forestry has decreased in recent years, it is still one of the most important industries (MFA, 2014). The fall of forestry leads to the change in Finnish industrial structure. The growing chance of other high-tech related industries, such as, electronic, information, machinery has increased. Among them, health-tech has got the huge success recently. (MFA, 2014.)

As other Nordic countries, Finland has a long winter with heavy snowfall in the middle of winter. It makes a significant impact on transportation. There will be no sea transport or any water transport during midwinter months. It is also difficult to travel by other vehicles during this time. Hence, providing enough service, especially healthcare service for elderly, disabled people, becomes even more important. After World War II, there are many reforms in the Finnish social system, from education to social welfare and healthcare system. Some called these successes as Finnish Miracle. Finland has a progressive social system, and a representation of the Nordic Welfare state model. The equality plays an essential role in society. Equality means everyone has the same rights and obligations regardless of age, origin, language, religious belief or health. Gender equality is known as a core value for a long time. Gender perspectives are considered in making decisions of all areas. Democracy is highly respected, people have freedom of expression. Finns may not recognize clear economic class divisions, but they are likely aware of educational level, honorific titles and political party affiliation. The increasing of economy, progressive social system, opened educational system and consensus politics impact on Finnish social class divisions. (MFA, 2014.)

According to the OECD report, Finnish economy is facing many problems such as the collapse of forestry and electronics, the shortage of workforce in many sectors, etc. These problems lead to the deterioration of economic competitiveness. Recently, the government has proclaimed an ambitious reform plan. In it, public sectors will continue receiving support with an affordable cost; consolidating municipal finances; raising labour supply to prepare for the retiring population; reducing the unemployment rate, and raising the output of the economy. (OECD 2014, 4.)

Eastern Finland includes four regions: Southern Savonia (Etelä-Savo, Södra Savolax), North Karelia (Pohjois-Karjala, Norra Karelen), Kainuu, and Northern Savonia (Pohjois-Savo, Norra Savolax). Its area is about 85,000 km². 17.5% of the total surface is covered by water. It shares a long border with Russia, and is close to St. Petersburg metropolitan region. Four largest centres are: Kuopio, Joensuu, Mikkeli, and Kajaani. The density of population is low with 8.2 persons per km². Eastern Finland has a population of 650,000 (2010). 82,000 inhabitants are living in Kainuu, 166,000 in North-Karelia and 155,000 in Southern Savonia. According to recent statistics, the population in this area tend to decrease and age. Kainuu region is predicted to have the most significant drop in population. The population density is decreasing due to the emigration. Most of the emigrants are young generation (between 15 to 24 years old). It causes some problems in demographic development of this region. The natural development in demographic is slowed down, while the ratio of the older population is increasing. Because of the low population density, the cost for maintaining of service, goods, and transportation will be higher in the future. This factor gives both challenge and opportunity for entrepreneurs, especially social and innovative entrepreneurs. Although its economic growth has increased in recent years, it is still lower than other regions and Finnish national average. Main sector is agriculture, forestry (14% of all jobs), and public sector (35% of all jobs). Entrepreneurial tradition is not strong in this region. In summary, the main challenges of Eastern Finland are the declining population and the unemployment rate. These factors weaken the potential development and its competitiveness. (ADE 2011, 48-50.)

5.3 Competitors and competitive edge analysis

Competitors

The EMA Medical Centre provides the wearable healthcare agent with the tele-monitoring package service. It means that EMA has two types of competitor. One type is from the device manufacturers and the other type is from existing primary healthcare centres.

Other device manufacturers

Nowadays, many Finnish companies focus on developing products, which can perform health tracking, such as Polar Electro Oy, Heia Heia, Mendor, Valkee, Nurse Buddy,

Beddit, etc. Among them, Polar Electro Oy is the most famous one with its Heart Rate Monitors and GPS sport watches.

Polar Electro Oy

Polar has been known as one of the leaders among wearable healthcare device manufacturers. The first heart rate monitor was produced in 1977, and it is a product of Polar Electro Oy. In 1982, the first wireless heart rate monitor was also invented by this company. From this time, wearable technology fitness market was born. Recently, Polar does not only focus on producing physical products, but also providing support systems for other original equipment manufacturers. Its smart coaching system provides a smarter training program for users. It records users' performance, gives feedback, and designs suitable training programs for them. (Kratzman, 2014.)

Polar heart rate monitoring and supporting systems are used mostly by athletes, researchers, trainers, coaches in the fields of sports, exercise, and health. It can measure the movement of users, such as walking, running, cycling, etc. Polar's target customers are fitness equipment manufacturers, athletes, health insurance providers, and physical education programs. (Bloomberg, 2014.)

Polar has three product lines: Fitness and cross-training, running and multi-sport, and cycling products. Highlight features of these products are: connecting to web service, integrated GPS, cycling and running speed and cadence, waterproofing, 24/7 activities, and suggesting training programs, plus mobile app compatibility. (Polar, 2014.)

Polar provides complete service needed for users to train. All users' data will be updated to Polar support website. From this, users can see the summary of their training as well as suggested exercise programs. Figure 20 summarises Polar products and support services. (Polar, 2014.)

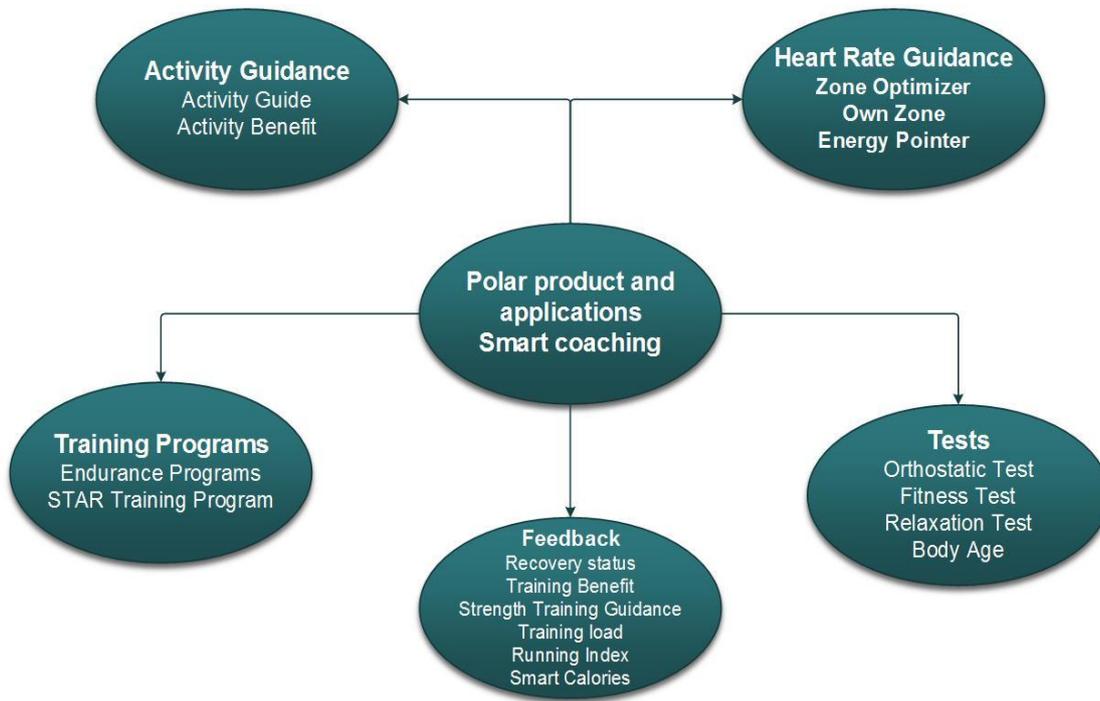


FIGURE 21. Polar products and support services (Polar, 2014.)

Polar can be considered as the strongest company in this field. Although, the products and services of Polar and the EMA Medical Centre seem alike, their target markets are different. Polar focuses on providing services for fitness and training purposes, meanwhile EMA provides healthcare service to the population. (Polar, 2014.)

Besides wearable device manufacturers, other *mobile app developers* such as Heia, are also potential competitors of the EMA Medical Centre. Nowadays, people can use their smart phones with installed apps to monitor their training. Or they can connect their wearable devices with certain apps through their phones to manage their health data. The weaknesses of this type are that most of mobile apps cannot record 24/7 activities, and they only focus on managing health data. (Davis, 2014.)

Other existing primary medical centres: The current system of primary medical centres is also a potential competitor of EMA Medical Centres. People may be familiar with the current system, and they do not want to change their choice.

Competitive edges and competitive strategy

The EMA Medical Centre provides unique healthcare service in Eastern Finland by using wearable healthcare agents with low cost of operations. Customers can access to their health data easily everywhere through EMA's database website. The device helps to reduce the travelling cost and time as well as the burden on the primary healthcare system. The biggest difference between EMA Centre and other wearable device producers is that EMA provides emergency calls to the nearest hospitals when there are problems with customers' health. For example, if there is no response from the device for about 5 minutes, it will automatically turn on the alarm system at EMA Centre. From this, nursing staff will choose the appropriated reaction, such as making a phone call to the customer, to hospital, to customers' relatives, etc. EMA Centre plays an intermediary role between the device producers and the specialised medical centres. Therefore, alliance strategies can help EMA Centre enter the market more easily.

Three Generic Strategies

According to Michael Porter (1998), there are three potential successful generic strategies as shown in Figure 21, which will help a company outperform other rivals. The strategies are overall cost leadership, differentiation, and focus.

