

## Mechanics and materials engineering Mechanika ir medžiagų inžinerija

### SHELF FOR SERVING LINES DEVELOPMENT AND LAUNCHING TO THE MARKET


Albertas VALIOKAS 

*Vilnius Gediminas Technical University, Vilnius, Lithuania*

- received 28 March 2023
- accepted 23 November 2023

**Abstract.** In today's market, there is a very intense competition, as well as the unpredictability of customer desires and market trends that change at a rapid speed, resulting in a shorter product life cycle. The purpose of this article is to examine the industry of commercial kitchens and the main aspects could be the key of successfully launching shelf for serving lines to the market. The empirical research background for this study is defined by the performed survey-questionnaire. The results of the survey of enterprises that specialize in manufacturing professional kitchen equipment, as well as the results of the survey of customers who are interested in such products, are presented in this article. The aim of both surveys was to determine which success aspects the company should rely on, and which are the most important for successful product development and market launch. Based on the result of the research and the information which was gathered, a model for the successful development and launch of a shelf for serving lines was developed and proposed. It is a hybrid type model which is based on the principles of Stage-Gate model, Decision process model which was suggested by Kotler and Keller and Agile set of values and principles. It has 7 stages and, stages have 6 gates where the project is assessed every time. This model is a recombinational tool of launching the product to the market which could help to identify the problematic issues within the ongoing process in the company.

**Keywords:** product, development, launching, professional kitchen equipment, commercial kitchen, shelf for serving lines, factors, aspects, market.

 Corresponding author. E-mail: [valiokasalbertas@gmail.com](mailto:valiokasalbertas@gmail.com)

## 1. Introduction

Nowadays there is a very high level of competition in the market, as well as the unpredictability of client wants, market trends are changing at a quick pace, resulting in a shorter product life cycle. Companies must be constantly aware of potential market dangers, various risks must be detected in advance, and companies must pay attention to market changes as well as consumer behavior and feedback in order to retain their product on the market if at all possible. New product development is the process of bringing an innovative product concept to market (Sutton, 2021). It's a time-consuming and expensive procedure, yet without it, no firm can succeed. The first stage is to gain a thorough knowledge of the users' wants and expectations, as well as to generate new ideas and ensure that the functional groups collaborate closely to meet the users' needs. Although product development differs per industry, it may be broken down into five or even thirteen processes. The fundamental phases of every product development model include ideation, research, planning, prototype, sourcing, pricing, and commercialization (Kotler & Keller, 2011).

As it was mentioned, companies strive to avoid product failure early in the development process in order to produce a new product or enhance an old one. Developing a profitable and innovative product includes the usage of widely utilized and commonly used new product development strategies. According to research conducted by Carbonell-Foulquié et al. (2004) five critical requirements for the development of a new product were identified:

- Strategic fit is mostly used in the approval of new product concepts. It is carried out in the early phases of the product development process as a strategic suitability indicator, assessing the project's fit for a target market.
- Technical feasibility dimension is critical in the approval of the new product concept and prototype. A product's technical capabilities and the availability of technology are frequently critical variables in the performance of a new product.
- Customer acceptance dimension is concerned with whether the product satisfies customer acceptance, customer satisfaction, and product quality objectives.

- Market opportunity dimension is largely used to approve new product concepts and keep products on the market.
- Financial performance is the most important in assessing the project's potential pay-out.

As product innovations are such an important component of every business, more attention should be devoted to their development. This is significant for businesses since it assists in increasing competitiveness and maintaining or expanding current positions in domestic and international marketplaces. Through constantly inspecting and recording already completed tasks, a model based on traditional product development processes may not only help assure higher product quality, but also lower the chance of mistakes or faults in the complicated and lengthy process of producing goods.

The purpose of this article is to explore the commercial kitchens industry and the factors that impact the success of launching a newly developed shelf for serving lines, as well as to provide a model with product launch proposals for this type of businesses.

## 2. Industry of customized equipment for professional kitchens

In 2020, the worldwide food service equipment market was estimated to be worth EUR 32.11 billion. From 2021 to 2028, it is predicted to increase at a compound annual growth rate of 5.5 percent. Some of the primary reasons driving the market include changing food consumption habits, growing demand for takeout, and the expanding hospitality industry. Besides, rigorous consumer safety requirements, increased digitization and the demand for sustainable and eco-friendly equipment are projected to generate significant development possibilities for the market in the near future (Grand View Research, 2021).

Due to the exponential expansion in the number of foodservice providers, such as quick-service restaurants and full-service restaurants, the need for commercial kitchen appliances has expanded dramatically over the years. Globally, the need for fast service restaurants is expanding. People are becoming increasingly used to fast food as a result of urbanization, which is increasing the need for quick-service restaurants. Quick-service restaurants rely heavily on commercial equipment, and it is expanding their operations because of the demand of quick services restaurants which still grows (Mordor Intelligence, 2021). In addition, Over the projection period, rail, cruise, and aircraft catering is predicted to grow at the fastest compound growth rate of 8.1 percent, due to the substantial increase in the tourist industry, which is likely to boost demand for commercial kitchen equipment for catering (Grand View Research, 2020).

