

Opportunities during the Covid-19 Pandemic

A Case Study with the Startup: SWS-Medicare

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Abstract

This thesis aimed to explore the opportunities during the Covid-19 pandemic. Furthermore, the entrepreneurial process during the pandemic will be presented in the case of the SWS-Medicare GmbH.

The thesis was conducted with secondary and primary research methods both. Mainly literature research was used for the theoretical part. The empirical part was based on secondary research. However, one part of the empirical part was done through interviews. There the owners of the case company were interviewed.

The result of this thesis is an outlook for the demand for masks. Moreover, with the help of the Ansoff-Matrix, strategies on how the SWS-Medicare can stay relevant after the pandemic are presented.

Language: English

Key words: entrepreneurship, entrepreneur, opportunity, SWS-Medicare, entrepreneurial process, mask, resources

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1 Introduction

“When written in Chinese, the word ‘crisis’ is composed of two characters. One represents danger and the other represents opportunity.”

—John F. Kennedy

“Coronavirus disease (Covid-19) is an infectious disease caused by a newly discovered coronavirus.” (WHO, n.d.). On 30th January 2020, the coronavirus outbreak was declared a public health emergency of international concern by the WHO Director-General. (WHO, n.d.). Following that, one could see how fast the virus spread, which until now (20.04.2021) resulted in over 3 million deaths. To contain the virus, countries decided on measures, which were implemented soon after the declaration of the global health crisis. These measures have included and still include social distancing, increased hygiene, and lockdowns. The lockdowns and social distancing mandates led to the loss of jobs, dissatisfaction at home, or even boredom. Nevertheless, this led some people to discover opportunities in the crisis. Discovering an opportunity is typically linked with entrepreneurship, which is why I worked together with a company that started to produce masks at the start of this pandemic. For this, the entrepreneurial process was something I was particularly interested in, especially the entrepreneurial opportunity, the resources, and the environment that caught my interest. I wanted to analyze what resources entrepreneurs can use to start up a business or what they should consider regarding the environment they want to start up their business in. These are topics I am in close contact with, and which engage me, as I can observe that in my immediate vicinity.

1.1 Purpose and limitations

The purpose of this thesis is to explore the opportunities that have been opened during the Covid-19 pandemic.

The theoretical part of this thesis deals with entrepreneurship. The research is focused on the process of entrepreneurship, consisting of entrepreneurial opportunity, entrepreneur, resources, and environment. In the empirical part of the thesis insights on what kind of companies were founded during the pandemic will be given.

Furthermore, in cooperation with the case company SWS-Medicare, the process of establishing an enterprise during the pandemic will be presented.

In conclusion, several ideas will be presented on how the company can survive after the pandemic since it was founded especially for the high demand for masks during the pandemic.

1.2 Aim and Goals

This thesis aims to gain insights into entrepreneurship, especially the entrepreneurial process. Furthermore, this thesis aims to identify the entrepreneurial process during the pandemic for the case company SWS-Medicare, which was founded as a response to the global health crisis. Moreover, it aims to illustrate ways for the case company to exist after the pandemic. Additionally, the opportunities which arose with the pandemic will be discussed.

1.3 Research questions

Within this thesis, three research questions will be answered.

1. What are the opportunities that arose with the pandemic?

To answer this question, first, the entrepreneurial opportunity must be presented, which is a component of the entrepreneurial process.

2. What was the entrepreneurial process for the SWS-Medicare?

The entrepreneurial process consists of various components, which will be introduced in this thesis. Moreover, these components will be implemented in the entrepreneurial process for SWS-Medicare.

3. How can the case company SWS-Medicare continue after the pandemic?

To determine the further procedure of the company, a study on mask demand will be analyzed. Moreover, with an Ansoff-Matrix different approaches will be discussed.

1.4 Methodology

To answer the research questions the thesis is divided into a theoretical and a practical part. This separation should allow relevant theories from the first part to be tested in a realistic environment during the second part.

In the theoretical part mainly literature research is used. This enables the elaboration of basics, backgrounds, and relevant theories of the entrepreneurial process. The literature research is based on textbooks, relevant websites, existing academic papers, and business journals.

In the empirical part, there was a blend of secondary sources and primary sources. The opportunities which have been opened during the pandemic were conducted with secondary research, mainly websites. However, to be able to describe the entrepreneurial process, a blend of secondary sources and a primary source was used. The secondary sources were news articles, news videos, and the website of the company. Furthermore, the primary research was conducted through an interview with one of the founders of the case company.

2 Entrepreneurship

The term "entrepreneurship" originates from the French word "entreprendre", which means "to undertake something" or "to take matters into one's hands".

"Entrepreneurship is a phenomenon that manifests itself throughout the economy and in many different forms with many different outcomes, and these outcomes are not always related to the creation of financial wealth; for example, they may be related to increasing employment, tackling inequalities, or indeed, increasing environmental issues." (OECD, 2011)

Furthermore, entrepreneurship is seen as a core element of economic performance, especially concerning innovative change processes that play an important structural and dynamic role in economies. (OECD, 2004)

"Increased consensus has been attained on the concept of entrepreneurship as the process of uncovering and developing an opportunity to create value through innovation and seizing that opportunity without regard to either resources or the location of the entrepreneur in a new or existing company" (Churchill, 1992)

Moreover, "Entrepreneurship" is the process of starting a venture of a business or an organization for profit or social needs. An "entrepreneur" is someone who sees a need and takes on the financial risk to start a business to fulfill that need. (Altili, 2019)

3 Entrepreneurial Process

According to (Wickham, 2006, p. 223), the entrepreneurial process “results from the action of the entrepreneur.” As seen in figure 1 the entrepreneur is at the center of the entrepreneurial process and has the responsibility to bring together the market opportunity, the business organization, and the resources which will be invested.

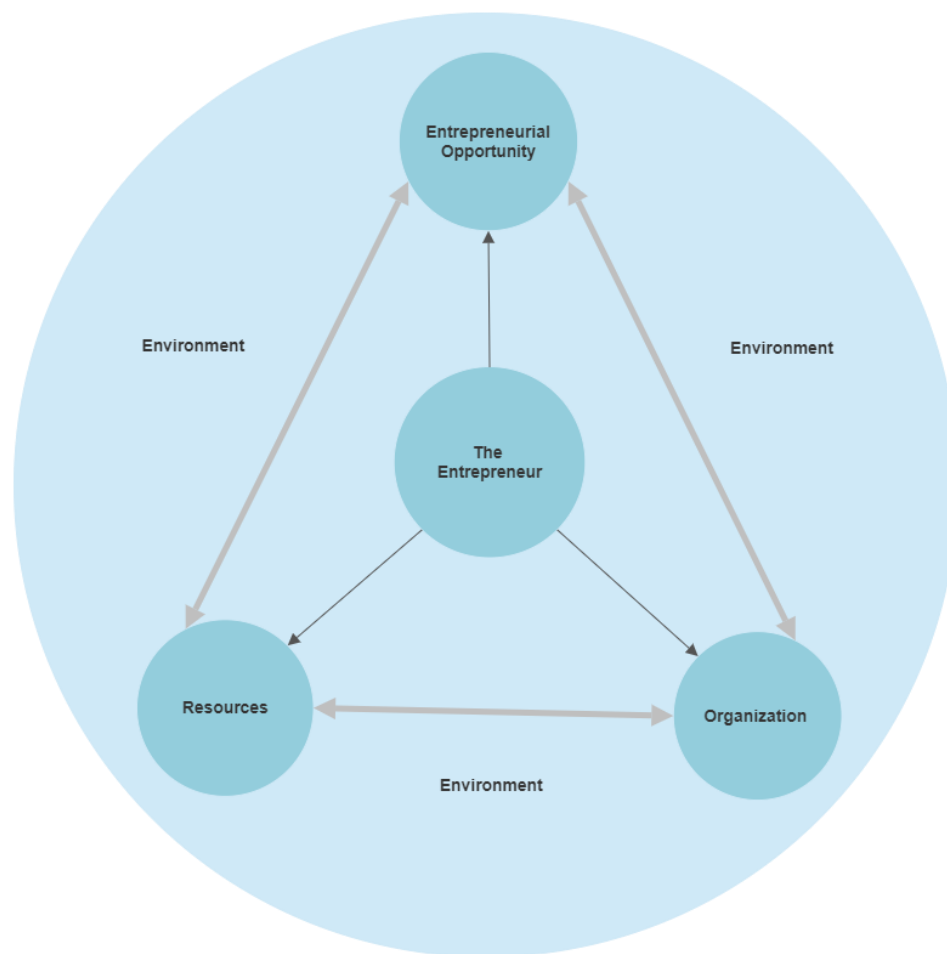


Figure 1: Entrepreneurial process (Wickham, 2006)

4 Entrepreneur

The entrepreneur is the individual in the center of the entrepreneurial process, who drives the entire process (Wickham, 2006, p. 223)

Throughout history, many different definitions of an “entrepreneur” have been provided. Presented below is a selection of influential representatives of economics and their definition of the entrepreneur, combined, these give a comprehensive overview of the wide range of possible entrepreneurial functions.

1) Cantillon (1734): Cantillon sees the entrepreneur as an individual driven by his pursuit of profit and endowed with the ability to acquire goods cheaply and sell them more expensively. The entrepreneur is characterized by risk-taking.

2) Say (1816): Characteristic of Say's entrepreneurial function is the organization of the production process through a combination of the three factors of production: land, capital, and employment.

3) Knight (1921): For Knight, the entrepreneur is primarily a bearer of uncertainty (true uncertainty). Unlike risk, this uncertainty cannot be assigned an exact probability of occurrence. According to Knight, the will to face this incalculable uncertainty is the basis of the true entrepreneur.

4) Schumpeter (1934): Schumpeter's image of the entrepreneur is characterized by his innovative behavior and the concept of the "creative destruction" of market equilibrium.

5) Kirzner (1973): The entrepreneurial function according to Kirzner is characterized by the use of arbitrage opportunities. Incomplete information in a market is used for entrepreneurial advantage and new market equilibrium is created.