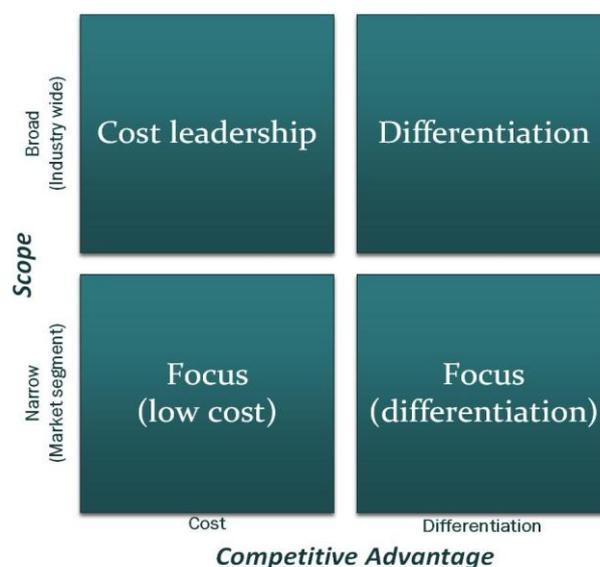


FIGURE 22. Porter's Generic Strategies (Porter 1998, 39.)

Cost leadership means that the company sells the products or services at average industry prices to gain higher profit than its competitors, or selling below the average industry price in order to gain the market share. Cost leadership is a defensive strategy, because it defends the firms against all five competitive forces (powerful suppliers, powerful buyers, threat of new entrants, substitutes, rivalry among existing firms). This strategy often targets the broad market. Companies that succeed with this strategy usually have these common internal strengths: efficient logistics, heavy upfront capital investment, and low-cost base manufacturing. Besides this, there are some potential risks to companies using this competitive strategy, such as other companies use the same competitive strategy, the development of technology gives an opportunity to improve the production capacities, and other companies using focused cost leadership strategy may offer lower price to gain the market share. (Porter 1998, 35-37; MBA, 2014.)

Differentiation strategy means that products or services offered by firms bring unique perception in industry wide. This perception may come from the differences in brand image, characteristic, customer service, quality, technology, etc. Differentiation strategy creates brand loyalty, its difference makes customer less sensitive to the price changing. It reduces substitute and the need for a low-cost advantage. This strategy also brings power to the company in dealing with suppliers and buyers due to the shortage of substitute products. Firms need to have innovative products or service, a strong marketing and sales team, applied R&D, etc. There are two main risks related to this strategy: the imitation will decrease the unique perception and the changing in customers' choice. (Porter 1998, 37-38; MBA, 2014.)

Focus or Niche strategy concentrates to the narrow market (segmented market) and tries to attain the differentiation or cost advantage. The narrow segment helps these companies offer better service or exclusive products to their customers. The small market share makes it less powerful in dealing with suppliers. However, the focused differentiation strategy can help companies pass this cost to customers because of a limitation of substitute products. A company using this strategy can gain the high rate of customer loyalty. The risks of this strategy are the imitation and the competition from broad-market cost leaders. (MBA, 2014.)

The EMA Medical Centre offers unique healthcare service to the narrow segment in Finland. Besides this, the EMA Medical Centre cannot choose a cost-leadership

strategy due to the lack of market share and capital. Therefore, the most suitable strategy is the focused differentiation one. The differences that EMA brings to its customers are from the customer service, the design, and quality of products. Choosing this strategy, the EMA Medical Centre hopes to generate strong customer loyalty with its deep understanding about customers' needs, and the excellent service offering. The good reputation will bring the higher margin to EMA, because customers are often willing to pay for the extra value they perceive. On the other hand, the limitation of competition and the ease of customer awareness are other reasons that make EMA use focused differentiation as its competitive strategy. Figure 22 summarises the advantage of focused differentiation in comparison with other generic strategies in term of reaction to five industry forces.

Industry forces	Porter's Generic Strategies		
	Cost leadership	Differentiation	Focus
Entry barriers	<i>Ability to cut price to prevent the new entrants</i>	<i>Strong customer loyalty discourage new entrants</i>	<i>Developing core competencies that can become a barrier</i>
Buyer power	<i>Ability to offer better price to keep customers</i>	<i>Few alternative products give power to the company</i>	<i>Few alternative products give power to the company</i>
Supplier power	<i>Flexibility to cope with input cost increases</i>	<i>Passing price increases to customers</i>	<i>Passing price increases to customers (focused differentiation)</i>
Substitutes	<i>Using low price to prevent substitutes</i>	<i>Strong customer loyalty helps to prevent substitutes</i>	<i>Specialized products, services and core competencies protects against substitutes</i>
Rivalry	<i>Better position in price war</i>	<i>Brand loyalty is strength</i>	<i>Differentiation focused customers' needs and brand loyalty</i>

FIGURE 23. Porter's Generic Strategies and Industry Forces (MBA, 2014.)

5.4 Risks analysis and management

Risks in business world bring both opportunities and threats to the company. There are many different types of risks, which can destroy or damage your business. The business owner should have a well-prepared plan to manage those risks and minimize the lost money. To establish a business, entrepreneurs have to consider these risks: Safety, technology, finance, legal, and operational risks. (MBA, 2014.)

Safety refers to both risks caused by human and nature. For example, potential accidents, fire, explosion, hurricanes, storms, floods, earthquake, etc. The **Financial risks** are common one with any business, though it is the most unexpected one. Financial risks may come from the increase cost of warehousing, vendor changes, legal changes, etc. **Operational risks** include risks from internal and external factors may cause problems with the operation of the firm, such as, loss of customer, loss of goodwill, loss of shareholder confidence, etc. **Legal risks or compliance risks** are the failure of regulatory compliance or other actions that may lead to the legal action against the company. **Technology risks** refer to hardware, software failure, human error, viruses, processing capacity, data protection, and cybercrime. (Davis, 2014; QGOV, 2014.)

After determining the potential risks, business owners should reorder them according to the occurrence probability. For example, risks are categorized into: very likely to occur, occurring sometimes, and very little chance to occur. (Davis, 2014.)

To manage those risks, entrepreneur can consider buying insurance. Most of the risks are insured by insurance companies. For example, fire, natural disaster, employee's health and social insurance, etc. To eliminate the technology risks, the database of the company is needed to be backed up regularly. However, the best method of risk management is to prevent it happening. Preventing risk from occurring is the result of training programs, scheduling the safety checking, maintenance, etc. (Saylor Academy, 2014.)

EMA has to face many risks, such as risks from lack of capital, lack of experience of the management team, legal risks, etc. Among them, the risk of data confidentiality and user privacy needs to be taken carefully. The operation of the EMA Medical Centre significantly relies on information technology, that is all users' information will be collected by using a wireless transferring technique, and then it will be stored in the EMA's database system. This is the core feature of EMA's operation, therefore this risk needs to be managed carefully to provide confidentiality to the users.

5.5 SWOT analysis and Market segmentation

SWOT analysis

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats of a company. The strengths and weaknesses refer to internal factors – the company and its products, while the opportunities and the threats come from external factors. A SWOT analysis is the process of seeking the match between a company's resources and market opportunities. According to Burns (2001), the secret of success is to deeply understand the competencies of the company, and to combine all the resources to meet the market opportunities and threats. SWOT analysis also helps entrepreneurs in undertaking the customer analysis and deciding on market segmentation. (Burns 2001, 182.)

Strengths and weaknesses can be analysed by scanning internal factors of a company such as marketing, financial capacities, product manufacturing, and organisational competencies. Opportunities are defined by Kotler (2006) as "an area of need that a company can perform profitably". They can be listed according to their probability of success. This probability depends on the company's strengths and its performance. Meanwhile, threats are the current or potential challenges, which may lead to the drop or failure of the business profitability. They are listed according to the probability of occurrence. A business with high opportunities and low threats is an ideal business. While the speculative and major businesses refer to those having the same level of opportunities and threats. The business owner should review his or her business plan again, if its opportunities are low, while its threats are high. It is called troubled business. (Kotler, Bowen, Makens 2006, 94-96.)

Strengths

The EMA Medical Centre is the first provider of tele-monitoring service in Eastern Finland. It offers a unique solution for taking care of elderly and disabled people. The EMA Medical Centre can be seen as a social entrepreneur that brings radical new ways of operating for public benefits. Due to the special operation method, this centre can manage larger numbers of patients at the same time with cheaper costs than the current system. Moreover, it can help to reduce the travelling costs. The number of required nursing staff is also lower than the current system. The target of its system is operating in the primary healthcare. Customer's health data is monitored continuously,

so that the nursing staff can immediately respond, when some problems happen. The EMA Medical Centre can provide the guide for customers based on their data, in which customers can find the summary and the suggestions for their health. Customers can easily access their health data anytime and anywhere through EMA's website.

Weaknesses

Its strength is also a weakness in some aspects. Because EMA is a new type of medical centre, it will need more marketing activities to bring its service to customers. Wearable healthcare agent is a modern device, thus some elderly people may find it difficult to use it. The price of this device is also a concern problem. It needs to be set at a suitable price to attract customers. On the other hand, the weaknesses are also from the human capital of the company. The owner does not have the management skills and cross-cultural management experiences, financial support, and the weak language skill (Finnish).