The commercial kitchen appliances sector is one of the hardest-hit industries as a result of COVID-19. In order to prevent the spread of the coronavirus, which has resulted in the suspension of production facilities and the disruption of

the whole global supply chain, measures such as lockdown and transit bans were implemented. This has triggered a series of events, including a global economic slowdown. The hotel business provides a significant portion of the revenue for the commercial kitchen appliances market. The closure of a significant sector of the hospitality business, such as full-service restaurants, pubs and bars, and quick-service restaurants, has affected the selling of kitchen equipment significantly. Besides, as a result of the economic effect of COVID-19, most firms tend to fit into one of three types throughout the world at the moment. Specifically, those who may not be able to withstand the financial effects of the epidemic, those who are halting all expenditures in order to weather the pandemic crisis, and those who are either extremely busy or using this opportunity to go ahead with final product development (Mordor Intelligence, 2021).

It was developed a list of firms which make comparable sorts of items and operate in Europe in order to execute a targeted and effective examination of the evaluation of rivals shelves for serving lines. This tool is used for identifying the main differences between the shelves for serving lines from each manufacturer, allowing to assess the strengths and weaknesses of competitors in the later stages of the investigation while keeping the 5 critical requirements for developing a new product in mind. The review of shelves for serving lines from such companies Victor (The UK), IDEACER (Spain), Blanco (Germany), Scholl (Germany), Afinox (Italy), Diamond (Belgium) showed that some designs do not have a complete display design and, as a result, fail to fulfill customer expectations and market demands. Some manufacturers also provide extra alternatives when buying shelves for serving lines, such as heated consoles or two-story display shelves, however this is less common in the food industry, or at least it is not listed in manufacturers' catalogs. Also, it was noticed that there are two most common types of shelves' designs made only from stainless steel sheets or from sheets and pipes or tubes. All of it has protective tempered glass on the top, the designs in most of the case are similar from each manufacturer for both heated and neutral with LED lighting types of shelves. The main differences between different manufactures are the design of shelves for serving lines because some of it has much more minimalistic one than others even the concept and the idea is similar in most of the cases.

## 3. Research methodology

The aim of this research is to get better understanding of the main aspects of successfully launching to the market newly designed product by the companies which operates in manufacturing of professional kitchen equipment.

The research object is newly designed shelf for serving lines which is made from stainless steel to various professional kitchens of hotels, restaurants, cruises, medical care centers or any other food related organizations. There are mainly two types of shelves for serving lines: neutral (with LED lighting) or heated shelf with an option to adjust temperature.

The instrument which was used for this research was the questionnaire. It was prepared two questionnaires one for the companies that manufacture equipment from stainless steel to professional kitchens which will help to understand how other companies operate and the other one for customers which will help to figure it out the needs and habits of the respondents. The questionnaire was arranged based on closed-ended questions which inquiries provide all viable responses and participants must choose. It had also some open-ended questions which allow to answer in respondent's own terms or express its opinion (Kotler & Armstrong, 2018). Also, it included boxes of questions in a Likert Scale which is another popular approach to arrange answer options. On a response scale, each item is rated using a Likert scale. Participants, for example, are asked to rate each item in response to each question. You may pose several questions as statements on this scale, and participants can pick how strongly they agree or disagree with each statement (Colosi, 2006).

The target group of the questionnaire for the competitors is companies that manufacture equipment made from stainless steel for the professional kitchens. The survey is concentrated on the industrial companies of European Union countries, Organization for Economic Co-operation and Development members and the neighbors of Lithuania.

Moreover, various hotels, restaurants, cruises, medical care facilities, and other food-related organizations with professional kitchens built of stainless steel are the target group of the questionnaire for customers. The survey focuses on industrial enterprises in European Union nations, members of the Organization for Economic Co-operation and Development, and Lithuania's neighbors.

The whole questionnaire for competitors begins with some simple questions about age, size, location, the field that company operates and as it goes deeper it mostly covers internal and external factors that affect companies. Besides, it was integrated a six-segment block questions block which grading is based on the Licker scale. The purpose of the other block was to evaluate what is the most important for the companies of doing their business in the target market and what opportunities may exist based on their preferences. Furthermore, the questionnaire which was developed for the consumers started with questions about age, size, location and the field that company of customers specializes moves on to subjects from the 4P marketing mix model, which includes product, price, place, and promotion segments. The block of questions based on the Licker scale, which was integrated in the questionnaire, may help to determine if the company's working principles are sufficient or not, as well as providing a clear picture of what should be improved in the company's business strategy in order to reach customers.

The information was gathered using the Google Forms platform, and then it was processed and evaluated in Excel. The results and findings of this empirical investigation will be utilized to develop a new model.