(Boutillier & Uzundis, 2016, pp. 8-9)

5 Entrepreneurial Opportunities

“To have entrepreneurship, you must first have entrepreneurial opportunities.”

- (Shane & Venkataraman, 2000, p. 220)

Even though aspiring entrepreneurs come up with ideas all the time, it does not mean that it is a good idea. To pursue an idea, it first must be determined whether the idea will translate into an entrepreneurial opportunity. Entrepreneurial opportunities are defined as situations where products and services can be sold at a price greater than the cost of their production. Shane and Venkataraman define entrepreneurship as “how, by whom, and with what effects, opportunities to create future goods and services are discovered, evaluated, and exploited.” (Shane & Venkataraman, 2000, p. 220) Furthermore, entrepreneurial opportunity is defined as the juncture at which identifiable consumer demand points to the practicability of the desired product or service. (Lavery & Littel, 2020)

In this chapter, two theories of entrepreneurial opportunity will be presented. Furthermore, the types of opportunities will be defined.

5.1 Process of Opportunity

The process of opportunity consists of the existence, discovery, and exploitation of opportunities as seen in figure 2.



Figure 2: Process of Opportunities (Shane & Eckhardt, 2003, p. 164)

5.1.1 Existence of Opportunities

In the creation theory, Schumpeter argues that the existence of entrepreneurial opportunities depends on the entrepreneur who acts to create them. In the creation theory, the entrepreneurs first act and wait for a response from their actions, as opposed to recognizing opportunities first and then acting on them. Furthermore, “entrepreneurs do not become aware of new opportunities by re-combining existing knowledge in new ways. Rather, in this theory, entrepreneurs create new knowledge about previously non-existent opportunities by acting, then closely observing the market’s responses to those actions, learning, and then acting again.” (Alvarez & Barney, 2007, pp. 6-9)

However, according to Kirzner’s discovery theory, opportunities result from competitive imperfections in markets caused by changes in technology, consumer preferences, or other characteristics of the environment in which industry or market exists. (Alvarez, et al., 2010) The emergence of opportunity is not dependent on entrepreneurial action and waits to be discovered by alert entrepreneurs to be exploited. (Alvarez & Barney, 2007, pp. 4-6)

5.1.2 Discovery of Opportunities

“Although an opportunity for entrepreneurial profit might exist, an individual can earn this profit only if he or she recognizes that the opportunity exists and has value. Given that an asymmetry of beliefs is a precondition for the existence of entrepreneurial opportunities, all opportunities must not be obvious to everyone all of the time” (Hayek, 1945 in (Shane & Venkataraman, 2000, p. 221)). “At any point in time, only some subset of the population will discover a given opportunity” (Kirzner, 1973 in (Shane & Venkataraman, 2000, p. 221)

5.1.3 Exploitation of Opportunities

According to Shane, after an individual discovers an opportunity, she or he must make the decision, if she or he wants to exploit it (Torikka, n.d., p. 7). The entrepreneur can exploit an opportunity alone, in a team or it can be decided to sell a license of a patent. (Fust, et al., 2019, p. 37)

5.2 Types of Opportunities

There are various ways in which entrepreneurial opportunities manifest themselves. (Eckhardt & Shane, 2003, p. 340) Eckhardt and Shane define three ways to categorize opportunities: “[...] the locus of the changes that generate the opportunity; [...] the source of the opportunities themselves; and [...] the initiator of the change.” (Eckhardt & Shane, 2003, p. 340)

5.2.1 Locus of Changes

Whereas most entrepreneurship researches assume implicitly that entrepreneurship involves changes in products or services, entrepreneurial opportunities may arise because of changes in some parts of the value chain. (Eckhardt & Shane, 2003, p. 340) Schumpeter defines five different changes: the introduction of new products or services, the penetration of a new market, the tapping into a new source of supply of raw materials, the introduction of a new manufacturing process, and the implementation of reorganizing an industry. (Schumpeter, 1934)

5.2.2 Sources of Opportunities

Shane and Eckhardt define different sources of opportunities based on prior research. Figure 3 states the different sources that can lead to an opportunity.

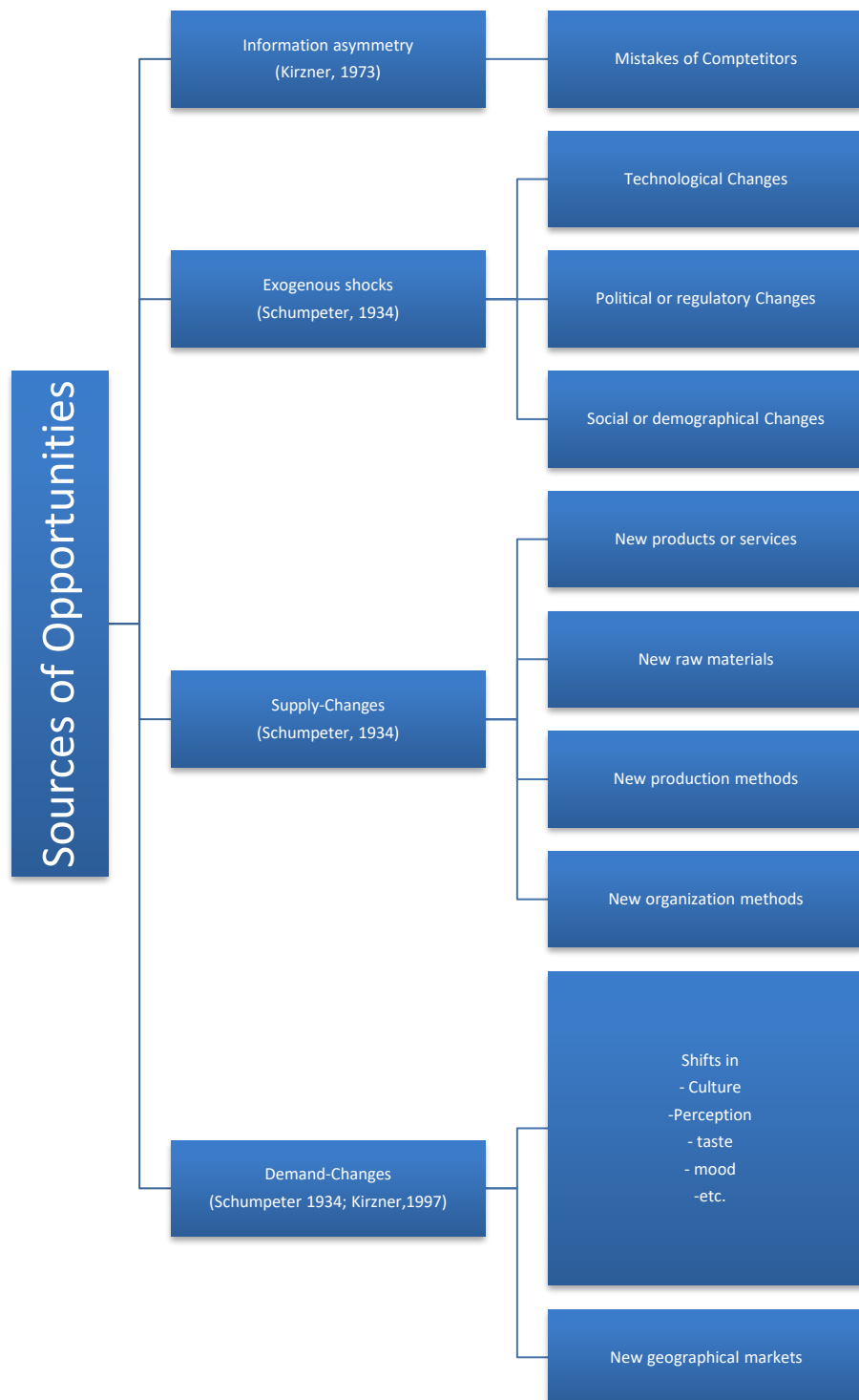


Figure 3: Own adaption based on (Fust, et al., 2019, pp. 340-344)

5.2.2.1 Information asymmetry vs. exogenous shocks

According to (Eckhardt & Shane, 2003, p. 341) Kirzner and Schumpeter were at odds for their views on whether exogenous information shocks are the primary trigger for entrepreneurship. Schumpeter argues that episodes of market efficiency are punctuated by episodes of upheaval. Changes in technology, politics, demographics, and other factors create new information about how resources could be used in other ways. Kirzner on the contrary argues that opportunities exist regardless of this new information. (Eckhardt & Shane, 2003, pp. 341-343)

5.2.2.2 Supply vs. demand-side changes

Opportunities may also be categorized according to whether the shifts they are generating are on the demand side or the supply side. Generally, the entrepreneurship literature concentrates on changes on the supply side. Thus, most discussions of opportunities refer to changes in inputs, organizational types, production processes, or products. (Schumpeter, 1934) However, changes in demand can also generate opportunities. The preferences of customers affect the allocation of resources because producers must respond to consumers' preferences and buying habits. As a result, changes in demand due to exogenous shifts in culture, perception, taste, or mood can create opportunities. According to Drucker when the increase in demand exceeds the investment in production capacity, opportunities arise, creating the possibility of adding more capacity. (Eckhardt & Shane, 2003, pp. 343-344)

5.2.3 Initiator of Change

The last dimension in which opportunities have been ranked is the player that initiates the change. There are several types of actors which initiate the changes that lead to entrepreneurial opportunities. Researchers identified different kinds of actors, such as non-commercial entities, existing commercial entities, and new commercial entities. (Klevorick in (Eckhardt & Shane, 2003, pp. 344-345))

6 Resources

Entrepreneurs must bundle and deploy the available resources in such a way that the opportunity can be exploited in the market and implemented in an appropriate organizational form (Fust, et al., 2019, pp. 30-31). According to Wickham, three types of resources exist – financial resources, human resources, and operating resources. (Wickham, 2006, p. 255)

6.1 Financial Resources

Various financial resources can be exploited by an entrepreneur to start a business. In the following, typical methods for financing a new business are defined.