Opportunities

As mentioned in the external environment analysis part, the requirement of society is the strongest motivation for the owner. The decrease in density of population can be also considered as a chance of tele-monitoring healthcare service. Furthermore, Finland is a pioneer in using health-tech; therefore Finnish people may be willing to try new technology. Recently, the funding sources and supporting programmes are increasing to encourage enterprises to innovate solutions for public sectors.

Nowadays, the changing of individual behaviour in healthcare becomes essential due to the ineffectiveness of the old system. Old model of the healthcare system – the reactive one, will be overloaded soon, because of the increase of chronic diseases and the aging population. It is a precious opportunity for innovative entrepreneurs to start up their business in the healthcare sector (Dixon-Fyle, Gandhi, Pellathy, Spatharou 2012, 66). Figure 23 describes the new paradigm for patient behaviour.

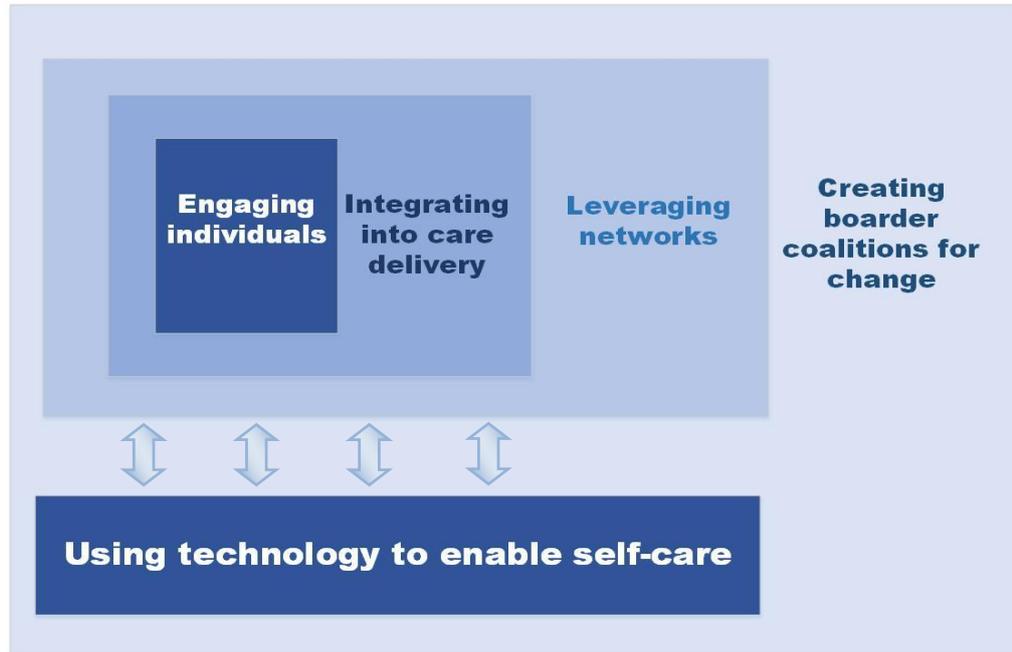


FIGURE 24. New paradigm for patient behaviour (Dixon-Fyle et al. 2012, 66.)

Threats

This Medical Centre needs longer time to find customers than a normal business. Hence, the operating costs will increase day by day. A weak financing support may lead to the failure of this business. To convince customers to use its service is not an easy task. People can find this service helpful in some ways; however, they may prefer the old primary healthcare system than the innovative one. The law and regulation in operating a medical centre is also a threat to the business owner if he or she cannot meet the quality requirement.

In summary, the SWOT analysis for the EMA Medical Centre is presented in Figure 24.

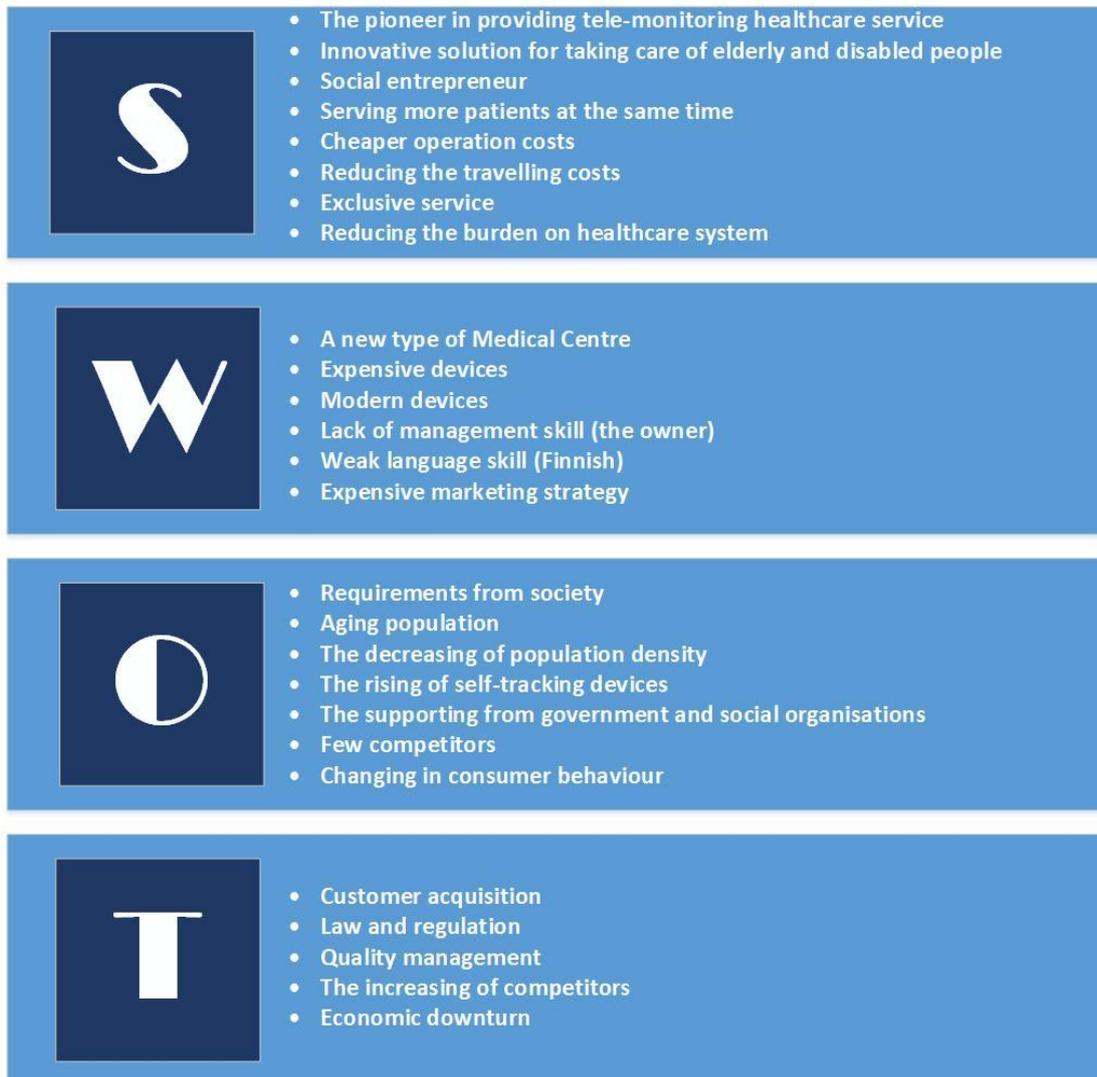


FIGURE 25. EMA Medical Centre's SWOT analysis

Market segmentation procedure

Market segmentation is a process of planning and choosing target groups. Customers are classified into various groups. Among them, the company will only focus on one or more customer groups in order to deploy suitable marketing programs. The segmentation procedure has five steps. First of all, potential customers are identified. The segmentation is appropriate when the result of specialization brings profitability to the company. Second step is to choose the segmentation variables. Normally, there are four groups of segmentation criteria: Economic and demographic, geographic, psychographic and behavioural variables. In order to make an effective marketing plan, more than one variable can be chosen. (Lahtinen & Isoviita 1994, 42-46; Kotler et al. 2006, 262.)

Demographic segmentation divides the market, according to age, life cycle, gender, income, occupation, etc. This is the most common variable, which marketers use to divide customers into groups. This variable is strongly related to customers' choice and customer behaviour. For example, customers' preference changes with age. Companies may modify their products or marketing programs according to customers' age groups. McDonald has various choices for kids and children because of their important role in making decisions about eating out. Another important criteria in this type of segmentation is the income variable. Income segmentation has been used for a long time, especially in luxury products and service. Upper-income groups are the target groups of luxury goods and exclusive service, while lower-income groups are the target market of public transportation, cheap hotels, etc. Middle-income is the largest segment. Income segmentation is one of the primary reasons, which have a strong impact on pricing products or service. (Kotler et al. 2006, 266-269.)

Psychographic variables are used to segment customers into groups according to their social class, lifestyle, and characteristic. Although customers have the same demographic background, they may have different psychographic profiles. For examples, a book-coffee shop has customers in different age groups, but they have the same interest in reading books and coffee. (Kotler et al. 2006, 270-271.)

Geographic segmentation refers to people have the same geographical units such as location, climate, density, etc. This variable can help marketer design the distribution channel as well as the choice of selling products. For example, the population density will affect to the size of the store, the weather will help the marketer make the decision on what kinds of product will be sold, etc. (Kotler & Keller 2012, 236.)