The results of research is presented in the next section.

#### 4. Results of survey for competitors

The online survey for competitors was sent for the 138 companies via e-mail to the submitted e-mail on the website of each company. During the period of 2 weeks succeeded to collect answers of the survey from 10 respondents which is about 7% of all contacted companies. As the survey results showed the 30% of respondents was from Lithuania, 20% from the Italy and the rest of competitors has 10% that means one company from such countries like Poland, the UK, Belgium, France and Germany participated in the survey. Most competitors, which is about 60%, operate in this field of industry for more than 10 years. Other 2 companies have experience of manufacturing professional kitchen equipment from 6 to 10 years and the rest of repliers answered that they have experience of 1–5 years. Also, it is clearly noticeable that most of the answers were received from big industrial enterprises which has 250 and more people who works there. Moreover, the question about tendencies of selling production to local or foreign market showed that all the companies sell their products in the foreign market and 9 of 10 of respondents sell the equipment in a local market. All the businesses work of B2B principle, and 4 enterprises apply B2C principle of selling their production.

Also, the research showed 40% of respondents seldomly facing the problem of qualified employees, 3 companies sometimes have such an issue and couple of companies struggle quite often to find exactly what they need for they team and one of the enterprises have a big problem with a hiring well qualified employees. It means that lack of good and well-trained employees could be one of the reasons why the company do not grow very fast, but the survey also showed that limited financial resources and limited capabilities of manufacturing are the main problems of growing as an enterprise for 60% respondents in the questionnaire, 10% mentioned logistic issues limiting the growth of the company and only 1 participant mentioned the point of lack of knowledge about the market is the issue. All the companies revealed that customers always looking for the good quality products at first and just then goes with an issue of price 40% mentioned that and the equipment with latest technologies are very rarely important for customers from companies' point of view 20%. By the way, most of enterprises mentioned that sometimes it is hard to satisfy customer's need with an existing manufacturing technology.

Furthermore, the question about the loyalty of customers to the brand showed customers most likely are loyal but sometimes they could attract with better offers because eventually everyone is always looking for its own benefit. The sensitivity of product price according to enterprises mostly depends on market trends 90%, some competitors emphasized that it could be affected by the suppliers 40%. Besides, half of the respondents claimed the market that their company operate in are full of strong competitors, but the other half answered that almost all competitors have similar capabilities in their region. It is

well known that greenhouse effect is a very big issue nowadays and all the industrial companies paying vital role in it. The companies that participated in the survey claimed that it still has not faced any problem regarding it so far, but it knows that it could happen in the future, 60% of respondents claimed that.

When it was asked to mention the strengths of company compared to the rivals most popular answers were quality of products (80%), price of products (70%), design of products (60%) also was mentioned few times of some enterprises such benefits like variety of products, environmental benefits, and fast service. The most common reply about strategies of marketing and sales which were most familiar for the companies of respondents were application of discounts (80%) and long-term partnerships with customers (70%). By the way, some competitors also mentioned such strategies like the importance of studying competitors' strategies, differentiation and "Blue Ocean" strategy.

The Likert scale-based block of question helped to find out how the level of innovativeness of each competitor. Each respondent evaluated from 1 (not important at all) to 5 (absolutely essential) the innovativeness strategies that are most familiar to their company.

In the graph above (see Figure 1), a blue line represents the respondents' overall average evaluation, with the following outcomes: focusing on new products development – 3.8, focusing on new services development – 3.6, focusing on making existing processes more efficient – 4.5, introducing a new way of making or saving money – 3.6, implementing a new way of interacting with customers – 3.3 and capability to grow quickly and cope with the increasing rate of change – 4.1. The results showed that most attention almost all enterprises pay on focusing on making existing process more efficient with average evaluations from 4 to 5. The biggest difference was noticed on implementing a new way of interacting with customers it showed that for small companies it does not look like very important – with 1 average evaluation, but it pays much more attention focusing on new products development. It is very interesting that microenterprises pay so much attention to almost all the strategies because it requires a

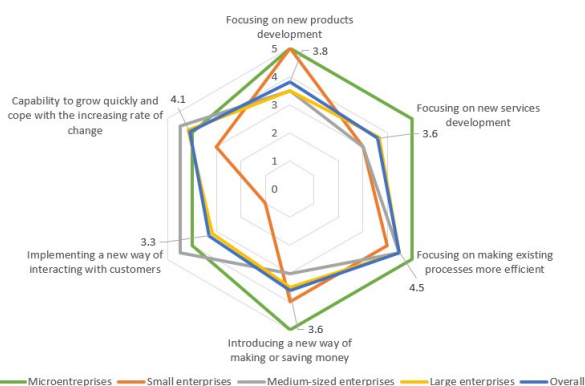


Figure 1. Innovativeness of the company (source: created by the author)

lot of work. Every enterprise has unique strategy in order to achieve their goals but answers from the respondents showed that innovativeness is a crucial part of their businesses, only difference is just that some companies have bigger capabilities to focus more on it than others.