Bootstrapping or self-funding

To “bootstrap” the new venture, the entrepreneur finances the new venture through personal savings and with the money from the first sales. With Bootstrapping the entrepreneur can maintain control over the business and all decisions. (Kenton, 2020)

Loans

A loan is a form of indebtedness of an individual or legal entity. While the lender – usually a company, financial institution, or government – provides the borrower with a certain amount of money, the borrower agrees to certain terms, including finance charges, interest rates, repayment date, and other terms. (Kagan, 2021)

Venture capital

“Venture capital (VC) is a form of private equity and a type of financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential. Venture capital typically comes from wealthy investors, investment banks, and other financial institutions.” (Hayes, 2021)

Angel investors

Angel investors are typically professionals who have amassed a fortune and are willing to share their wealth in exchange for some type of equity. Often angel investing is the primary source of funding for startups, who find it more to their liking than other, more predatory types of funding. (Ganti, 2020)

Grants

“Government funding refers to financial assistance received by nongovernment entities in the form of federal, state, or local government grants, loans, loan guarantees, property, cooperative agreements, food commodities, direct appropriations, or other assistance.” (Law, n.d.)

6.2 Operating Resources

Below, several categories of operating resources are defined by (Wickham, 2006, pp. 258-259).

Premises

With this term, buildings, where the business operates from, are defined. These can be offices, shops, and production facilities through which services are provided.

Motor vehicles

These are vehicles used by the organization to conduct business, such as sales representative’s cars and vans used to transport goods, deliver goods, and provide services.

Production machinery

To manufacture the goods which are sold by the business, production machinery is necessary.

Raw materials

Raw materials are resources that are transformed during the manufacturing process into products or goods sold by the company.

Storage facilities

Storage facilities are places, including the necessary equipment like shelves and racks, where finished products can be stored until they are sold.

Office equipment

Objects used for business administration, such as furniture, word processors, information processing, and communication equipment.

(Wickham, 2006, p. 258)

6.3 Human Resources

Wickham argues that, since financial and operational resources are not unique, the most important element of a successful company is its people. The people involved in the project offer their labor for it. Human resources as defined by (Wickham, 2006, pp. 259-260) are:

- *productive labor – a direct contribution towards generating the outputs of the business, its physical products, or the service it offers.*
- *technical expertise – a contribution of knowledge specific to the product or service offered by the business. This may be in support of existing products or associated with the development of new ones.*
- *provision of business services – a contribution of expertise in general business services, for example in legal affairs or accounting.*
- *functional organizational skills – the provision of decision-making insights and organizing skills in functional areas such as production, operations planning, marketing research, and sales management.*
- *communication skills – offering skills in communicating with, and gaining the commitment of, external organizations and individuals. This includes marketing and sales directed towards customers and financial management directed towards investors.*

- *strategic and leadership skills – the contribution of insight and direction for the business. This involves generating a vision for the business, converting this into an effective strategy and plan for action, communicating this to the organization, and then leading the business in pursuit of the vision.*

(Wickham, 2006, p. 259)

7 Organization

There are many forms that organizations can take, depending on a variety of factors, such as “their size, their rate of growth, the industry they operate in, the type of product or service they deliver, the age of the organization, and the culture that it adopts.” (Wickham, 2006, p. 224)

Several organizational options are available for exploiting entrepreneurial opportunities. Although media attention is focused on independent start-ups, corporate spin-offs, franchises, joint ventures, and corporate acquisitions also enable business ideas to be perceived. Entrepreneurship can take place in different environments and there are different ways to become an entrepreneur (Fust, et al., 2019, pp. 31-32).

8 Environment

According to Gnyawali and Fogel the entrepreneurial environment is a set of factors that play a part in developing entrepreneurship. At first, it refers to the general economic, sociocultural, and political factors that influence people's willingness and ability to engage in entrepreneurial activities. Secondly, it refers to the availability of assistance and support services that ease the process. (Gnyawali & Fogel, 1994, p. 44) The PESTLE-Analysis (figure 4) is a tool to determine the environment, especially for a new business. Hereby, the political, economic, social, technological, legal, and environmental environments are evaluated.

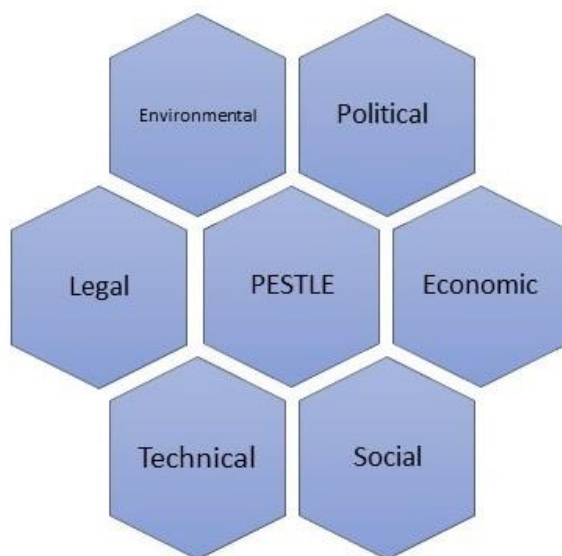


Figure 4: Own adaptation

Political

The scope of the political environment consists of the state, the government and its establishments and legislations, and the players, both public and private, who work and interact with or influence the system. Taking into account that the political environment is the foundation of the business environment in a country, the political atmosphere should be stable and positive. (MBA Skool, 2020)

Economic

Economic factors are the economic situation of a country and other information that a company needs to know about its sales market.

Through the indicators GDP, income per capita, population growth, and unemployment rate, the company can make assumptions about the expected consumption of a country. Additionally, exchange rates and interest rates are decisive for the profitability of the company. (studyflix, n.d.)

Social

Every country has its own social and cultural characteristics. Values, attitudes, religion, language, education, and buyer behavior shape people's lifestyles. As a result, it influences the preferences and desires of consumers, employees, and suppliers. (studyflix, n.d.)

Technological

Technological developments are important for a company's decision, as they can influence both business processes and business models. It is a force that creates, new products and market opportunities. The technological environment is for instance determined by developments relevant to the product, manufacturing, and distribution and its application such as new materials, process performance, component performance, longer service life, technical standards or standardization, substitute products with special features and benefits, or new business models made possible by technology. (Fleig, 2021)

Legal

The legal environment refers to laws, regulations, or standards that regulate or prohibit the manufacture, sale, and use of a product, such as labeling requirements, approval requirements, product safety, and product liability regulations, or restrictions on performance characteristics. Legislations a company may have to consider for instance can be Competition law, Environmental law, Antitrust law, Tax law, or Labor law. (Fleig, 2021)

Environmental

Environmental factors are composed of the respective climatic conditions, topographical conditions, and the resource availability of a country, as they can influence consumer demand and the company's strategic decisions. The importance of these factors arises for example due to the increasing scarcity of materials, pollution, or findings on the hazardousness of products or materials for health. (studyflix, n.d.)

9 Research Method

As stated in the methodology, several methods were used to answer the research questions in this thesis. The next Chapters describe the methods that have been applied.

9.1 Secondary research

To answer the first and third research questions secondary research was used. "Secondary research means researching data that already exist in some form, having been collected for a different purpose, perhaps even by a different organization, and which might be useful in solving a current problem." (Anon., 2008)

9.2 Primary research

To answer the research question on the entrepreneurial process an interview was conducted. "Interviewing is a conversational practice where knowledge is produced through the interaction between an interviewer and an interviewee [...]" (Brinkmann, 2008) The interview was conducted as an in-person interview with one of the founders of the SWS-Medicare. According to Clark, the in-person interview is known as a face-to-face interview. There the interviewer can decide through which means (e.g., in person, by telephone, virtual, or web-conferencing) or formats (e.g. semi-structured or structured) the interview should take place. (Clark, 2008) "The semi-structured interview is a qualitative data collection strategy in which the researcher asks informants a series of predetermined but open-ended questions." (Ayres, 2008) There an interview guide is written in advance, in which the questions can be specific or just be a list of topics that should be covered. Moreover, the interviewer can follow the guide or move back and forth through the list. (Ayres, 2008)

The in-person interview with the SWS-Medicare GmbH was conducted as a semi-structured virtual interview over Microsoft Teams. For this, questions were prepared in advance.

- 1) *When and how did you decide to found the SWS-Medicare GmbH?*
- 2) *What was the reason for the launch of the company?*
- 3) *How big is your team?*
- 4) *How was the founding financed?*
- 5) *Did you have any support provided by the government?*
- 6) *What kind of operating resources was used?*
- 7) *Who are your customers?*
- 8) *What is your plan after the pandemic?*

Furthermore, as it was an in-person interview, it was possible to ask further questions if something was unclear. As the interviewee is not fluent in English the interview was conducted in German and afterward translated into English. After the interview, the inquired information was used to answer the entrepreneurial process of the SWS-Medicare.

10 Opportunities during the pandemic

As previously stated, several measures to stop the surge of the coronavirus were implemented and these measures led to the establishment of new companies and startups. Some entrepreneurs saw an opportunity during the crisis and took it to found their own business. Below are several examples of opportunities during the pandemic.

Social Joy

Social Joy is a virtual fitness membership. It was created by Martha Palacios, who offers Zumba classes online. Members get three weekly scheduled classes, on-demand classes, and 24-hour access. She created Social Joy so that everyone can get “access to a safe, inclusive and enjoyable exercise experience.” (Palacios, n.d.)

Grocery neighbor

“Grocery Neighbor is a Canadian grocery concept delivering extreme convenience via an 18-wheeler. Each truck stocks a variety of products and can be found via a mobile app that allows customers to track and flag the vehicles as well as to scan and pay for their items. It offers the convenience of grocery delivery without the hassle or waste, allowing customers to select their items and use their containers.” (Fischer, 2021)

Startup CPG

“Startup CPG is a volunteer organization of various experts and founders that provide knowledge, networking, and community to small brands. Startup CPG membership is free, and includes access to an ongoing Slack Channel as well as events where members can learn more about things like venture capital, product law, and marketing.” (Albrecht, 2020)

Nourish bud

Nourish bud delivers plant-based meals made from scratch to the customer. The customer can choose from different packages, where they can choose their desired calorie intake. Furthermore, the customers have the option to create their package, to receive a meal with their favorite ingredients. (Nourishbud, n.d.)