Behavioural segmentation is considered as the best method to divide customers into different groups. Customers will be segmented according to their attitude, response, knowledge about the products as well as the purchasing motives. For example, the increase of chronic diseases leads to the rising awareness of people about healthy lifestyle. Hence, this is the chance for exercise equipment producers, fitness centres, self-tracking devices, etc. (Kotler & Keller 2012, 272.)

The next step of market segmentation is the selection of target groups. Each company can choose one or more target groups to launch their marketing programs. To make an effective marketing program, companies should focus on specific groups, evaluate

the size and growth as well as the company's capacities to respond to the needs of these groups. After choosing target segments, marketers will decide on the marketing activities to be used for each segmented group. The last step is to implement the marketing plan and to monitor the results (Lahtinen & Isoviita 1994, 45.)

A summary of Segmentation procedure is shown in Figure 25.



FIGURE 26. Segmentation procedure (Lahtinen & Isoviita 1994, 42.)

As mentioned above, Eastern Finland has a population of 650,000 (2010) and the numbers of older people tend to increase. This is a potential market for private healthcare service to grow. The EMA Medical Centre will segment customers into two groups mainly based on demographic and behavioural variables. Psychographic and geographic variables can be seen as added criteria. People who are living in Eastern Finland are the target groups. EMA's customers will be people, who are middle-income and have awareness of using modern devices to monitor their health. They can be in different stages of age or they may not be the users but the buyers.

The primary groups are the elderly, disabled people, who find it difficult to travel for long distance to hospital. These people normally have a high potential risk of chronic diseases such as stroke, heart diseases, diabetes, etc. These diseases will require them to check their health regularly. The population density of Eastern Finland is low, so that it may not be easy for them to go to hospital, especially in winter time. Middle-

income also means that customers have sufficient finance to look for more services in order to make their life more comfortable.

The secondary groups are the younger generation, who have a busy life and enthusiasm for the high-tech devices. These people may not be the users, but they will buy EMA's service for their relatives or for them to monitor daily exercise with detailed guide from EMA Centre.

Positioning Strategy

Positioning strategy is basically about the differentiation of the products and services. Marketers can choose to distinguish their products or service by physical or perceptual attribute. While physical positioning focuses on the physical characteristics of the product, perceptual positioning focuses on service providing to customers. Many buyers know little about the physical attribute of many brands, but they care about the benefits they receive. Physical positioning is usually used in the marketing strategy of industrial products, while perceptual strategy is used for consumer products. The importance of perceptual positioning strategy has increased recently due to the similarity of product's physical characteristics. (Walker & Mullins 2011, 154-157.)

The EMA Medical Centre will use differentiation of service, personnel, location and image as its positioning strategy. Although the combination of various competitive factors helps many companies successfully define their positions in customers' mind, it may lead to the positioning errors such as under-positioning, over-positioning, or confused positioning. Therefore, the new business operators should fully understand about the company (resources), the community (customers), and the market (demands) before implementing any positioning strategy. (Kotler et al. 2006, 287-289.)

5.6 Marketing Mix Strategies

Every successful business has effective marketing strategies. The strategy ensures that the gap between customers' needs and company's products/services will be fulfilled. Marketing strategy should be flexible in order to respond to the changes of market demands and requirements. The combination of 5Ps (Product, Place, Price, Promotion, and People) is called a "tactical marketing mix". (QGOV, 2014.)

Product

According to Kotler (2014), a product is not only about tangible objects, but also other services offered along with it. Each product has three components: core product, actual product, and augmented product. By choosing EMA products, customers do not only buy a device or service, but also the health insurance, and safety. Moreover, EMA provides these devices with exclusive services to each customer. (Kotler 2014, 248.)

The EMA Medical Centre will provide a wearable healthcare agent along with two service packages.

Package 1: Device + Monitoring only

Package 2: Device + Monitoring + Emergency call

Device manufacturers: Due to the weakness of financial capacities, the EMA Medical Centre will not produce the devices. It will build partnerships with existing device manufacturers. In some ways EMA can be considered as another distribution channel of these manufacturers. Consequently, a good relationship between the EMA and producers needs to be taken carefully in order to achieve business goals. Two cooperating plans will be considered: The devices will be produced according to the EMA's design, or the existing products will be modified in order to make it suitable with EMA's purpose. The packaging and labelling of these devices will be designed following to the EMA's instructions.

Place

Place strategy refers to a distribution channel strategy of a company. Nowadays, a successful company does not only rely on its performance, but also the entire distribution channel performance. In this part, the author will only focus on the downstream marketing channel of a company. (Kotler 2014, 362.)

Location

Due to the special service offered by the EMA Medical Centre, it does not need to be located in the centre of cities. Therefore, the rental cost will be lower. Because this centre provides only monitoring service and emergency call, and does not offer any

specialized treatment, the required area is the same as a normal company size. The EMA Medical Centre will be positioned in Kuopio – one of the biggest cities in Eastern Finland.

Distribution channels

The wearable healthcare agent will be distributed through multiple channels in order to optimize the opportunities to reach the target market. **Direct marketing channels:** Online store, tele-selling (receiving orders), home shopping channels, and door-to-door. The service package and customers' personal information will be registered directly by the staff of EMA. **Indirect marketing channels:** using one intermediary such as Gigantti. The service package and registration can be done by retailers or by customers through internet. The long-term plan of the EMA Medical Centre is that it will have its own stores across the Eastern region to distribute its products and services. There may be various stores to supply the devices, but only one service centre is needed. Consumer marketing channels of The EMA Medical Centre are shown in Figure 26. (Kotler 2014, 370.)

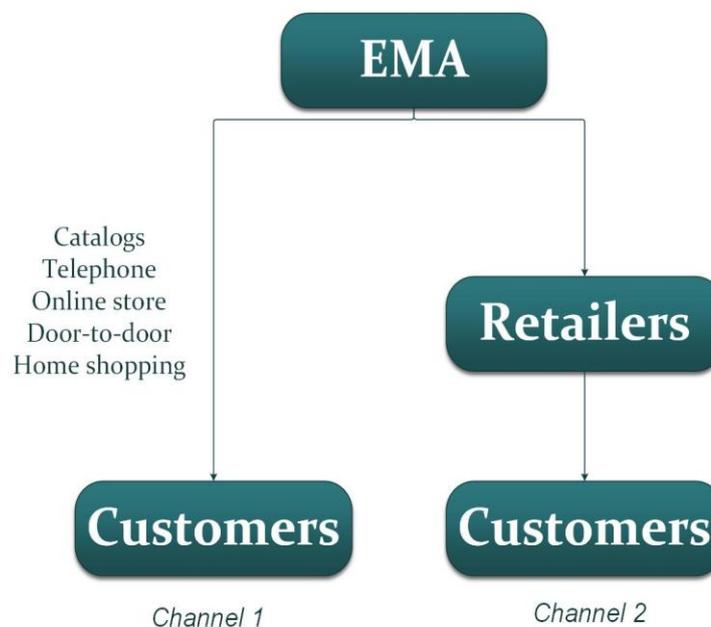


FIGURE 27. Consumer marketing channels of The EMA Medical Centre

Price

Setting the price of the products and services is an essential and sensitive work, because it directly impacts on the sales revenues of a company. (Kotler 2014, 336). EMA will set the price of the device and service by using the optional product pricing method. It will also allow customers to buy the device with a suitable service package. Furthermore, customers can choose to buy a device with one or two year contracts. Depending on the choice, the price of the devices will be set differently. The price of the total package with the two year contract will be lower than the one with one year contract. Therefore, the most important factor that affects to the pricing is the price of the devices from the EMA's suppliers. On the other hand, according to the result of the research, most customers are willing to pay for the service package within the range of price from 30 Euros to 50 Euros each month. At the first stage, promotional pricing will be used to create buying excitement and help EMA to penetrate the market.

The provisional pricing formula of EMA can be set as shown in Figure 27

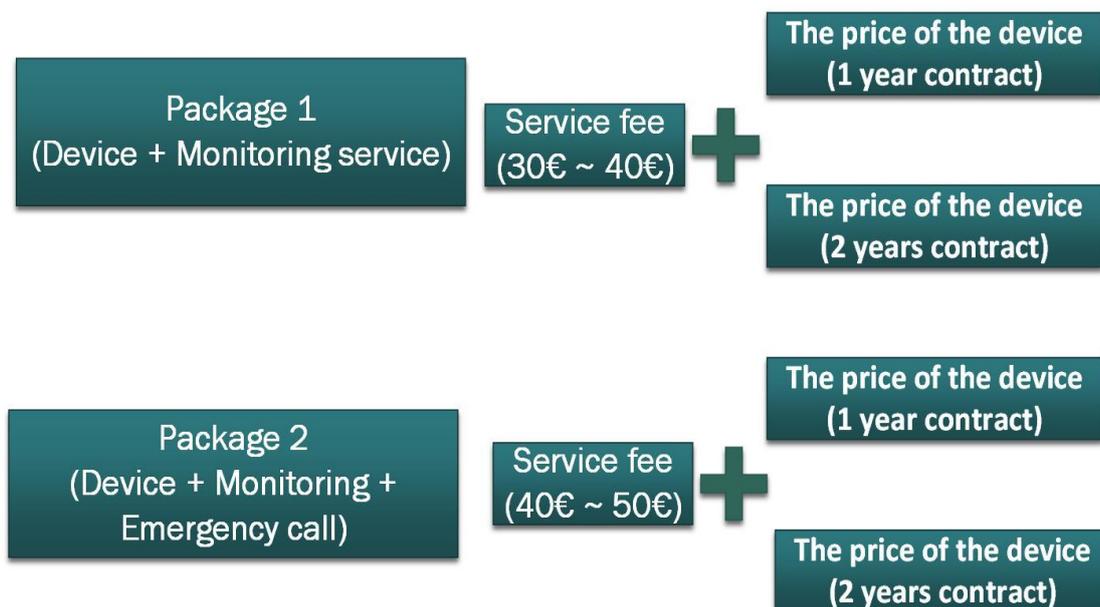


FIGURE 28. Provisional pricing formula

Figure 28 shows the example of EMA's final sales price including tax calculation. The total cost of the product is the sum of the device's price and the service fee. On the other hand, this calculation is applied to customers who buy a device with the one-time payment method. The instalment payment method will be estimated by other formula.