Meanwhile, the same results could be analyzed according to the countries where the companies are established (see Figure 2). The respondents' overall evaluations are clearly shown by a blue line with the values in the graph.

The results from question block about innovativeness of company shows that there is no relevance of location aspect of the company because it is obvious from the graph that focusing on making existing process more efficient is very important for all enterprises. It makes sense because having as much efficient and fluent working process means better results for company that transforms to the profit. Besides that, it could be noticed that for some companies from such countries like Lithuania, Germany, Italy or even France innovation associates mostly with focusing on new product development but it is clearly noticeable that for an enterprise from The United Kingdom is not important at all. The same company that does not pay that much attention focus on new products development, but it cares a lot about capability to grow quickly and cope with the increasing rate of change. It is interesting because all the companies emphasize this type of strategy as relevant one and it is clearly noticeable from an overall average 4.1 evaluation.

Furthermore, an open-ended question which was included in the survey asked the companies to mention the most popular product and respondents mentioned such products like: professional kitchen tables, equipment for the bars, serving line system, cooling counters, stands for dishwashers, convention ovens, shelves, and cupboards. Some of the answers were mentioned more than once but, in any case, it shows that companies can concentrate their work either on very similar and wide production or even just on professional kitchen equipment. In addition, for the evaluating the technological capabilities of company was asked about capabilities of colouring production and it showed that the majority of respondents could provide any colour customers' needs or at least others can provide most common 6–10 colours.

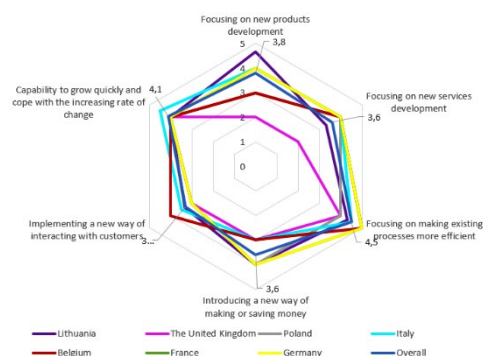


Figure 2. Innovativeness of the company by location (source: created by the author)

Likewise, the other question block assessed the significance of several production criteria that the enterprise focuses on. Respondents assessed each of the claims presented in the block from 1 (not important at all) to 5 (absolutely essential) in terms of how well they described the organizational approach toward manufacturing and major strengths of their company. The overall average evaluation of answers are indicated by a blue line in the graph below (see Figure 3), with the following results: high quality – 4.9, nonstandard solutions – 4.1, multifunctionality of products – 3.2, paying attention to suggestions of customers about improving products – 3.8, products are made from long-lasting materials – 4.5 and the design of product has characteristics of green design solutions 2.3 evaluation.

The graph discloses that most important for all the companies are high quality of their production that is totally normal because an industry of professional kitchen equipment especially if the products are made from stainless steel has very high hygiene requirements. The other attribute that most of the respondents' care was the condition that products must be made from long lasting materials, and it also refers high hygiene requirements of such products. The biggest difference between the results could be noticed on an attribute that product should have characteristics of green design solutions just microenterprises valued it very high – 5 but the overall evolution is just 2.3 and it means that other companies do not pay attention a lot to it but it is interesting that small companies do not care about it at all, but it pays more attention on other factors as it could be seen. It is hard to become a strong competitor in the market for new and such small companies' and it requires unique decisions like in this case. The graph clearly shows that bigger companies can focus on more attributes than smaller ones and have a good product and it does not require being specific good at one issue like it is for smaller enterprises.

Moreover, the same data might be evaluated based on the nations in which the enterprises are located. A blue line with the numbers in the graph below (see Figure 4) clearly shows the respondents' overall assessments.

Analyzing the data from this point of view it is clearly seen that attributes like high quality of products and that

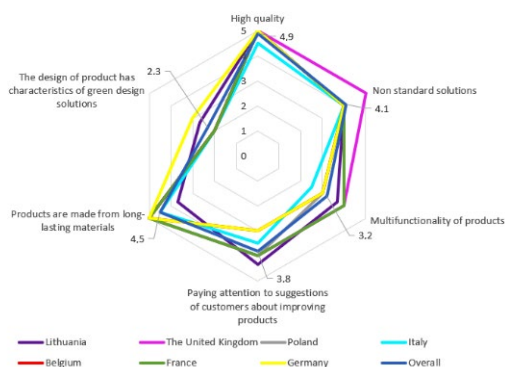


Figure 3. Significance of production criteria's by company by location (source: created by the author)

it should be made from-lasting materials are still the most important for the respondents. It still shows that green design solutions for the products does not like very attractive from most of the companies. Only the company from the United Kingdom clearly emphasized that their key to success is nonstandard solutions in their productions and it showed that Italian companies are not that interested in multifunctionality of products, but the rest of results implies that there is not any strong geographical impact in this industry for the companies and their attitude on the production.