Sweet Henry's

Sweet Henry's is a chocolate company founded by 12-year old Henry Langer. On his website, he sells self-made chocolate from organic ingredients. (SweetHenry's, n.d.)

Moriarty's Gem Art

Moriarty's Gem Art is a family-owned business, which sells jewelry and gemstones. Considering that the business was not able to create revenue during the lockdown, the owners started to create live-streamed gems shows. There, customers can watch as Steve Moriarty talks about the products and his travels. Furthermore, prerecorded spots, where he cuts, facets, and polishes gems are visible. (SHRM, n.d.)

Cloth masks

Sewing cloth masks is an opportunity several players used. They were made by different entities, ranging from people owning a sewing machine and companies that sold cloth masks with their logo on them. Since these masks are reusable and customizable, there has been a huge acceptance of them. The difficulty hereby is, that cloth masks do not protect against the coronavirus. That's why some countries made the use of surgical masks or respiratory masks such as FFP2 masks mandatory. (BfArM, n.d.)

Kita to go

Kita to go is a virtual box sent via email to families with children, in which they get a guide to inspire families to engage in a wide variety of activities with their children. Furthermore, every day they receive a schedule with specific ideas for games and crafts. (Vodermayr, 2020)

Restaurants using takeaway

With the implementation of social distancing and the lockdown, restaurants had to get creative to make their food available for their customers. They reached this by offering takeaway meals from their menus.

AliudQ

AliudQ is an app-based solution to shorten queue lines in the leisure industry. It is used to “replace classing waiting in the future or to modify Q-lines, so that they become an entertaining and pleasant experience for [the] guests.” (AliudQ, n.d.)

Stream party

Users who want to watch movies or series on Netflix, Disney+, Youtube, or Amazon with friends and family all over the world, can use Streamparty. There they can watch the same movie while distancing and can communicate with each other about it with the chat function. (Streamparty, n.d.)

11 The Case Company

The SWS-Medicare GmbH (figure 5) was founded during the surge of the Covid-19 pandemic. The company was established within 3 months by the three young entrepreneurs Orhan Söhmelioglu, Sabahattin Incekalan, and Volkan Akoglu. In May 2020 they decided to develop and manufacture high-quality masks in Germany. For this, they applied for the funding program “Federal funding for production facilities for personal protective equipment and medical products for patient protection and related intermediate products” issued by the German government. The funding entails a 30 percent subsidy for the required machines and a guaranteed purchase of the masks until the end of 2021.



Figure 5: SWS-Medicare Logo

11.1 Products

Their production palette as shown in figure 6 consists of FFP2-masks and several types of surgical masks. Moreover, SWS-Medicare distributes Antigen-tests, mask-dispensers, and air purifiers through their website.



Figure 6: SWS-Medicare Products

11.1.1 FFP2 Mask

FFP (filtering facepieces) masks are particle-filtering half masks and are originally used as dust protection masks. In the medical field, FFP masks are normally used by medical staff as protection in the treatment of infected patients. FFP2 (figure 7) masks can capture more than 94% of the particles in the surrounding air. The mask contains a special filter layer (melt-blown nonwoven) which is electrostatically charged. Consequently, not only larger particles but also significantly smaller aerosol droplets from the inhaled and exhaled air can be filtered (Unterberger, 2021). In January Bavaria, Germany made the usage of FFP2 masks mandatory in public places. Even though the other federated states did not choose to implement the mandatory use of FFP2 masks, the usage of a mask is still mandatory. (BayMBI, 2021)



Figure 7: SWS-Medicare FFP2 mask

11.1.2 Surgical Mask

“A surgical mask (figure 8) is a loose-fitting, disposable device that creates a physical barrier between the mouth and nose of the wearer and potential contaminants in the immediate environment. “ (FDA, 2020). Surgical masks do not primarily protect the wearer himself, but rather reduce the risk of infecting others. Accordingly, if a person is infected with the coronavirus unnoticed, the mask can contain further spread via larger droplets when talking to each other.



Figure 8: SWS-Medicare surgical mask

12 The entrepreneurial process during the pandemic

The following chapters deal with the entrepreneurial process of the SWS-Medicare GmbH. Thereby, the opportunity, resources, and the environment are discussed in more detail. In order to analyze this, the insights from the interview are utilized.

12.1 Opportunity

With the start of the coronavirus pandemic, health organizations, such as the WHO (World Health Organization) or RKI (Robert Koch Institut) have recommended the usage of masks. The masks in combination with social distancing and increased hygiene should keep the level of infections low. Furthermore, countries made the use of masks mandatory, which increased the demand for Personal Protection Equipment. Furthermore, countries where masks were exported from imposed bans on the export of PPEs. The consequence of this was that the price for masks skyrocketed and not enough masks were in circulation to meet the surge in demand.

12.1.1 Existence of Opportunity

The opportunity was existent with the change in demand for masks. Considering the high differences in supply and demand, and known global shortages, it was an opportunity that was easy to discover by alert entrepreneurs.

12.1.2 Discovery of Opportunity

The entrepreneurs reached the point of discovery through factors that affected themselves. With the mask mandates and the supply shortages, it was not possible to buy masks, because they either were sold out, too expensive, or low-quality. Furthermore, they discovered the funding program “Federal funding for production facilities for personal protective equipment and medical products for patient protection and related intermediate products” provided by the German government.

12.1.3 Exploitation of Opportunity

The SWS-Medicare was established in a team. After discovering the opportunity, Incekalan contacted his social network to suggest the production of face masks. Söhmelioglu and Akoglu have accepted his proposal, thus founding the SWS-Medicare GmbH together.

12.2 Resources

This chapter deals with the resources used by the SWS-Medicare GmbH. Hereby, the financial, operating, and human resources are reviewed.

12.2.1 Financial Resources

SWS-Medicare used several methods to finance their business.

Bootstrapping

To set up the business three million euros were needed. The goal was reached by using Bootstrapping. They did this with their personal savings and exhaustion of their overdraft limit. After the first order, the received money was used to invest continuously in the company.

Loans

Additional to taking their own savings, the founders applied for a loan to further invest money to create a smoother environment.

Government Grant:

“Federal funding for production facilities for personal protective equipment and medical products for patient protection and related intermediate products.” With this grant, 30 % of the machines were funded.

12.2.2 Operating Resources

Premises

They searched for premises in Moosburg - the city they come from - to support the city. However, the building was flooded before they could start producing. As there was no other possibility, they chose to rent premises in Landshut Essenbach - a city 20 km away. In these premises, SWS-Medicare started to produce the much-needed masks.

Storage facilities

The storage facilities to store their finished products are located on the premises of the production. However, after one week of production, they rented another facility to combat the high demand.

Production machinery

The machinery needed to manufacture the masks are from Germany. SWS-Medicare wanted to work together with a company situated in Germany so that the supply chain was not dependent on other countries. Furthermore, machinery to test the produced masks in their internal laboratory was needed.

Raw materials

The main material for the production of masks is melt-blown non-woven. This material is also sourced from Germany, as the masks should have the seal of quality "Made in Germany." Furthermore, adjustable ear straps and malleable nose clips are used in the production of masks.

12.2.3 Human Resources

The company started its venture with 27 employees including themselves. To be able to operate the production machinery, the entrepreneurs received training from the supplier upon delivery. In the beginning, they tried producing masks with different materials to produce flawless masks even though they had to pay for not functioning trial products.

Once the machines were set up, the employee's task was to operate the machinery (e.g., replace the materials needed for the production, such as melt-blown non-woven or threads). Furthermore, their job was to check if the quality of the product was right and to package the masks for delivery.

12.3 Environment

Here, the environment for the SWS-Medicare GmbH is evaluated

Political

Political factors have a high influence on a company's management when deciding on a location or a sales market. Germany for instance provided incentives for the production of protective masks. With the program "Federal funding for production facilities for personal protective equipment and medical products for patient protection and related intermediate products," they wanted to strengthen Europe's independence (BMW, 2020). This funding created an optimal situation for new entrants.

Economical

Economic factors are the economic situation of a country and other information that a company needs to know about its sales market. The target economy for SWS-Medicare is Germany. In the last 50 years, the standard of living was continuously increasing, because of that the purchasing power of the population was also increasing. However, with the pandemic, the purchasing power of the population decreased by 0,6% (Acxiom, 2020) and the people do not want to spend their money. Nevertheless, this was not a problem for company's entering the PPE market to produce masks, as the use of them is mandated.

Social

A very important aspect for the population in Germany is the desired quality of the products they want to use. They pay a lot of attention to quality and those products are produced according to prescribed specifications and have the required certifications. Furthermore, Germans are compliant with the rules and follow the law and the governmental recommendations and regulations.

Technological

Both science and technology are advancements, Germany is known for. Germany is considered the 5th most technologically advanced nation, with expertise across multiple sectors such as engineering, medicine, and infrastructure. As previously stated, the SWS-Medicare acquired the production machinery from a supplier in Germany. Furthermore, the main supplier for melt-blown nonwoven is also situated in Germany. Both these sectors are in the process of innovating their products, with the funding of the government.

Legal

Before doing business, the company must know about the laws and legal systems in the country they are operating in. In Germany for instance, the code law prevails. Furthermore, contracts are legally binding and ensure mutual compliance with the contract points. In addition to that, product safety is very important to consider in Germany, as there are several laws to protect the consumer. Moreover, in the example of SWS-Medicare and their production of PPE, they had to consider the legislation for certification.

Environmental

The resource availability to produce masks in Germany is high, considering that the main material supplier is situated in Germany. The production and use of PPE have resulted in a surge in plastic pollution (Kajanan, et al., 2021).