FIGURE 29. Example of the calculation of sales price (Uusyrituskeskukset 2014, 19.)

Promotion

A good product and service is not enough to make a company be noticed by customers. An effective promotion strategy will help customers be conscious of the company's products and services. Promotional activities include advertising, sales tactics, public relations, promotions and direct marketing. (Kotler 2014, 428-431.)

At first, *Informative advertising* will be used to promote EMA's products and services through traditional advertising channels such as newspapers, magazines, television, outdoor advertising, and online. Each media type has its own strengths and weaknesses, thus marketers need to evaluate each type carefully to enhance the image of the EMA Medical Centre. The objective of informative advertising activities is to provide the information about this new service and to build primary demand. Advertising strategy includes advertising message creation and advertising media selection. The first step of creating an *advertising message* is to determine customers' benefits. Temporary advertising slogan of EMA is "Save your time! Save your money! Save your life! Let's choose us!". Instead of directly pointing out features of the EMA's service, memorable and attention-getting words will be used in the ad to get the interest of customers. For example, "Are you tired of going and queuing at hospital?" The solution: "EMA's service will save your travelling and queuing time with exclusive service". *Billboards and advertising on television* are selected as the main channels to send out the message. Although outdoor advertising is not popular anymore, it still has its own power, especially when the message is creative. Many companies get huge

successes when using creative and innovative messages on their billboards. (Kotler 2014, 456-468.)

Guerrilla Marketing is used to bring surprise and/or unconventional interactions with customers. This marketing tactic is believed to give more valuable impressions than other traditional forms. Besides this, Guerrilla Marketing is a suitable strategy to yield maximum results for small companies with low-cost of advertising. (Entrepreneur, 2014.)

Real-experience events will be held in some major cities in Eastern Finland. At this event, customers will see how this product works and how EMA manages all the data received from the device. Some devices will be given as gifts to customers. This is a one-time event. It was proven that *Word-of-Mouth (WOM)* marketing has been one of the most effective ways to promote products. Therefore, the objective of these events is to get some positive feedback from potential customers and create a good impression. It will help to push EMA's service into the market consequently. (Lawler, 2014.)

Direct marketing such as direct mail/email, direct advertising, and tele-marketing will be used to give the right message to certain customers. The advertising content will be modified for each customer to achieve the best result. Direct marketing needs to be used carefully to avoid misleading or annoyance. (Entrepreneur, 2014.)

Personal selling relates to the sales force. A strong sales force will help the business to grow. Therefore, the EMA's Centre will need to develop a sales team with good interpersonal and communication skills. The sales force will have a deep understanding about the EMA's products and services. On the other hands, they have to improve verbal and non-verbal communication, and persuasion skills in order to build good customer relationships. (QGOV, 2014.)

Public relations (PR) is one of mass-promotion tools. It comprises of various activities aimed to build good relations with company's publics such as consumers, investors, communities, media, etc. (Kotler 2014, 472.) The purpose of PR activities is to raise awareness of the EMA Medical Centre as well as its products and services. This strategy will strongly impact on the company's image and its reputation, thus it needs

to be well-planned. PR practitioners and marketing manager have to regularly discuss and communicate to avoid the different objective in launching PR activities.

People

People refer to a company's workforce, which plays an important role in the value supply network. The cost of recruiting is one of the greatest costs of a company, thus hiring the right people is essential with all kinds of business, especially in the healthcare sector. Well-trained staff will help a company work more efficiently and effectively, therefore they are also the most valuable asset of one company. (QGOV, 2014.)

EMA's workforce includes people who have skills and knowledge in IT sector as well as nursing staff. Besides, employees working in the marketing department (including sales force) need to have a deep understanding about healthcare service and good communication skills.

One-to-one marketing

In the twenty-first century, the revolution of information technology (IT) has led to the change of many sectors. In the marketing side, it helps to collect information and to do the research easier with lower cost. Besides, one-to-one marketing, which strongly relies on the development of IT, has been used recently by many companies around the world. The operation of the EMA Medical Centre significantly relies on the relationship with customers; therefore it will also use one-to-one marketing as the main strategy to build customer relationship. One-to-one marketing can be seen as a strategy that based on a simple idea "treating different customers in different ways". (Peppers, Rogers, and Dorf 1999, 19-22.)

The purpose of this strategy is to create the loyalty and find profitable customers. It can be described in four stages:

Identifying customers is the first step in launching one-to-one marketing strategy. The business owner needs to collect information on customer as much as he can. All information will be stored in the company's database. It needs to be verified and updated regularly. (Peppers et al. 1999, 19.)

Differentiating customers will be done, after collecting information from customers. EMA will differentiate customers, according to specific criteria. Then, EMA will create suitable promotion activities for each customer. (Peppers et al. 1999, 19.)

Interacting is an essential phase in launching one-to-one marketing strategy. Nowadays, social media is a low-cost and effective channel to keep contact with customers. EMA will use collected data to delight its customers. (Peppers et al. 1999, 20.)

Personalized marketing is to send information/promotion/service that has been customized to certain customers according to their demands. (Peppers et al. 1999, 20-21.)

5.7 Financial plan

The financial plan is a critical part because it will determine if the business idea is feasible or not. On the other hand, it is also one of the most attractive parts with investors, partners. Generally, a simple financial plan consists of three financial statements, the investment calculation, profitability calculation, and sales calculation. (Uusyrituskeskukset 2014, 11.)

The investment calculation is used to indicate the potential sources that entrepreneurs can apply for funding, and the expense requirements for the business to grow. The expenditure requirements may include: cost of establishing a business (registration fee, and deposits), equipment, transportation, phone, working capital, marketing expense, etc. Working capital refers to the fix costs such as wages and salaries, rental costs, etc. (Uusyrituskeskukset 2014, 11.)

The profitability calculation is used to estimate the potential profitability of this business idea. It will show whether the forecasted sales (target sales in one day, one month) are feasible or not. (Uusyrituskeskukset 2014, 12.)

The sales calculation will estimate the amount sales per year. From these statements, entrepreneurs can have an overview of financial activities. (Uusyrituskeskukset2014, 11-14.)

Table 4 will indicate the estimated capital requirements for the EMA Medical Centre. It is calculated based on the cost of living in Kuopio. (Expatistan, 2014.)

TABLE 4. Example of EMA's investment calculation (Uusyrituskeskukset 2014, 11.)

The EMA Medical Centre - Investment calculation		
Rental deposits (3 months) 85m ² (900Sqft) furnished accommodation in EXPENSIVE areas	€	2,700
Renovation	€	4,000
Telephone, fax, copying, internet	€	250
Computers and software	€	3,000
Furnishings & fixtures	€	1,500
Supplies	€	1,000
Marketing investment	€	1,000
Registration fee	€	225
Initial inventory (100 devices x 300 Euros)	€	30,000
Working capital	€	10,000
Total capital requirement	€	53,675

The EMA Medical Centre will submit a business plan to some business angels such as FiBAN to apply for funding. A bank loan may be applied. On the other hand, Tekes is another funding source. In 2014, Tekes opened a call for business application for Digital Business. It is an opportunity of EMA. (Yrityssuomi, 2014.)

Table 5 gives an example of EMA's forecast profit and loss account. It presents the sales required for the EMA Medical Centre in one year.

TABLE 5. Example of EMA's forecast profit and loss account (Burns 2007, 400.)

The EMA Medical Centre				
	Monthly		Annually	
Sales	€	17,744	€	212,928 (A)
Variable costs				
<i>materials</i>	€	13,248		158,976
<i>direct wages</i>				
<i>other</i>				
Total variable costs	€	13,248	€	158,976
Gross profit/contribution	€	4,496	€	53,952 (B)
Fixed costs				
<i>target salary (incl. taxes)</i>	€	2,000		24,000
<i>rent</i>	€	800		9,600
<i>electricity, heat, water</i>	€	200		2,400
<i>advertising</i>	€	150		1,800
<i>insurance</i>	€	150		1,800
<i>transport</i>	€	150		1,800
<i>telephone/internet</i>	€	250		3,000
<i>stationery/postage</i>	€	50		600
<i>repairs/renewals</i>	€	50		600
<i>depreciation</i>	€	600		7,200
<i>local taxes</i>				
<i>other</i>				
Total fixed costs	€	4,400	€	52,800 (C)
Net profit	€	96	€	1,152
Break-even point = A/B x C	€	17,365	€	208,381

TABLE 6. Example of EMA's profitability calculation (Uusyrituskeskukset 2014, 12.)