Finally, the complains from the customers is an inalienable part of the business and it happens from time to time. The results of survey shows that 40% of companies receives it rarely (few times a month) other a bit more often like 2–3 time a week but it all depends on the attitude and how the company operates. The most important is to satisfy the customer and it is crucial important to respond to those all complaints as far as possible. The rival companies most often (70% of companies) respond to the customer about various issues per day but for example the rest of respondents (30%) claim that seek is to give an answer for the consumer within few hours. Add to that, the scale of the problems could be very wide, but everyone has their own methods how to solve the complaints regarded consumers. The participants' responses to an open-ended question about how to prevent reoccurring complaints were as follows:

- "Our company has a special system for customer claims. If we see complaints recurring, we explain the reasons without delay and change product, transport, communication style, analyse the price or materials, perform tests etc."
- "Our quality department tries to solve every problem that customers face. The product could be changed to other one or it could be fixed by us, or another solution could be proposed. Priority is to satisfy customer's needs."
- "It depends on the problem, but the main goal is to solve our mistake by satisfying customer needs."
- "We have the systems in our company that analyses recurring problems and in such a way we try to minimize complaints from customers"

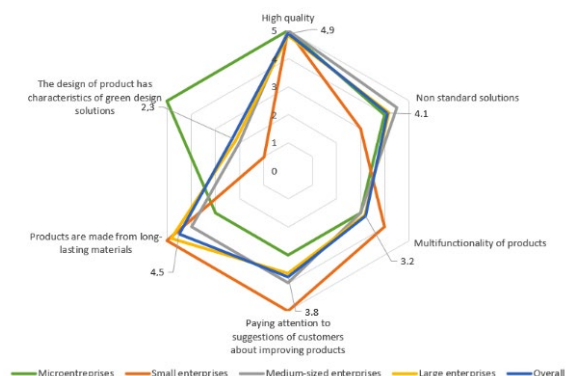


Figure 4. Significance of production criteria's by company (source: created by the author)



- “We analyse every complaint from customers and trying to make actions to prevent recurring problems”.
- “Including new solutions for those questions”.
- “It depends on the field of the problem, but our priority is to satisfy our customers. If the complaints start to be recurred, we would analyse it more deeply.”
- “Customer service tries to find the best solution for customer personally. Quality department analyses causes of that problem.”

Most of patterns of dealing with reoccurring complaints from consumers are very similar and consist of analyzing problem and finding the way roots of it in order to prevent from it in the future.

## 5. Results of survey customers

The online questionnaire was delivered through e-mail to the 169 firms’ supplied e-mail addresses on their websites. During a two-week period, 11 respondents, or around 6% of all contacted firms, responded to the survey.

According to the survey results, 63.6% of respondents were from Lithuania, which suggests that 7 firms are based here, while the remaining respondents each had 9.1%, indicating that there are also enterprises from Poland, the Netherlands, the United Kingdom, and the Czech Republic. The questionnaire also showed that the majority of customer specializes in business of restaurants 72.7%, some other customers focus on hotels 45.5% and the rest of respondents operates in cruises, grocery stores or supermarket chains. The age of the most companies which participated in the questionnaire were not very high: 5 of them is 6–10 years old, 4 customer companies are active for about 1–5 year and only just 2 customers operate more than 10 years. Besides, the sizes of companies that answered the questions distributed quite equally: 3 of enterprises have more 250 people in their organization, 2 companies have 50–249 employees, from 10 to 49 members in their company has 3 of companies and 3 businesses of customers have less than 10 people.

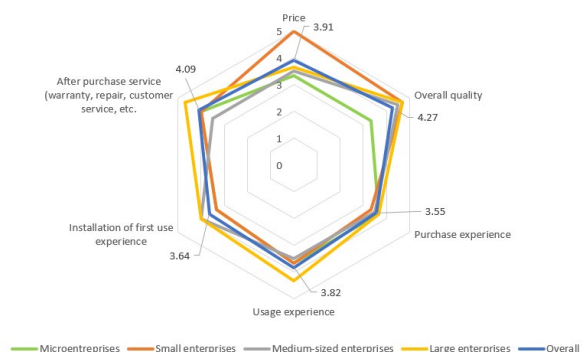
Moreover, customers always face some challenges in the market. The survey showed that most common issues that consumers face nowadays are low supply of customized, non-standard equipment and lack of good quality equipment, both challenges have 54.5%. Also, long delivery time is a problem too that was mentioned 5 times. The main reason which has 54.5% of all responses why customers do not start partnerships with new companies is because they cannot satisfy their needs. In addition, such things like special attention (63.6%), discounts (45.5%), flexible payment terms (36.4%) or long-term partnerships (36.4%) encourages customers of buying production from the supplier. The criteria that play the most of buying the certain product are functionality (63.6%), materiality (45.5%) and unique design (45.5%).