13 Market overview

To give a Market overview first with the help of Porter's Five Forces the Market will be analyzed. Following that, a market outlook for the demand for masks will be given. Furthermore, an outlook for the company after the pandemic will be given.

13.1 Porter's Five Forces

"Porter's Five Forces as seen in figure 9 is a model that identifies and analyzes five competitive forces that shape every industry and helps determine an industry's weaknesses and strengths." (Scott, 2020)

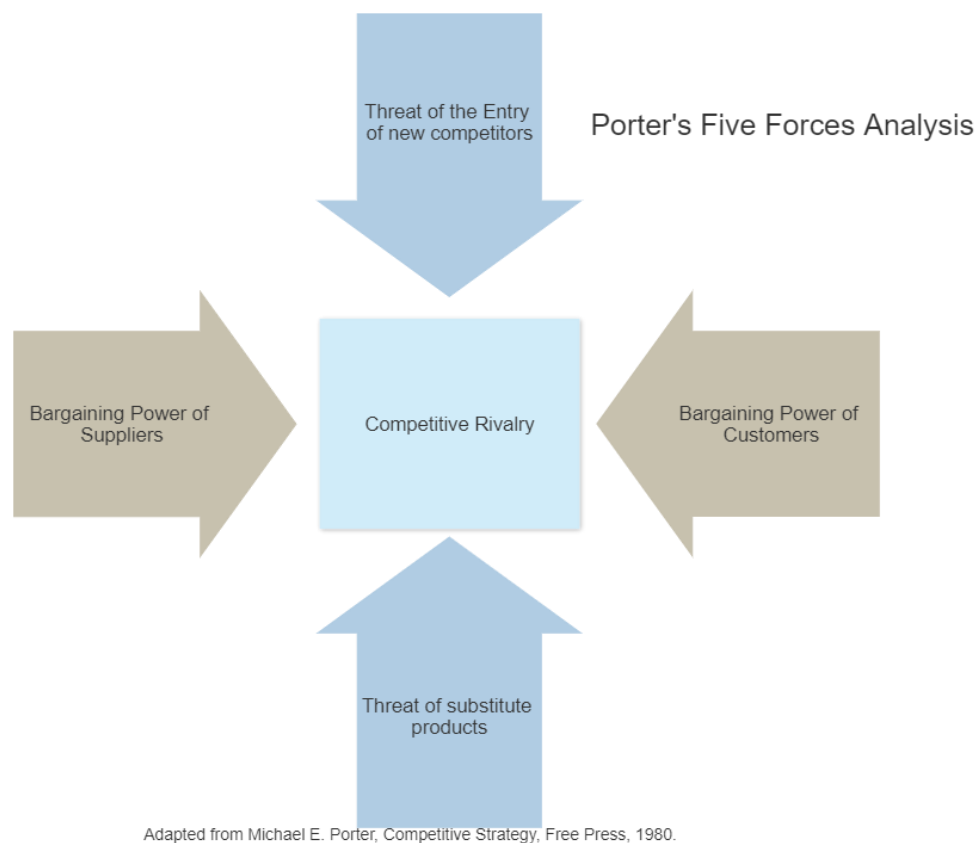


Figure 9: Porter's Five Forces

The threat of new entrants: High

The Personal Protection Equipment (PPE) industry is very big. There are a lot of small, medium, and big companies. Mask production is part of the PPE industry, so a lot of times companies are specialized in one product or one method of manufacturing. Especially for low-priced PPEs such as masks, the entry barriers are very low. Furthermore, big companies can remodel their production to include masks in their portfolio. Moreover, the production process of masks is easy to replicate. Therefore, the threat of new entrants is quite high.

Competitive rivalry: High

Big players all over the world, new local players. Everyone is doing the same. The quality standards are mostly the same.

There are several big players in the PPE industry, such as 3M, DuPont, or Dräger who also produce masks. Moreover, with the surge of demand for masks, multiple companies were founded in Germany, which also produces high-quality products. Considering that every company is manufacturing the same product, the competitive rivalry in this industry is high.

The threat of substitutes: Low

There are already existing alternatives for ffp2 or surgical masks, such as reusable cloth masks or new and innovative self-disinfecting masks. But these alternatives are not likely to substitute the existing products, considering the consumer must be careful to use them correctly. Furthermore, the government has issued a mandate where ffp2 masks are mandatory because these masks are the only ones protecting both the wearer and other ones with a filtering capacity of almost 100%. Therefore, it can be said that the threat of substitutes is low.

Bargaining Power of Buyers: High

A buyer has the opportunity to purchase products from different companies. By forcing down prices, demanding better quality or more, the customers can extract more value and by extension drive up the costs. The bargaining power of Buyers in the mask production industry is relatively high. The customers have several choices from where they can buy their masks. Even though SWS-Medicare has the seal of quality "Made in Germany", competitors with the same seal exist and the customers can drive the prices down.

Bargaining Power of Suppliers: Low

The needed raw materials for the mask production sector are melt-blown nonwoven, adjustable ear straps, and malleable nose clips. Suppliers here are producers in the nonwoven industry, producers of elastic threads, and the wire industry. In this field, there are lots of companies and neither the suppliers are dependent on mask producers nor the mask producers are very dependent on their suppliers.

Undoubtedly, it is always good to have a good supplier relationship and some profiles also need to be customized, but in total, they are both not dependent on each other. Therefore, it can be said that suppliers have low power.

13.2 Market outlook for mask demand

The International Finance Corporation conducted a study on PPE demand and supply perspectives, to “provide a clear view of current market dynamics in global PPE supply and demand” and “estimate [the] global demand for PPE during 2021 to 2025 [...]” (IFC, 2021, p. 4) The study was realized with over 30 interviews from international experts, 50 international reports, databases and articles and proprietary models (IFC, 2021, p. 6).

13.2.1 Global production

Figure 10 shows the global production of medical masks during Covid-19 in contrast to the global production before Covid-19. It can be seen that medical mask manufacturing rocketed by as much as 1,200%, as Covid-19 led to a surge in global PPE production.

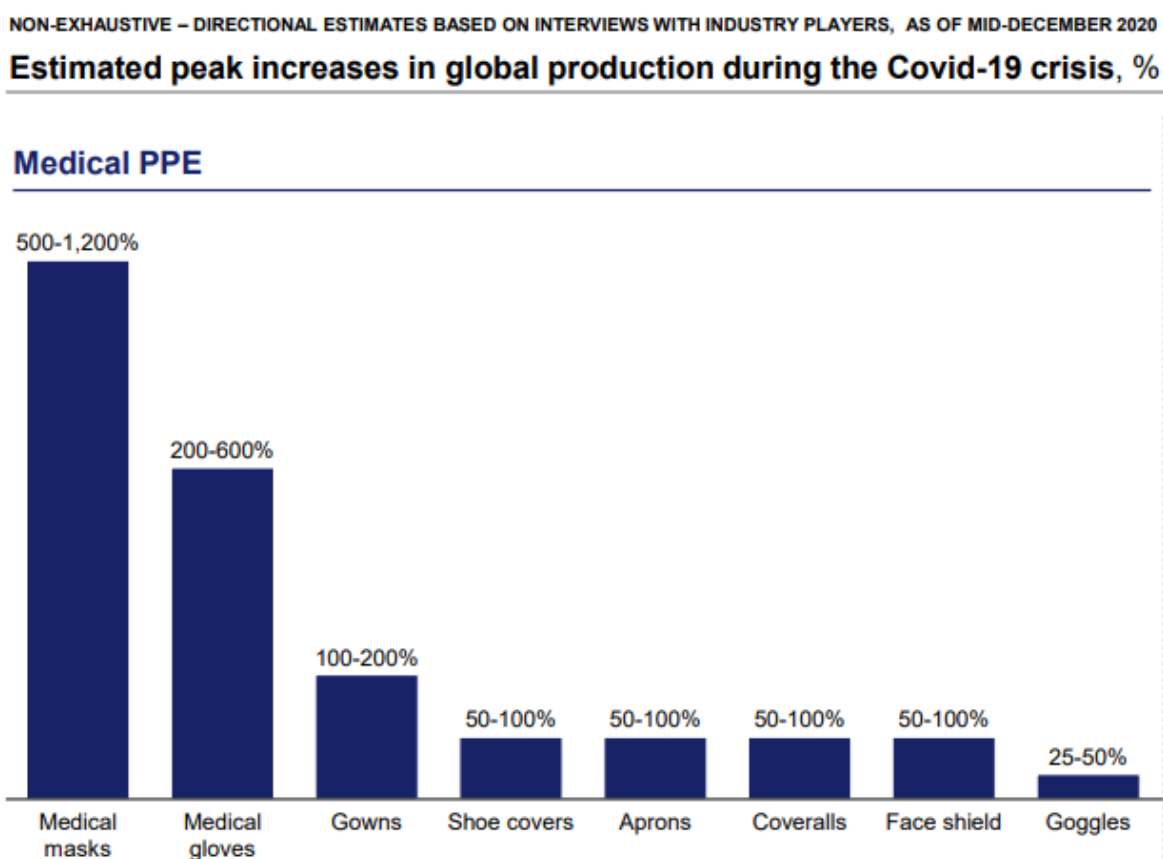


Figure 10: Estimated Global Production (IFC, 2021, p. 27)

Furthermore, in figure 11 it can be observed that 50-60% of the supply increase was fueled by the expansion of production capacities of existing global players. However, 40-50% stemmed as a result of partially relocated production by related industrial manufacturers (e.g. textiles) and completely new but smaller local players. (IFC, 2021, p. 28)