The EMA Medical Centre				
	Monthly		Annually	
<i>Target profit (incl. owner target salary)</i>	€	3,500	€	42,000
<i>loan repayments</i>	€	500	€	6,000
Income after taxes	€	4,000	€	48,000
<i>Taxes 24%</i>	€	960	€	11,520
<i>funding requirements</i>	€	4,960	€	59,520
<i>loan interest</i>	€	80	€	960
Operating margin (required)	€	5,040	€	60,480 (A)
Fixed cost				
<i>target salary (incl. taxes)</i>	€	2,000	€	24,000
<i>rent</i>	€	800	€	9,600
<i>electricity, heat, water</i>	€	200	€	2,400
<i>advertising</i>	€	150	€	1,800
<i>insurance</i>	€	150	€	1,800
<i>transport</i>	€	150	€	1,800
<i>telephone/internet</i>	€	250	€	3,000
<i>stationery/postage</i>	€	50	€	600
<i>repairs/renewals</i>	€	50	€	600
<i>depreciation</i>	€	600	€	7,200
<i>local taxes</i>				
Total fixed cost	€	4,400	€	52,800 (B)
Sales margin required (A + B)	€	9,440	€	113,280
<i>Purchases +materials and supplies (net of VAT)</i>	€	4,500	€	54,000
Net sales required	€	13,940	€	167,280
<i>VAT 24%</i>	€	3,804	€	45,648
Total sales required	€	17,744	€	212,928

Based on the estimation of sales requirements from Table 5, Table 6 shows the forecasting profitability calculation. In these tables, all calculations were based on the estimated sale price, which is €400 and the estimated purchase price, which is €300. The materials cost is calculated by using this equation:

$$\text{Material cost} = \frac{\text{Sales}}{\text{Estimated sale price}} \times \text{Estimated purchase price}$$

6 CONCLUSION

A successful business requires many critical elements, e.g., demands, competitors, suppliers, capital investment, etc. For the new E-Medical Centre, the successful chance is summarized as follows. Firstly, the research on current Finish healthcare system showed critical demand for next generation of healthcare system since the current one will overload soon. Next, the results from the performed survey indicated a feasible trend for the new proposed medical centre: 62% of respondents knew about tele-services, 73% respondents used wearable healthcare agent. Contradict to the favourable results of the potential need; the potential demand is not as high as expected since only 57% of respondents love to have or willing to try the service. Then, SWOT, competitors, and risks analysis gave the whole picture about the success chance of this business plan. Finally, target segment and financial calculation were also carried out to predict the establishing cost and potential profits. From these results, it can be concluded that the demand for this new E-Medical centre is feasible. However, the proposed business plan has to face with numerous risks and challenges.

Every research study has its own obstacles and limitations. The biggest obstacle of this business plan is the requirements of extra numerous funding. Other obstacles include of several big competitors, the under expected potential demand from the survey results, the technology difficulties for the EMA and E-medical architecture, and the huge effort of technical transfer and required training for the operating technician. Besides that, the performed survey also faces some problems about sampling size and sampling target. The target market of the EMA Medical Centre is the Eastern region of Finland. Its population is about 650,000 inhabitants, while the survey can only collect 148 respondents due to the short duration of data collection. Hence, the result may not reflect the big picture of the market. On the other hand, this service is aimed at serving for elderly people – the users, while most of the answers come from the young and middle-age groups. Although the people of these groups can be seen as the potential buyers, the result collected from them cannot be considered as the demand of the target users.

To sum up, it can be concluded that there is a chance for establishing a new model of medical centre, but it would be a challenging task. It does not only require a well-prepared business plan or an attractive idea, but also need a huge capital investment,

strong management skills and professional employees. This research process gives the author a chance to review the literature, which was studied during the time at school and how to apply it in making a business plan.

BIBLIOGRAPHY

Books

Armstrong, G. & Kotler, P. (2014). *Principles of marketing*. 15th Edition. Pearson Education Limited. England

Burns, P. (2007). *Entrepreneurship and Small Business*. 2nd Edition. Palgrave Macmillan. USA

Deakins, D. (1999). *Entrepreneurship and Small Firms*. 2nd Edition. McGraw-Hill Publishing Company. England

Dixon-Fyle S., Gandhi S., Pellathy T., Spatharou A. (2012). *Changing patient behaviour: the next frontier in healthcare value*. McKinsey & Company. USA

Finch, B. (2010). *How to Write a Business Plan*. 3rd Edition. KoganPage. United Kingdom

Kotler, P., Armstrong G. (2014), *Principles of marketing*. 15th Edition. Pearson Education Limited. England

Kotler P., Bowen J.T. Makens J.C. (2006). *Marketing for Hospitality and Tourism*. 4th Edition. Pearson Education, Inc. USA

Kotler P., Keller K.L. (2012). *Marketing Management*. 14th Edition. Pearson Education Limited. England

Kumar V., Aaker, D.A. & Day G.S. (2002). *Essentials of Marketing Research*. 2nd Edition. John Wiley & Sons, Inc. USA

Lahtinen J., Isovitta A. (1994). *Customer relationship marketing*. 1st Edition. Avaintulos Oy. Finland

Peppers D., Rogers M., Ph.D., & Dorf B. (1999). *The one to one field book – The complete toolkit for implementing a 1to1 marketing program*. 1st Edition. Captone Publishing Limited. United Kingdom

Porter M.E. (1998). *Competitive Strategy Techniques for Analysing Industries and Competitors*. The Free Press. USA

Walker O.C.Jr., Mullins J.W. (2011). *Marketing Strategy – A Decision-Focused Approach*. 7th Edition. McGraw-Hill Irwin. USA

Internet source

ADE. (2011). *Study on the relevance and the effectiveness of ERDF and Cohesion Fund support to Regions with Specific Geographical Features – Islands, Mountainous and Sparsely Populated areas* [electronic file]. Analysis for Economic Decisions (ADE) [reference made 17.10.2014]. Available at:

http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/geographical_2nd_int_rep_ita_suomi.pdf

Badham, M. (2014). *Oulu leads with innovative healthcare* [web publication]. This is Finland [reference made 12.10.2014]. Available at:

<http://finland.fi/Public/default.aspx?contentid=310286&nodeid=37605&culture=en-US>

Bakkes, S., Morsch, R., Krose, B. (2011). *Tele-monitoring for independently living elderly: Inventory of needs & requirements* [e-journal]. IEEE Xplore® Digital Library [reference made 17.11.2014]. Available at:

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=6038782&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6038782

Berry, T. (2010). *How to Write an Executive Summary* [web publication]. Bplans [reference made 18.09.2014]. Available at:

<http://articles.bplans.com/writing-an-executive-summary/>

Bloomberg. (2014). *Healthcare Equipment and Supplies – Company Overview of Polar Electro Oy* [web publication]. Bloomberg Businessweek [reference made 12.10.2014]. Available at:

<http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=675800>

Davis, J. C. (2014). *New Finnish health tech for old problems* [web publication]. thisisFINLAND [reference made 10.11.2014]. Available at:

<http://finland.fi/Public/default.aspx?contentid=309696&nodeid=37605&culture=en-US>

Davis, M. (2014). *Identifying and Managing Business Risks* [web publication]. Investopedia [reference made 12.11.2014]. Available at:

<http://www.investopedia.com/articles/financial-theory/09/risk-management-business.asp>

Entrepreneur. (2014). *Business Plan* [web publication]. Entrepreneur [reference made 14.09.2014]. Available at:

<http://www.entrepreneur.com/encyclopedia/business-plan>

Entrepreneur. (2014). *How to write a business plan* [electronic file]. Entrepreneur [reference made 18.09.2014]. Available at:

<http://www.entrepreneur.com/formnet/form/561>

Entrepreneur. (2014). *How to Create a Direct Marketing Campaign* [web publication]. Entrepreneur [reference made 14.11.2014]. Available at:

<http://www.entrepreneur.com/article/80786>

Entrepreneur. (2014). *What Is Guerrilla Marketing?* [web publication]. Creative Guerrilla Marketing [reference made 14.11.2014]. Available at:

<http://www.creativeguerrillamarketing.com/what-is-guerrilla-marketing/>

Expatistan. (2014). *Cost of living in Kuopio, Finland* [web publication]. Expatistan [reference made 18.11.2014]. Available at:

<http://www.expatistan.com/cost-of-living/kuopio>

Findicator. (2013). *Small and Medium size Enterprises* [web publication]. Findicator [reference made 19.09.2014]. Available at:

<http://findikaattori.fi/en/86>

FiTHA. (2013). *It's booming in health tech in Finland* [electronic file]. FiTHA – Healthtech Finland [reference made 10.10.2014]. Available at:

<http://www.finnishhealthtech.fi/component/banners/click/4>

Harrison S.O. (2013). *The problem of sampling in qualitative research* [journal]. Asian Journal of management sciences and education [reference made 03.11.2014]. Available at:

[http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.2\(2\)/AJMSE2013\(2.2-21\).pdf](http://www.ajmse.leena-luna.co.jp/AJMSEPDFs/Vol.2(2)/AJMSE2013(2.2-21).pdf)

Heikkinen, M. P. & Teivainen A. (2014). *Self-tracking trending up in Finland* [electronic newspaper]. Helsinki Times & Helsinki Sanomat [reference made 14.09.2014]. Available at:

<http://www.helsinkitimes.fi/lifestyle/10982-self-tracking-trending-up-in-finland.html>