Furthermore, the shelf for serving lines could be customized according to the needs of customers. The question that covered the features that shelf should have, majority of the respondents (90.9%) claimed need LED light-

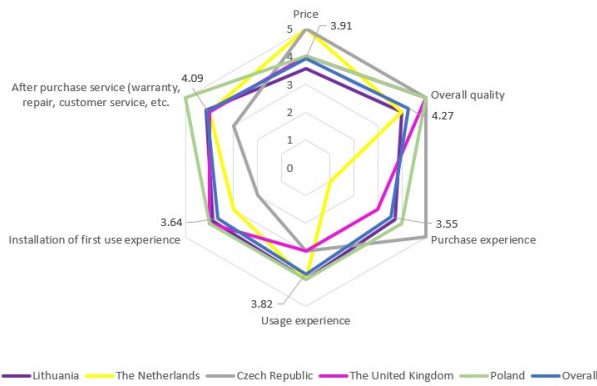
ing, other two most popular answers was heating option and the protective tempered glass from external environment each response received 63.6%. The most common length of the shelf that was mentioned by customers was 1135 mm (45.5%), the length of 1480 mm has 4 responses (36.4%). One of the customers expressed the need of 795 mm and one more respondent asked for the length of shelf that would be suitable for 2–5 gastronomic dishes. The shelf for serving lines usually goes with tempered glass on top and that is the reason why it is important to find out the maximum load that would be loaded on the shelf. 81.8% respondents of the survey claimed that maximum load carried on the shelf would be 6–10 kg. Also, 72.7% of participants of the survey would prefer good quality of the shelf than a better price (27.3%). The question that covered the price of the shelf of serving line showed that most of customers (81.8%) would pay for such product 700–1400 EUR.

Furthermore, the block of questions helped to find out the most important aspects of purchasing products for customers. Each respondent evaluated from 1 (not important at all) to 5 (absolutely essential) the most familiar aspects to their company’s philosophy. A blue line in the graph below (see Figure 5) indicates the overall average evaluation of the responses, with the following results: price – 3.91, overall quality – 4.27, purchase experience – 3.55, usage experience – 3.82, installation of first use experience – 3.64 and after purchase service (warranty, repair, customer service, etc.) – 4.09 evaluation.

The graph shows that most attention customers pay to the quality of products the average evaluations are even above overall evaluation for almost all the sizes of companies except microenterprises. It makes sense because afford highest quality products for some very small companies could be an issue. In addition to that, it is obvious that afford very expensive products for small companies could be a problem and it reflects on the graph with a high average evaluation of 5 compared to the overall average value. After purchase service mostly is important for large enterprises as it could be seen. The results clearly shows that bigger companies of customers can afford better products with better quality and expect much better experience of using product than smaller enterprises.



**Figure 5.** Importance of aspects that influence on deciding of purchasing equipment (source: created by the author)



**Figure 6.** Importance of aspects that influence on deciding of purchasing equipment by location (source: created by the author)

Likewise, the same data might be evaluated based on the countries where the consumers have established their businesses. A blue line with the values clearly shows the respondents' overall assessments in the graph below (see Figure 6).

When the data is analyzed from this perspective, it is seen that the trends of purchasing products differs a lot more compared with the previous one. It shows that such aspects like price, overall quality, purchase experience are crucially important for Czech Republic market, but it does not care that much about installation of first use experience or services after purchase equipment. The market of The Netherlands does not pay attention to purchase experience, but it cares a lot about the price and the rests of aspects it looks like is very important. Customers from Poland mostly cares about after purchase services and overall quality of products. The rest of the countries where the companies of customers are established give a similar amount of attention to every aspect of purchasing professional kitchen equipment according to the values

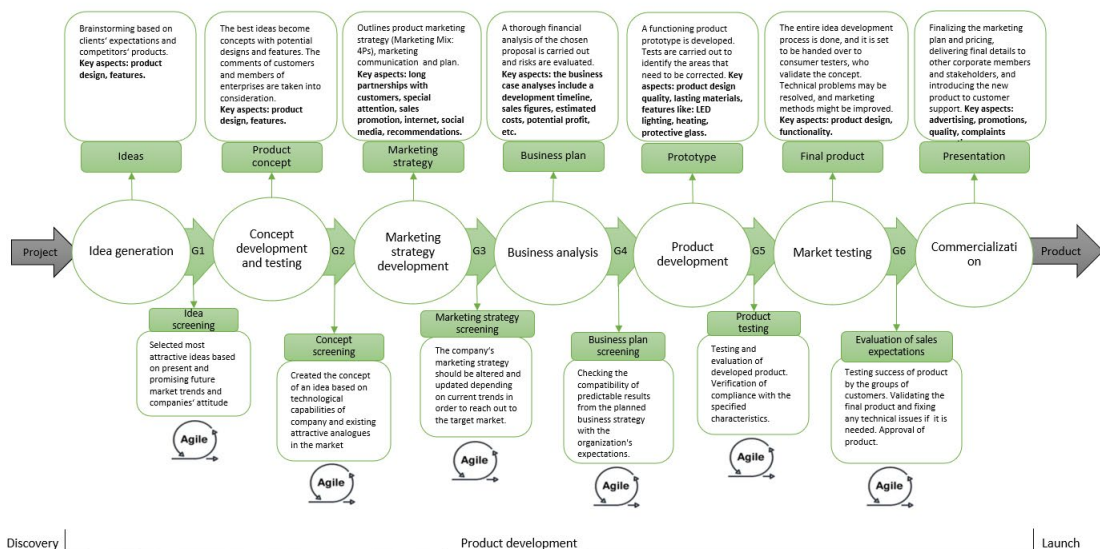
in the graph which are very close to the overall evaluation values.