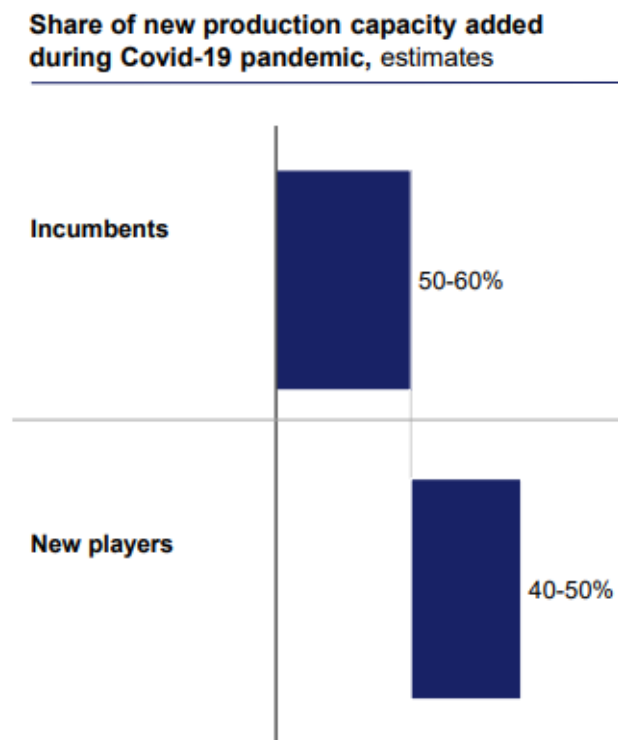


Figure 11: Shared production capacity (IFC, 2021, p. 28)

13.2.2 Scenarios

The International Finance corporation presents three scenarios, to evaluate the global PPE demand. (IFC, 2021, p. 71)

Scenario 0

Scenario 0 assumes that with the rollout of vaccination campaigns and the desired herd immunity, the mask adoption will decrease. Furthermore, they suppose that the demand will return to pre-crisis adoption levels in the “new normal” phase.

Scenario 1

As a result of official guidelines wearing masks in public places is required, partly as a result of uncertainty regarding incidence and transmission of variants. Furthermore, while vaccinating the remaining at-risk populations, governments are slowly lifting regulations on wearing masks in public spaces. Additionally, as the vaccination progresses the mask adoption declines, reaching a “new normal” close to the pre-covid adoption rate.

Scenario 2

In this scenario wearing masks in public places is required by official guidelines until herd immunity is achieved. However, the long-term adoption rate of masks remains at a higher level than pre-covid, due to e.g., personal references.

13.2.3 Total estimated demand

The total estimated PPE demand by category until 2025 is shown in figure 12. This adaptation of the total estimated surgical mask demand is taken from the IFC study and can be examined more closely in Appendix 1.

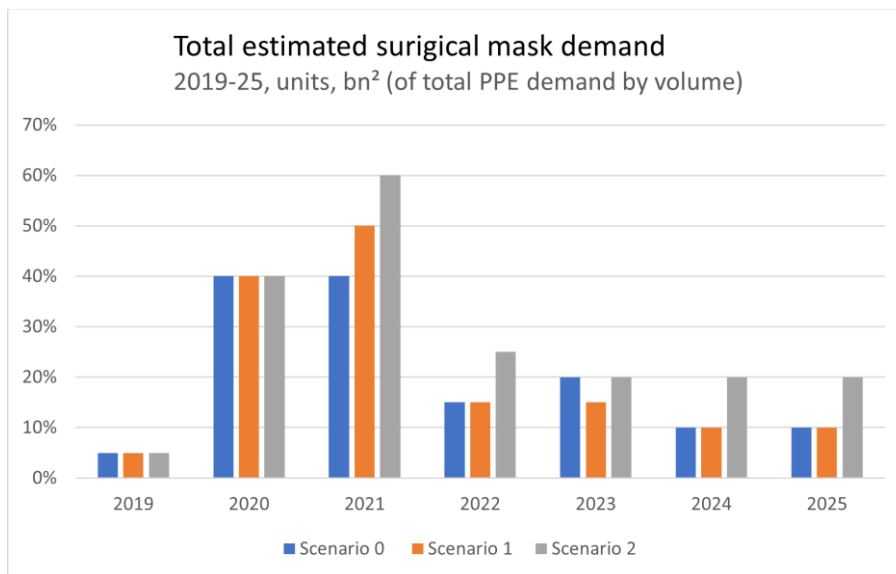


Figure 12: Adaptation of total estimated demand from (IFC, 2021, p. 75)

Scenario 0

Masks will fuel the demand surge in 2021, accounting for 40% of the total demand for PPE in 2021 (vs. less than 5% in 2019). However, by 2025 the surgical mask demand is expected to decline severely, dropping to ~10% of total PPE demand. (IFC, 2021, p. 75)

Scenario 1

Masks are accounting for 50% of the total demand in PPE in 2021. As seen in fig. 10 the surgical masks exhibit the same trend of declination as in scenario 0, resulting in a sharp drop by 2025 to ~10%. (IFC, 2021, p. 75)

Scenario 2

Masks are accounting for 60% of the total demand in PPE in 2021. In contrast to scenarios 0 and 1, the surgical mask demand is expected to drop to ~20% in 2025. (IFC, 2021, p. 75)

13.2.4 Forecast

According to the International Finance Corporation, the higher demand for masks is a consequence of higher adoption rates among non-healthcare consumers. They argue that after a certain amount of immunity against the coronavirus is reached, the mask demand will fall back to normal. However, the IFC still sees an opportunity for smaller players to stay relevant, “provided they can meet quality standards and stay relatively cost-competitive.” (IFC, 2021, p. 19) Consequently to stay relevant, the smaller players have to invest in manufacturing, investigate and ensure opportunities in areas where they are most cost-competitive (e.g. domestic markets), diversification of the products and innovation of new products. (IFC, 2021, p. 20)

13.3 Outlook for the company after the pandemic

The SWS-Medicare GmbH has a contract with the German government until the end of 2021, where they must deliver 14 million masks every month. Furthermore, they supply physicians and private consumers. Nevertheless, after that contract ends the company still wants to exist and produce masks. Therefore, I will present four growth strategies with which they could maintain their sales figures in the future. Furthermore,

13.3.1 Ansoff Matrix

The Ansoff Matrix as illustrated in figure 13 distinguishes between existing and new products and between existing and new markets. This results in four growth strategies.

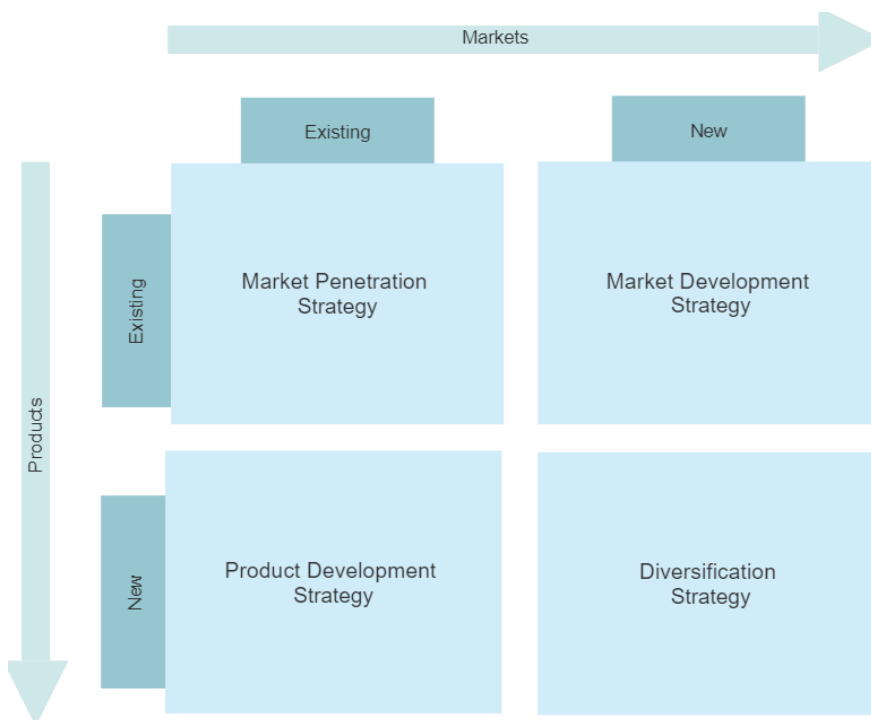


Figure 13: Ansoff - Matrix adapted from Kotler.

Market Penetration Strategy

With this strategy, the company aims to increase the sales of existing products in an existing market, for instance, masks in Germany. To increase sales, SWS-Medicare can increase the promotion of its products. Furthermore, they can offer the products at a lower price than their competitors or they can offer some discounts for new customers to convince them to buy rather at SWS-Medicare.

Ideally, these actions will lead to a surge of new customers and growth of the market share. This strategy's benefit is that it can be developed with just small efforts and low costs.

Product Development Strategy

The product development strategy involves a company implementing a new product to the already existing market. Product development can be accomplished by either expanding the product range with additional products or by product substitution, in which new, modified products replace the old products. SWS – Medicare could, for instance, produce masks that are more comfortable for eyeglass wearers. Furthermore, they have the option to produce FFP2 masks for children, which are colorful and smaller than the normal ones. Currently, the company does not produce products, that cater to specific consumer needs. Considering the number of people wearing glasses, this approach would be a useful product to start manufacturing and to offer to exist customers. Using this strategy, the company reacts to the existing needs of the market with a new product. However, the high development costs for new products increase the risk of this growth strategy and must be carefully thought through.

Market Development Strategy

Alternatively, instead of developing new products for an existing market, it is also possible to use existing products to tap into new markets. SWS-Medicare, for instance, could consider supplying corporations with masks, considering the legislation that the employers must provide masks to their employees. Until now the company just supplies the government with 14 million masks per month. Furthermore, they deliver masks to physicians' offices and private customers. When entering the market, they would not have to develop a new product. However, they would need to invest in marketing to make their products more appealing to potential customers.

Diversification Strategy

By adopting the diversification strategy, the company wants to develop a new product, which is placed in a new market. To take one example, SWS-Medicare could offer individualized masks for companies. Through this offer, companies could place specific masks with their logos on them, which they can provide their employees with. Both – the product and the market are new.

The effort to implement this strategy is very high, it is not only necessary to invest in product development but also the development of a new market. Nevertheless, diversification is often a good strategy for companies, as the chances for high growth rates are very good.