HOPE. (2011). *The Crisis, Hospitals and Healthcare* [electronic file]. HOPE - European Hospital and Healthcare Federation [reference made 05.10.2014]. Available at:

http://www.hope.be/05eventsandpublications/docpublications/86_crisis/86_HOPE-The_Crisis_Hospitals_Healthcare_April_2011.pdf

HOPE. (2014). *The Healthcare Workforce in Europe: Problems and Solutions* [electronic file]. HOPE – European Hospital and Healthcare Federation [reference made 05.10.2014]. Available at:

http://www.hope.be/05eventsandpublications/docpublications/73_workforce/73_healthcare_workforce_2004.pdf

Infodent International. (2009). *Focus on Finland* [electronic file]. Infodent International [reference made 10.10.2014]. Available at: www.gnydm.com/pdfs/Focus-On-Finland.pdf

Kiss, N., Patai, G., Hanak, P., Lipic, L., Skoda, P., Gjenero, L., Dubravic, A., Michieli, I. (2011). *Vital fitness and health tele-monitoring of elderly people* [e-journal]. IEEE Xplore® Digital Library [reference made 17.11.2014]. Available at:

http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=&arnumber=5967065&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D5967065

Kratzman V. (2014). *Wearable, Digestible, Implantable Technologies* [web publication]. Finpro Blog [reference made 10.11.2014]. Available at:

<http://www.finland.org/public/default.aspx?contentid=309078&culture=en-US>

Lawler, E. (2013). *The rise of experiential marketing* [electronic file]. Brandedcontent [reference made 14.11.2014]. Available at:

<http://brandedcontent.adage.com/pdf/experientialmarketing.pdf>

Malcolm. (2012). *Finland nurse shortage may become critical* [electronic newspaper]. Ice News – News from the Nordics [reference made 14.09.2014]. Available at:

<http://www.icenews.is/2012/10/12/finland-nurse-shortage-may-become-critical/>

MBA. (2014). *Porter's Generic Strategies* [web publication]. Quick MBA [reference made 12.11.2014]. Available at:

<http://www.quickmba.com/strategy/generic.shtml>

MFA. (2014). *Countries and regions – About Finland* [web publication]. Ministry for Foreign Affairs of Finland [reference made 17.10.2014]. Available at:

<http://www.formin.fi/public/default.aspx?nodeid=46289&contentlan=2&culture=en-US>

MSAH. (2013). *Healthcare in Finland* [electronic file]. Ministry of Social Affairs and Health [reference made 02.10.2014]. Available at:

http://www.stm.fi/c/document_library/get_file?folderId=6511570&name=DLFE-26813.pdf

Numbeo (2014). *Cost of living in Kuopio, Finland* [web publication]. Numbeo [reference made 18.11.2014]. Available at:

http://www.numbeo.com/cost-of-living/city_result.jsp?country=Finland&city=Kuopio

Nummi, J. (2006). *University – Industry Collaboration in Medical Devices Development* [electronic file]. MIT Industrial Performance Center (IPC) [reference made 12.10.2014].

Available at:

<http://web.mit.edu/lis/papers/LIS06-001.pdf>

OECD. (2013). *Health at a Glance 2013 - OECD Indicators* [electronic file]. OECD [reference made 04.10.2014]. Available at:

<http://www.oecd.org/els/health-systems/Health-at-a-Glance-2013.pdf>

OECD. (2014). *Economic survey of Finland 2014* [electronic file]. OECD [reference made 19.09.2014]. Available at:

<http://www.oecd.org/eco/surveys/economic-survey-finland.htm>

Polar. (2014). *Heart Rate Monitors and GPS sport watches* [web publication]. Polar Electro Oy [reference made 11.11.2014]. Available at:

<http://www.polar.com/en/products>

PRH. (2014). *Start a business – General Information* [web publication]. Finnish Patent and Registration Office [reference made 28.09.2014]. Available at:

http://www.prh.fi/en/kaupparekisteri/yrityksen_perustaminen/perusilmoituksen_tekeminen.html

QGOV. (2014). *Sales skills* [web publication]. Queensland Government [reference made 12.11.2014]. Available at:

<https://www.business.qld.gov.au/business/running/sales-customer-service/sales-skills>

QGOV. (2014). *The 5 Ps of marketing* [web publication]. Queensland Government [reference made 12.11.2014]. Available at:

<https://www.business.qld.gov.au/business/running/marketing/marketing-basics/five-ps-marketing>

QGOV. (2014). *Information technology risk management* [web publication]. Queensland Government [reference made 12.11.2014]. Available at:

<https://www.business.qld.gov.au/business/running/risk-management/information-technology-risk-management>

QGOV. (2014). *Finding the right people* [web publication]. Queensland Government [reference made 17.11.2014]. Available at:

<https://www.business.qld.gov.au/business/employing/taking-on-staff/finding-staff>

Saylor Academy. (2014). *Risk Management for Enterprises and Individuals* [electronic file]. Saylor Academy [reference made 12.11.2014]. Available at:

<http://www.saylor.org/site/textbooks/Risk%20Management%20for%20Enterprises%20and%20Individuals.pdf>

Segercrantz, M., Haapanen A. (2011). *Medical devices – Finland* [electronic file]. Lexmundi Publication [reference made 08.10.2014]. Available at:

<http://www.lexmundi.com/Document.asp?DocID=3074>

Small Business Development Corporation. (2014). *Market Research* [web publication]. Government of Western Australia [reference made 14.10.2014]. Available at:

<http://www.smallbusiness.wa.gov.au/market-research/>

Statistic. (2012). *Projection for the number of persons aged 65 or over slightly lower* [web publication]. Statistic Finland [reference made 14.0.9.2014]. Available at:

http://www.stat.fi/til/vaenn/2012/vaenn_2012_2012-09-28_tie_001_en.html

Statistic. (2014). *Health Expenditure and Financing 2012* [web publication]. Statistic Finland [reference made 08.10.2014]. Available at:

<http://www.thl.fi/en/web/thlfi-en/statistics/statistics-by-topic/finances-in-the-health-and-social-services-sector/health-expenditure-and-financing>

Survio. (2013). *How to Create a Survey – Survey Question Types with Examples* [web publication]. Survio [reference made 03.11.2014]. Available at:

http://www.survio.com/en/blog/tips-and-tricks/how-to-create-a-survey-survey-question-types#.VFeNDvmUf_4

Teperi, J., Porter M. E., Vuorenkoski L., Baron J. F. (2009). *The Finnish Healthcare System: A Value-Based Perspective* [electronic file]. Sitra [reference made 04.10.2014]. Available at:

<http://www.sitra.fi/julkaisut/raportti82.pdf?download=Download+pdf>

The Economist. (2011). *The future of healthcare in Europe – A report from the Economist Intelligence Unit Sponsored by Janssen* [electronic file]. The Economist Intelligence Unit [reference made 05.10.2014]. Available at:

<http://www.janssen-emea.com/sites/default/files/The-Future-Of-Healthcare-In-Europe.pdf>

Uusyrityskeskukset. (2014). *Becoming an Entrepreneur in Finland* [electronic file]. Uusyrityskeskukset [reference made 19.09.2014]. Available at:

<http://www.uusyrituskeskukset.fi>

Vero. (2014). *Starting up business in Finland - foreign company* [web publication]. Vero SKATT [reference made 19.09.2014]. Available at:

[http://www.vero.fi/en-US/Companies_and_organisations/Foreign_business_in_Finland/Starting_up_business_in_Finland_foreig\(15344\)](http://www.vero.fi/en-US/Companies_and_organisations/Foreign_business_in_Finland/Starting_up_business_in_Finland_foreig(15344))

WHO. (2014). *Medical Devices – Definitions* [web publication]. WHO [reference made 19.09.2014]. Available at:

http://www.who.int/medical_devices/en/

Wood, L. (2013). *Research and Markets: Northern Europe Medical Device Market Reports 2013* [web publication]. Reuters [reference made 10.10.2014]. Available at:

<http://www.reuters.com/article/2013/05/28/research-and-markets-idUSnBw286348a+100+BSW20130528>

Yrityssuomi. (2014). *Call for applications – Digital Business* [web publication]. Yrityssuomi [reference made 18.11.2014]. Available at:

<http://www.yrityssuomi.fi/en/tiedote/-/julkaisu/callforapplicationsdigitalbusiness>

**THE SURVEY FOR COLLECTING IDEA ABOUT THE E-MEDICAL CENTRE IN EASTERN
FINLAND**

Dear Respondents,

My name is Lam Quynh Tran, I am currently studying at Savonia University of Applied Sciences and doing my final thesis on “Business plan for a new type of Medical Centre in Eastern Finland”. A survey is compulsory for my research to get real solutions as well as real demand. Therefore, I hope you to help me finish my research by answering these follow questions.

I hereby assure that all collected information will be used only for study purpose.
Thank you very much for your cooperation and your help!

If you have further questions on this survey, please contact supervisor teacher via email.

Virpi Oksanen

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Some definitions which appear in questionnaires.

**Health tele-monitoring*: refers to health remotely monitoring for patients who are not at the same place with medical staffs.

**Wearable health care agent*: The devices are used to collect health data from user and update information for health monitoring purposes.