The survey's final four questions focused on how customers prefer to communicate and purchase equipment. Most of the customers make purchases directly from manufacturer according to the responses of the questionnaire which has 72.7% of all responses, some of them also buying from retailers 27.3%, e-commerce 18.2% and from resellers 9.1%. The channels that consumers learn about new products most often answers were by internet (72.7%) or by recommendations (72.7%). Also, very popular channels among customers are social media, exhibitions or even seller's offers. Facebook is the most popular social media network (81.8%), although several respondents listed Instagram, Twitter, LinkedIn, and even WhatsApp several times. The most frequent method of communication with other firms, according to 10 of 11 survey participants, is via e-mail, another popular method is by phone (72.7%) or in person (54.5%).

## 6. Model for development and marketing of shelf for serving lines for customized professional kitchens

It was developed a model (see Figure 7) for developing and launching to the market shelf for serving to industrial enterprises which operate in commercial kitchen appliances industry. The model was adapted to the specific product, but it is versatile, and it could be adapted to any product in most of industrials. The purpose of the model is increasing the effectiveness of developing and marketing product in such a way making the whole process easier and much more successful.

The proposed model is hybrid type, and it based on the principles of Stage-Gate model, Decision process model which was suggested by Kotler and Keller and Agile principles. Also, it was developed based on review



**Figure 7.** Proposed model for development and launching to the market shelf for serving lines (source: created by the author)

of financial aspects of this field of industry, examples of existing prototypes of shelves for serving lines and the results from the surveys. The gathered data was examined and systematized before being displayed as a visual model. The model illustrates the key stages of new product development as well as recommended strategies for their execution, as well as other aspects of new product development and market launch. As it could be seen in the Figure 7 it has 7 stages and each of it has a brief description with segment of key aspects which came from the results of surveys and review of existing analogues in the market. Key aspects are adapted for the development of exact proposed product, and it suggests for developers the main issues which should be considered in each of that stage in order to achieve the best results. Moreover, the suggested model also has 6 gates which is designed to support ongoing project evaluation. Each stage has a gate where the project is examined and evaluated to determine whether it fulfils the company's requirements and objectives, or if it can forward to the next. The idea could be dropped if the gates shows that it is not worth to develop it or it could show that the project still needs some improvement, and it is needed to take the step back. In addition to that, the model includes several characteristics based on an Agile set of values and principles that provide a team with a consistent framework for making decisions about how to create the product. Having such a collection of beliefs might assist the team and the entire enterprise in achieving their main aim – customer satisfaction. The decisions made at each gate of the model should be based on the core ideals and principles of Agile. Companies are advised to perform sprints with review-type meetings where product increments or new findings are given at the conclusion of each stage-gate, which would be validated by the management team and stakeholders. It might also be scheduled on an as-needed basis, such as daily or weekly stand-up meetings or even retrospective sessions.

## 7. Conclusions and proposals

The primary goal of this article, as stated at the opening, was to investigate the commercial kitchens sector and the elements that influence the success of launching a newly developed shelf for serving lines, as well as to present a model for product launch proposals for this sort of business.

The review of the financial aspects of commercial kitchens industry showed that in 2020 the worldwide food service equipment market was estimated to be worth EUR 32.11 billion and it is predicted that from to increase at a compound annual growth rate of 5.5 percent from 2021 to 2028.

The survey for competitors showed that all companies operate in foreign market that means that all of it should considered the ways how to satisfy the needs of customers because that is the main reason why customers do not start partnerships with new companies. According to both

surveys the major requirement for the equipment for professional kitchens is quality what is totally normal because an industry of professional kitchen equipment especially if the products are made from stainless steel has very high hygiene requirements. Most companies that participated in the survey claimed that one of the main aspects of their production is the quality, but it also added that some of it facing the problem of hiring qualified employees which means that lack of good and well-trained employees could be one of the reasons why it is so hard to satisfy the customers properly. In addition, the review of already existing shelves for serving lines in the market showed that some designs do not have a complete display design and, as a result, fail to fulfill customer expectations and market demands. The good thing is that companies that manufactures this type of equipment claimed the most attention is being paid at the moment on making existing process more efficient and that should eventually turn into fulfilling customers' expectations. It makes sense because having as much efficient and fluent working process means better results for company that transforms to the profit. Besides such things like special attention for customers or applying of discounts could be very beneficial for suppliers in selling their production.