13.3.2 Outcome

As an outcome of the analyzed information and developed strategies, the company can exist after the pandemic if they continuously develop their products, invest into new manufacturing methods, and try to enter new markets. The company is already on its way to change their production process since according to Incekalan they already invested 1.000.000 € into its automatization. Furthermore, they liked the result of the diversification strategy. However, to make that happen they have to get that certified.

14 Critical Review

All in all, I consider the bachelor's thesis a success. However, there have been changes in how to approach the research question, consequently, I had to change my table of contents several times. Moreover, because of that, the literature research took longer than anticipated. However, after finalizing the research literature I had to decide what approach to include in the thesis since different approaches from different experts in the field of entrepreneurship exist.

Furthermore, to give the case company an outlook for the future, studies were needed. I searched for studies in which the demand for a mask in the future would be forecasted. Several governmental authorities in Germany were contacted. However, since the pandemic is a current issue, no studies were conducted. Finally, after further intensive research, I found a study that was conducted by the International Finance Corporation just recently. Therefore, it can be said that the outlook on the market is not reliable enough.

15 Reflection

My goal in this thesis was to explore the opportunities during the pandemic and to learn about the entrepreneurial process. Both of these goals were achieved successfully. To achieve that, I was in contact with the company throughout the whole duration of the project. It was very interesting to have the theory that was studied before applied to a company that was established during the pandemic. While working on the thesis, my interest in this topic has increased, especially the opportunity discovery.

Reference List

- Acxiom, D., 2020. *marketing-boerse*. [Online]
Available at: <https://www.marketing-boerse.de/news/details/2047-kaufkraft-in-deutschland-2020-corona-krise-praegt-die-entwicklung/172865#:~:text=Kaufkraft%20in%20Deutschland%3A%20Entwicklung%20im%20Jahresverlauf&text=2.008%20Mrd.,das%2024.252%20Euro%20je%20Einwohner.&t>
[Accessed 21 04 2021].
- Albrecht, C., 2020. *The Spoon*. [Online]
Available at: <https://thespoon.tech/startup-cpgs-free-databases-help-emerging-brands-with-3pl-logistics-and-donations/>
[Accessed 22 04 2021].
- AliudQ, n.d. *AliudQ*. [Online]
Available at: <https://en.aliudq.de/#>
[Accessed 24 04 2021].
- Altili, E., 2019. *Data Driven Investor*. [Online]
Available at: <https://medium.datadriveninvestor.com/types-of-businesses-who-is-an-entrepreneur-and-principles-of-entrepreneurship-a7204b73323d>
[Accessed 09 04 2021].
- Alvarez, S. A., Barney, J. & Young, S. L., 2010. Debates in Entrepreneurship: Opportunity Formation and Implications for the Field of Entrepreneurship. In: D. Audretsch, ed. *Handbook of Entrepreneurship Research*. New York, NY: Springer.
- Alvarez, S. & Barney, J., 2007. *Toward a Creation Theory of Entrepreneurship*. [Online]
Available at:
https://www.researchgate.net/publication/228585346_Toward_a_Creation_Theory_of_Entrepreneurship
[Accessed 16 04 2021].
- Anon., 2008. Secondary Research. In: *Encyclopeida of Public Health*. s.l.:Springer, Dordrecht.
- Ardichvili, A. A., Cardozo, R. N. & Ray, S., 2003. A theory of entrepreneurial identification and development. *Journal of Business Venturing*, pp. 105-123.
- Ayres, L., 2008. Semi-Structured Interview. In: I. SAGE Publications, ed. *The SAGE Encyclopedia of Qualitative Research Methods*. Thousand Oaks: s.n., pp. 811-812.
- BayMBI, 2021. *Bayern.Recht*. [Online]
Available at: <https://www.verkuendung-bayern.de/baymbi/2021-35/#:~:text=Die%20vorliegende%20Verordnung%20hat%20eine,%2D%20und%20Dienstleistungsbetrieben%2C%20zum%20Gegenstand.>
[Accessed 24 04 2021].
- BfArM, n.d. *Bundesinstitut für Arzneimittel und Medizinprodukte*. [Online]
Available at:
<https://www.bfarm.de/SharedDocs/Risikoinformationen/Medizinprodukte/DE/schutzmas>

ken.html

[Accessed 23 04 2021].

BMW, 2020. *Federal Ministry for Economic Affairs and Energy*. [Online]

[Accessed 21 04 2021].

Boutillier, S. & Uzundis, D., 2016. *The Entrepreneur: The Economic Function of Free Enterprise*, s.l.: John Wiley & Sons.

Brinkmann, S., 2008. Interviewing. In: *The SAGE Encyclopedia of Qualitative Research Methods*,. Thousand Oaks: SAGE Publications, Inc, pp. 471-472.

Bygrave, W. D. & Zacharakis, A., 2010. *The portable MBA in entrepreneurship*. 4. ed. Hoboken, New Jersey: John Wiley & Sons, Inc..

Churchill, 1992. s.l.:s.n.

Clark, V., 2008. In-Person Interview. In: I. SAGE Publications, ed. *The SAGE Encyclopedia of Qualitative Research Methods*. Thousand Oaks: s.n., p. 433.

Eckhardt, J. T. & Shane, S., 2003. Opportunities and Entrepreneurship. *Journal of Management*, pp. 333-349.

FDA, 2020. *FDA*. [Online]

Available at: <https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-surgical-masks-and-face-masks>

[Accessed 08 04 2021].

Fischer, A., 2021. *McMillan Doolittle*. [Online]

Available at: <https://www.mcmillandoolittle.com/announcing-the-release-of-retail-innovations-2021/>

[Accessed 22 04 2021].

Fleig, D. J., 2021. *business-wissen*. [Online]

Available at: <https://www.business-wissen.de/hb/die-pestel-methode-in-der-uebersicht-mit-aufbau-und-anwendung/>

[Accessed 22 04 2021].

Fust, A. et al., 2019. Grundlagen . In: *Entrepreneurship* . Wiesbaden : Springer Gabler, pp. 1-37.

Ganti, A., 2020. *Investopedia*. [Online]

Available at: <https://www.investopedia.com/terms/a/angelinvestor.asp>

[Accessed 23 04 2021].

Gnyawali, D. R. & Fogel, D. S., 1994. Environments for entrepreneurship development: key dimensions and research implications. In: *Entrepreneurship theory and practice*. s.l.:s.n., pp. 43-62.

Hayes, A., 2021. *Investopedia*. [Online]

Available at:

[https://www.investopedia.com/terms/v/venturecapital.asp#:~:text=Venture%20capital%20\(VC\)%20is%20a,and%20any%20other%20financial%20institutions.](https://www.investopedia.com/terms/v/venturecapital.asp#:~:text=Venture%20capital%20(VC)%20is%20a,and%20any%20other%20financial%20institutions.)

[Accessed 23 04 2021].

IFC, 2021. *International Finance Corporation*. [Online]
 Available at: https://www.ifc.org/wps/wcm/connect/1d32e536-76cc-4023-9430-1333d6b92cc6/210402_FCDO_GlobalPPE_Final+report_v14updated_gja.pdf?MOD=AJPERES&CVID=nyiUnTU
 [Accessed 23 04 2021].

Kagan, J., 2021. *Investopedia*. [Online]
 Available at: <https://www.investopedia.com/terms/l/loan.asp>
 [Accessed 23 04 2021].

Kajanan, S., Satheeskumar, N., Pathmanathan, R. & Nishanthan, R., 2021. *ScienceDirect*. [Online]
 Available at: <https://www.sciencedirect.com/science/article/pii/S2667010021000184>
 [Accessed 21 04 2021].

Kenton, W., 2020. *Investopedia*. [Online]
 Available at: <https://www.investopedia.com/terms/b/bootstrap.asp>
 [Accessed 23 04 2021].

Knight, F. H., 1921. *Risk, uncertainty and profit*, s.l.: Houghton Mifflin.

Kunene, T. R., 2009. *A critical analysis of entrepreneurial and business skill in SMEs in the textile and clothing industry in Johannesburg, South Africa*, s.l.: s.n.

Laverty, M. & Littel, C., 2020. *Entrepreneurship*. [Online]
 Available at: <https://openstax.org/details/books/entrepreneurship>
 [Accessed 18 04 2021].

Law, G. F., n.d.. *USLEGAL*. [Online]
 Available at: <https://definitions.uslegal.com/g/government-funding/#:~:text=Government%20funding%20refers%20to%20financial,direct%20appropriations%2C%20or%20other%20assistance.>
 [Accessed 23 04 2021].

Martin, M., 2019. *Business News Daily*. [Online]
 Available at: <https://www.businessnewsdaily.com/5446-porters-five-forces.html>
 [Accessed 23 04 2021].

MBA Skool, T., 2020. *MBA Skool-Study.Learn.Share..* [Online]
 Available at: <https://www.mbaskool.com/business-concepts/marketing-and-strategy-terms/2515-political-environment.html>
 [Accessed 23 04 2021].

Moore, C. F., 1986. *aom.org*. [Online]
 Available at: <https://journals.aom.org/doi/pdf/10.5465/ambpp.1986.4978712>
 [Accessed 10 04 2021].

Nourishbud, n.d.. *Nourish bud*. [Online]
 Available at: <https://www.nourishbud.co.uk/>
 [Accessed 22 04 2021].

OECD, 2004. *Fostering entrepreneurship and firm creation as a driver of growth in a global economy*. [Online]

Available at: <https://www.oecd.org/cfe/smes/31917899.pdf>

OECD, 2011. *Entrepreneurship at a Glance 2011*. [Online]

Available at: <http://dx.doi.org/10.1787/9789264097711-en>

Overview, D. E. i. B. D. &., 2016. *Study.com*. [Online]

Available at: <https://study.com/academy/lesson/domestic-environment-in-business-definition-lesson-quiz.html>

[Accessed 23 04 2021].

Palacios, M., n.d.. *Social joy*. [Online]

Available at: <https://socialjoy.marthapalacios.com/membership>

[Accessed 22 04 2021].