**E-Medical Centre*: refers to a new type of Medical Centre, which provides health tele-monitoring service.

1. Age group

- » ≤ 20
- » 21 – 40
- » 41 – 60
- » ≥ 61

2. Gender

- » Male
- » Female

3. Where do you live?

- » Varkaus
- » Kuopio
- » Iisalmi
- » Joroinen
- » Others, please specify _____

4. Do you know about health tele-monitoring? (Health data management of a specialized Medical Centre)

- » Yes
- » No

5. Do you think tele-monitoring will help elderly people to prevent and reduce the risk? For example, when a user is in a dangerous situation (choke, heart problem, etc.), urgent notification will be sent to E-Medical Centre)

- » Strongly agree
- » Somewhat agree
- » Neutral
- » Somewhat disagree
- » Strongly disagree

6. Do you have any wearable health care agent? (Heart rate monitor, Blood pressure, etc.)

- » Yes, please continue with question number 7
- » No, please go to question number 9

7. How often do you use it?

- » Very often (Almost every day)
- » Often (several times a week)
- » Sometime (several times a month)
- » Rarely (several times in a few months)
- » Never

8. What is your purpose of using this kind of device?

- » Monitoring own health
- » Tracking daily exercise
- » Others, please specify_____

9. If a wearable health care agent is a watch, would you be willing to use it?

- » Very much
- » Much
- » No idea
- » Not much
- » Don't like

10. Would you like to buy a wearable health care agent with tele-monitoring service package for your relative (parents, grandparents, etc.)?

- » Very much
- » Much
- » No idea
- » Not much
- » Don't like

11. Which functions do you think an E-Medical Centre should have?

- » Monitoring only
- » Monitoring + Emergency call
- » Monitoring + Emergency call + Treatment

12. How much price would you prefer to pay for this kind of service in one month?

- » ≤ 30 Euros
- » 30 – 40 Euros
- » 40 – 50 Euros
- » ≥ 50 Euros

Thank you for your answers!

Hyvät vastaajat,

Nimeni on Lam Quynh Tran. Opiskelen tällä hetkellä Savonian ammattikorkeakoulussa ja kirjoitan opinnäytetyötäni aiheesta “Business plan for a new type of Medical Centre in Eastern Finland”. Kyselyn teettäminen on välttämätöntä tutkimukselleni, jotta saan totuudenmukaiset tulokset ja todellisen tarpeen. Siksi toivonkin apuasi tutkimukseni loppuunsaattamisessa vastaamalla näihin kysymyksiin.

Täten vakuutan, että kaikki vastaukset menevät vain tutkimuskäyttöön.

Kiitos yhteistyöstä ja avusta!

Mikäli sinulla on mitään kysyttävää tähän kyselyyn liittyen, voit ottaa yhteyttä ohjaavaan opettajaan sähköpostitse:

Virpi Oksanen

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Joitain määritelmiä termeille, jotka esiintyvät kyselyssä:

**Terveyden etäseuranta*: viittaa niiden potilaiden terveyden seurantaan, jotka eivät ole samassa paikassa kuin sairaanhoitohenkilökunta.

**Päälläpidettävät terveydentilan seuraajat*. Laitteet, joilla kerätään dataa potilaan terveydestä ja päivitetään tietoa terveydenseurantaan liittyvistä syistä.

**Sähköinen terveyskeskus*: uudenlainen terveyskeskus, joka tarjoaa terveyden etäseuranta palveluja.

1. Ikäryhmä

- » ≤ 20
- » 21 – 40
- » 41 – 60
- » ≥ 61

2. Sukupuoli

- » Mies
- » Nainen

3. Kotikunta

- » Varkaus
- » Kuopio
- » Iisalmi
- » Joroinen
- » Muu, kerro _____

4. Oletko tietoinen terveyden etäseurannasta? (Terveysdatan hallinta tietystä terveyskeskuksesta)

- » Kyllä
- » Ei

5. Uskotko, että etäseuranta auttaa ehkäisemään ja vähentämään riskejä vanhuksilla? Esimerkiksi vaarallisissa tilanteissa (tukehtuminen, sydänongelmat jne.) tieto lähetetään heti terveyskeskukselle)

- » Olen täysin samaa mieltä
- » Olen osittain samaa mieltä
- » En samaa enkä eri mieltä
- » Olen osittain eri mieltä
- » Olen täysin eri mieltä

6. Onko sinulla mitään päällä pidettävää terveydenseurantalaitetta? (Sykemittari, verenpainemittari tms.)

- » Kyllä, jatka kysymykseen 7
- » Ei, ole hyvä ja siirry kohtaan 9

7. Kuinka usein käytät laitetta?

- » Todella usein (lähes joka päivä)
- » Usein (useita kertoja viikossa)
- » Joskus (useita kertoja kuukaudessa)
- » Harvemmin (joitain kertoja muutamassa kuukaudessa)
- » En koskaan

8. Mihin tarkoitukseen käytät laitetta?

- » Oman terveydenseurantaan
- » Päivittäisen kuntoilun seurantaan
- » Muu syy, kerro _____

9. Jos käytettävä laite olisi kello, olisitko halukas käyttämään sitä?

- » Todella halukas
- » Halukas
- » En osaa sanoa
- » En kovin halukas
- » En olisi

10. Olisitko halukas ostamaan päälläpidettävän terveydenseuranta laitteen sukulaisellesi (vanhemmat, isovanhemmat jne.)?

- » Todella halukas
- » Halukas
- » En osaa sanoa
- » En kovin halukas
- » En olisi

11. Mitä palveluita sähköisellä terveystieteillä sinun mielestäsi pitäisi olla?

- » Vain seuranta
- » Seuranta + hätäpuhelut
- » Seuranta + hätäpuhelut + hoito

12. Paljonko olisit valmis maksamaan tällaisesta palvelusta kuukausittain?

- » ≤ 30 Euroa
- » 30 – 40 Euroa
- » 40 – 50 Euroa
- » ≥ 50 Euroa

Kiitos vastauksistasi!

EXECUTIVE SUMMARY OF THE EMA MEDICAL CENTRE

Business name and address:

EMA Medical Centre

Kuopio, Finland

Proprietor's name and address:

Lam Quynh Tran

Varkaus, Finland

Business form: Limited Partnership

Business activity:

Tele-monitoring healthcare service

Monitoring customers' health data through a wearable healthcare agent. Using this E - medical service, the customer is required to wear an E-Health monitoring agent (EMA). The principle of this E - Medical Centre is that customers' health will be monitored by these EMAs. These EMAs will do basic health monitoring activities (such as ECG (heart rate monitor), blood pressure, and temperature). The health data will be transferred to a data processing centre via a secured GMS network. Inside the E – Medical Centre, data is transferred within a secured network for emergency centre, storage centre, and for physicians to perform correct actions. EMA Centre plays an intermediary role between the device producers and the specialised medical centres.

Objectives:

Income over € 18,000

To be the first E-medical centre in Eastern Finland

To provide a better healthcare service for elderly and disabled people

Market size and growth:

The main market will be the Eastern region of Finland, especially in big cities such as Kuopio, Mikkeli, Joensuu, Savonlinna, etc. Within this region, there are 54 municipalities (2009). Eastern Finland has a population of 650,000 (2010) and the numbers of older people tend to increase. This is a potential

market for private healthcare service to grow. The EMA Medical Centre will segment customers into two groups mainly based on demographic and behavioural variables.

Competitors:

EMA has two types of competitor. One type is from the device manufacturers and other type is from existing primary healthcare centres. Nowadays, many Finnish companies focus on developing products, which can perform health tracking, such as Polar Electro Oy, Heia Heia, Mendor, Valkee, Nurse Buddy, Beddit, etc. Among them, Polar can be considered as the strongest company in this field. Although the products and services of Polar and the EMA Medical Centre seem alike, their target markets are different. Polar focuses on providing services for fitness and training purposes, meanwhile EMA provides healthcare service to the population.

Competitive advantages:

- Customers can access to their health data easily everywhere through EMA's database website.
- The device helps to reduce the travelling cost and time as well as the burden on the primary healthcare system.
- The biggest difference between EMA Centre and other wearable device producers is that EMA provides emergency calls to the nearest hospitals when there are problems with customers' health.

Proposed customers:

See section "Market size and growth".

The EMA Medical Centre will segment customers into two groups mainly based on demographic and behavioural variables. Psychographic and geographic variables can be seen as added criteria. People who are living in Eastern Finland are the target groups. EMA's customers will be people, who are middle-income, have awareness of using modern devices to monitor their health. They can be in different stages of age or they may not be the users but the buyers.

The primary groups are the elderly, disabled people, who find difficult to travel for long distance to hospital.

The secondary groups are the younger generation, who have a busy life and enthusiasm for the high-tech devices.

Advertising and promotion strategy:

Personal approaches: Brochures, advertising, flyers, mail, email, etc.

Billboards and advertising on television are selected as the main channels to send out the message

Guerrilla marketing is used to bring surprise and/or unconventional interactions with customers.

Real-experience Events will be held in some major cities in Eastern Finland. At this event, customers will see how this product works and how EMA manages all the data received from the device. Some devices will be given as gifts to customers. This is a one-time event.

Pricing strategy:

EMA will set the price of the device and service by using the optional product pricing method. It will also allow customers to buy the device with a suitable service package. Furthermore, customers can choose to buy a device with one or two year contracts. Depending on the choice, the price of the devices will be set differently. The price of the total package with the two year contract will be lower than the one with one year contract.

The suggested service fee is between €30 and €50.

Financial highlights

Turn over:	€18,164
Break-even point:	€17,600
Funding requirement:	€53,675
Source of funds:	Bank loans, business angels, Tekes