The model which was proposed at the end on this article is based on all the reviews and research which were made and all the gathered data was examined and systematized before being displayed as a visual model. The model is mostly indicative and as it was mentioned it is adapted of developing and launching to market shelf for serving lines, but organizations may simply modify and adjust it to include other project phases, implementation ideas, or methods. As it is a recombinational tool of launching the product the problematic issues can only be detected and improved by customizing the model to a specific case and assessing its success. The company loses the opportunity to achieve better performance without analyzing and adjusting existing organizational processes, so only by constantly improving its operations the company can expect to find a way to ensure the long-term success of new products in the market, which is why the model includes an Agile set of values and principles that can change an organization's attitude.

## References

- Carbonell-Foulquié, P., Munuera-Alemán, J. L., & Rodríguez-Escudero, A. I. (2004). Criteria employed for go/no-go decisions when developing successful highly innovative products. *Industrial Marketing Management*, 33(4), 307–316. [https://doi.org/10.1016/S0019-8501\(03\)00080-4](https://doi.org/10.1016/S0019-8501(03)00080-4)
- Colosi, L. (2006). *Designing an effective questionnaire*. <https://engagement.uiowa.edu/sites/engagement.uiowa.edu/files/2020-11/Colosi%20-%202002%20-%20Designing%20an%20Effective%20Questionnaire.pdf>
- Grand View Research. (2020). *Commercial kitchen appliances market size, share & trends analysis report by product (refrigerator, cooking appliance, dishwasher, other specialized appliance)*, by



end-use, by region, and segment forecasts, 2020 - 2027. <https://www.grandviewresearch.com/industry-analysis/commercial-kitchen-equipment-appliances-market>

Grand View Research. (2021). *Food service equipment market size, share & trends analysis report by product (kitchen purpose equipment, refrigeration equipment, food holding & storing equipment), by end-user, by region, and segment forecasts, 2021 - 2028*. <https://www.grandviewresearch.com/industry-analysis/food-service-equipment-market>

Kotler, P. T., & Armstrong, G. (2018). *Principles of marketing* (17th ed.). Pearson.

Kotler, P. T., & Keller, K. L. (2011). *Marketing management* (11th ed.). Pearson.

Mordor Intelligence. (2021). *Commercial kitchen appliances market - growth, trends, Covid-19 impact, and forecasts (2022 - 2027)*. <https://www.marketresearch.com/Mordor-Intelligence-LLP-v4018/China-Furniture-Growth-Trends-COVID-30756448/>

Sutton, M. R. (2021). *What is product development? Learn the 7-step framework*. <https://www.shopify.com/blog/product-development-process>

## EKSPOZICINĖS LENTYNOS KŪRIMAS IR IŠLEIDIMAS Į RINKĄ

### A. Valiokas

#### Santrauka

Šiuolaikinėje rinkoje vyrauja labai intensyvi konkurencija: nuolat besikeičiančios rinkos tendencijos ir nepastovūs, nenuspėjami klientų norai trumpina produkto gyvavimo ciklą. Šio straipsnio tikslas yra išnagrinėti profesionalių virtuvių įrangos gamintojų rinką bei nustatyti pagrindinius aspektus, kurie galėtų būti raktas į sėkmingą ekspozicinės lentynos išleidimą į rinką. Šio empirinio tyrimo pagrindą sudaro apklausa klientams ir įmonėms, kurios specializuojasi šioje pramonės srityje. Šiame straipsnyje pateikiami įmonių, kurios specializuojasi profesionalios virtuvės įrangos gamyboje, apklausos rezultatai, taip pat tokiais gaminiais besidominčių klientų apklausos rezultatai. Abiejų apklausų tikslas buvo nustatyti, kokiais sėkmės aspektais įmonė turėtų pasikliauti, siekdama sėkmingo produkto kūrimo ir išleidimo į rinką. Remiantis tyrimo rezultatais ir surinkta informacija, buvo sukurtas ir pristatytas modelis, kurį taikant galima tikėtis sėkmingo ekspozicinės lentynos kūrimo ir išleidimo į rinką. Tai hibridinio tipo modelis, kuris yra sudarytas iš 7 etapų, kurių kiekvienas taip pat turi fazę, kurioje kiekvieną kartą yra vertinamas projektas. Šis modelis yra rekomendacinio pobūdžio, kaip išleisti naujai sukurtą produktą į rinką, arba gali padėti identifikuoti probleminius klausimus vykstančiame procese.

**Reikšminiai žodžiai:** produktas, kūrimas, išleidimas, profesionali virtuvinė įranga, komercinė virtuvė, ekspozicinė lentyna, faktoriai, aspektai, rinka.