Picard, F., 2013. Entrepreneurial Opportunity. In: *Carayannis E. G. (eds) Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. s.l.:Springer, New York, NY.

Say, J.-B., 1861. *Traité d'économie politique*, s.l.: Calmann-Lévy.

Schumpeter, J. A., 1934. *The Theory of Economic Development*. s.l.:s.n.

Scott, G., 2020. *Investopedia*. [Online]

Available at: <https://www.investopedia.com/terms/p/porter.asp>

[Accessed 26 04 2021].

Shane, S. & Eckhardt, J., 2003. *The individual-opportunity Nexus*. Boston: Springer.

Shane, S. & Venkataraman, S., 2000. *The Promise of Entrepreneurship as Field of Research*, s.l.: Academy of Management.

SHRM, n.d.. *SHRM*. [Online]

Available at: <https://www.shrm.org/hr-today/news/all-things-work/pages/small-businesses-get-creative-to-survive-during-the-pandemic.aspx>

[Accessed 22 04 2021].

Simons, H., 2009. *Case Study Research in Practice*, s.l.: Sage Publications.

Simons, H., 2009. *Case Study Research in Practice*, s.l.: SAGE Publications.

Streamparty, n.d. *Streamparty*. [Online]

Available at: <https://www.streamparty.com/what-is-streamparty>

[Accessed 24 04 2021].

studyflix, n.d.. *studyflix*. [Online]

Available at: <https://studyflix.de/wirtschaft/pestel-analyse-1715>

[Accessed 22 04 2021].

SweetHenry's, n.d.. *Sweet Henry's*. [Online]

Available at: <https://getsweethenrys.com/>

[Accessed 22 04 2021].

Timmons, J. A. & Spinelli Jr, S., 2009. *New Venture Creation - Entrepreneurship for the 21st Century*. 8 ed. New York: McGraw-Hill/Irwin.

Torikka, J., n.d.. *Exploring Various Entrepreneurial Processes of the Franchisee Training Program Graduates: Empirical Evidence form a Longitudinal Study*, Jyväskylä: s.n.

trends, G., 2021. *International Finance Corporation*. [Online]
Available at: ifc.org
[Accessed 23 04 2021].

Unterberger, T., 2021. *Netdokter*. [Online]
Available at: <https://www.netdokter.at/coronavirus/ffp2-schutzmaske-corona-10612478>
[Accessed 20 04 2021].

van der Zwan, .., Thurik, R., Verheul, I. & Hessels, J., 2016. *www.link.springer.com*.
[Online]
Available at: <https://doi.org/10.1007/s40821-016-0065-1>
[Accessed 09 04 2020].

Vodermayr, A., 2020. *Exklusiv München*. [Online]
Available at: <https://www.exklusiv-muenchen.de/corona/muenchner-start-up-lanciert-kita-to-go-52798>
[Accessed 22 04 2021].

WHO, n.d.. *World Health Organization*. [Online]
Available at: https://www.who.int/health-topics/coronavirus#tab=tab_1
[Accessed 22 04 2021].

WHO, n.d.. *World Health Organization*. [Online]
Available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline/#!>
[Accessed 22 04 2021].

Wickham, P. A., 2006. *Strategic Entrepreneurship*. s.l.:Pearson Education .

Appendix 1: Total estimated PPE demand by category

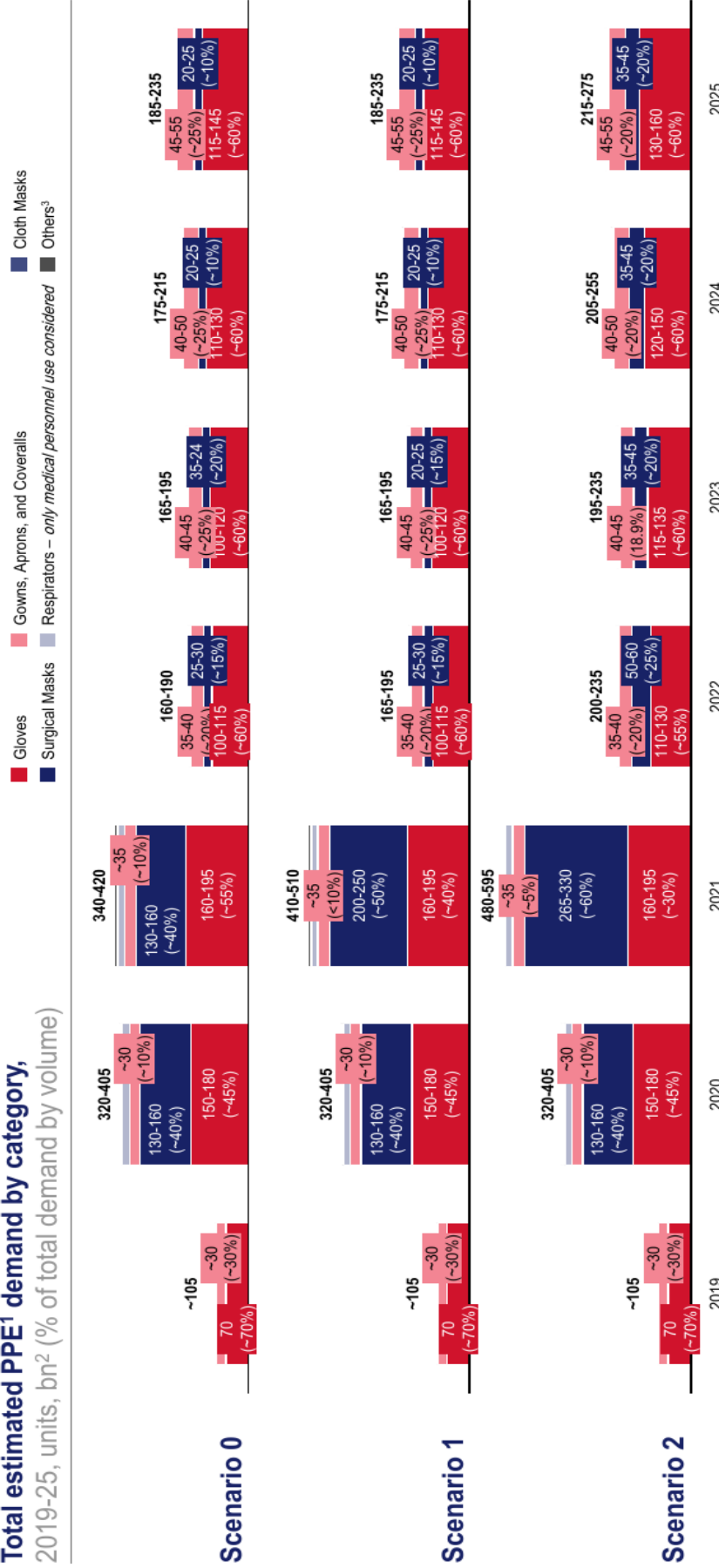
INTENDED TO PROVIDE INSIGHT BASED ON CURRENTLY AVAILABLE INFORMATION FOR CONSIDERATION AND NOT SPECIFIC ADVICE

With revised adoption rates, mask demand could peak in 2021 at 250-330bn, instead of at 160bn as in the December model

SEE APPENDIX FOR DECEMBER 2020 PROJECTIONS

ESTIMATES – NEW ADOPTION RATES AS OF MARCH 2021

Total estimated PPE¹ demand by category, 2019-25, units, bn² (% of total demand by volume)



1. Range reflects 2 scenarios ("high" vs. "low"); (i) non-Covid-19 baseline demand based on 2 growth scenarios (historic growth -2% to account for critical size of the market vs. historic growth +1% to account for potential changes in usage habits), (ii) hospital days and vaccination demands depend on vaccination scenario ("pessimistic" vs. "optimistic"), and (iii) workers in non-healthcare settings and consumer demand depend on adoption rate assumptions ("high" vs. "low")
 2. Unit is per item or per pair in case of gloves, hand sanitizer is per litre and chlorine is per kg ; bn = billion
 3. Eye protection (face shields and goggles), shoe cover, and disinfectant products/biological waste management (i.e., hand sanitizer, chlorine, body bags and clinical waste bags)

Source: Mordor Intelligence (updated in November 2020), EPI model, WHO assumptions

Appendix 2: Interview

1) When and how did you decide to found the SWS-Medicare GmbH?

In May 2020 we decided to found the SWS-Medicare. The idea to produce masks came to me while I watched the news and the global shortage of masks was known. In Addition to that I could see that the masks I wanted to buy were too expensive or had low-quality. After some research I contacted my friends and after several discussions we decided to launch the company

2) How big is your team and what are their tasks?

We started the SWS-Medicare with 24 employees and us three. Now we have over 200 employees. Their task is to operate the machinery, check the quality of the products and to package them for delivery.

3) Did you have special employees to operate the machinery in the beginning?

No, we received training from the supplier, and after that it was trial and error.

4) How was the founding financed?

First we financed everything ourselves, us three put together everything we had and we also exhausted the limits on our cards. After that we invested the money which we earned through our first orders into the company. To be able to further invest into the company we also applied for loans, which were granted.

5) Did you have any support provided by the government?

Yes, the german government issued a funding programme to help tackle the need of masks. We are contracted to deliever 14 million masks monthly to the german government.

6) What kind of operating resources was used?

We needed premises to produce the masks, which we found in our home town. But it was not able to use that building because it was flooded before we could start producing there. After that we found a building to produce in Landshut, just 20 km away from home. We store the finished products directly here, where the masks are produced. But after just one week, we had to rent another building to store the products.

7) What materials and machines do you use in the production of the masks.

The main material we use is melt-blown non-woven. To ensure the quality of Made in Germany we source from a German producer. We also need malleable nose clips and adjustable ear straps. And the machines to produce the products are also Made in Germany. We wanted to ensure that we are not dependent on other countries when producing our masks.

8) Who are your customers?

Until the end of 2021, we have to deliver masks to the German government. And we also sell to private consumers and physicians.