

Other Results

Work Package 2 Best Practices Innovations

Customer centric innovation in SMEs

Ágnes Horváth, Noémi Hajdú, László Molnár, Ádám Bereczk,
Klára Szűcsné Markovics

University of Miskolc, Hungary

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Abstract

Today, businesses are facing increasingly fierce competition. The sources of competitive advantage have been constantly changing in recent years. Creativity and the search for innovative solutions are becoming increasingly important in competition, alongside ever-tighter cost management. Customer-centric innovation is also crucial success factor for SMEs. This study investigated through empirical research how SMEs create and implement customer-based innovations, what kind of methods and digital tools they use, and what benefits and barriers the company realises in involving customers in innovation processes. The study states that customer-centric innovation can be applied successfully to companies regardless of size and in almost any sector. Using digital solutions, social media platforms, and data analysis tools makes it much easier to collect and process customer feedback. The companies saw the most significant benefit in increased customer satisfaction, which is associated with an image gain for the company. There is a lower benefit on the financial side and in terms of their operational efficiency. They have been less able to monetise the results of innovations involving customers in a short term. When implementing customer-centric innovations, companies face several difficulties in engaging customers; the need for digital skills and knowledgeable professionals was the most aggravating factor.

Keywords: customer centric innovation, SMEs, digital tools, customer engagement

1. Introduction and literature review

In the following introductory part, we review the theoretical approaches to defining innovation and the practical applicability of innovation narratives for SMEs. In this way, we also examine the small business explanation of customer-centric innovation (CCI). Accordingly, we demonstrate researchers' previous findings about the practical utilization of CCI. Last, we provide the advantages and challenges of introducing and applying CCI (as a concept and method).

Management studies define innovation as the purposeful and systematic process of introducing new ideas, products, services, or business models that create value, drive competitiveness, and fuel growth within an organization. It encompasses a range of activities and requires a supportive organizational context, strategic management, and a willingness to take risks and learn from successes and failures. Innovation encompasses the creation, implementation, and diffusion of new ideas, processes, products, or services within an organization. It is a strategic tool for gaining a competitive advantage, driving growth, and adapting to changing market conditions. (Dymitrowski and Mielcarek, 2021)

There are critical criteria that define innovation in business organizations. Innovation involves introducing new or significantly improved ideas, approaches, or solutions that depart from the status quo. It encompasses both radical breakthroughs and incremental improvements (novelty). The innovation aims to create value by developing new products or services that meet customer needs, enhancing operational processes to improve efficiency, or introducing new business models that generate revenue and drive profitability (value creation). Innovation is a structured process encompassing various stages, including idea generation, evaluation, development, implementation, and diffusion. It requires systematic management and coordination to navigate these stages (systematic process) effectively. Innovation is embedded within the organizational context and is influenced by factors such as leadership, culture, resources, structures, and strategies. Innovation is closely tied to learning and knowledge creation. (McKinsey/a, 2022) Organizations that foster a culture of continuous learning, experimentation, and knowledge sharing are likelier to succeed in their innovation efforts (learning and knowledge creation). Management studies recognize the importance of external collaboration in innovation. (Albuquerque, 2013) Engaging with external

stakeholders such as customers, suppliers, research institutions, and other organizations can provide valuable insights, resources, and opportunities for collaboration (external collaboration). (Itonics, 2023)

Innovation is vital for enterprises seeking to stay competitive, adapt to changing market dynamics, and drive growth. The practical aspects of innovation that are important for enterprises to consider are summarized in Table 1.

ATTRIBUTE	REASONING	IMPLEMENTATION
Strategic Vision	Enterprises should have a clear strategic vision that aligns with their overall goals and objectives.	This vision should explicitly incorporate innovation as a core element and communicate the organization's commitment to fostering a culture of innovation.
Innovation Culture	Building an innovation culture is crucial for any innovation goals.	It involves fostering an environment that encourages creativity, risk-taking, and learning.
Innovation Leadership	Effective leadership plays a crucial role in driving innovation within an enterprise.	Leaders should champion and support innovation initiatives, provide resources and support, and create an atmosphere that encourages employees to generate and implement ideas.
Dedicated Resources	Allocating dedicated resources, including funding, personnel, and time, is essential for fostering innovation.	Enterprises should establish mechanisms, such as innovation budgets or dedicated innovation teams, to ensure that innovation efforts receive the necessary support and attention.
Cross-Functional Collaboration	Collaboration across different functions and departments within an enterprise is key to successful innovation.	Enterprises should facilitate „innovation conversations” between the leaders of different departments and/or establish „innovation groups” of various experts.
Idea Generation and Capture	Enterprises should establish processes and platforms for idea generation and capture.	Techniques such as brainstorming sessions, suggestion boxes, innovation contests, or online collaboration platforms.
Continuous Learning and Adaptation	Innovation is an ongoing process that requires continuous learning and adaptation.	Enterprises should embrace a learning mindset, actively seek feedback and insights, and use data and analytics to evaluate the success of innovation initiatives.
Customer-Centric Approach	Adopting a customer-centric approach is crucial in innovation. Enterprises should prioritize understanding customer needs, pain points, and preferences.	Conducting market research, gathering customer feedback, and involving customers in the co-creation process can help ensure that innovations are relevant and meet market demands.

Table 1. The elements and development of the customer-centric approach in innovation practice
Source: Itonics, 2023 & McKinsey/a, 2022 & Albuquerque, 2013

By focusing on these practical aspects of innovation, enterprises can create an environment that nurtures and supports innovative ideas, enhances competitiveness, and drives sustainable growth. Customer-centric innovation refers to designing, developing, and implementing new products, services, or solutions with a primary focus on understanding and meeting the target customers' specific needs, preferences, and desires. It helps actively involve customers in innovation, gathering insights and feedback and using that information to create offerings that directly address their requirements and deliver superior value. By prioritising the customer in the innovation process, enterprises can drive growth, build customer loyalty, and achieve sustainable success.

Nowadays, the concept of customer-centric innovation is widespread, the core of which is that product and service developments are carried out by companies together with customers. It emphasises that companies should actively involve their customers in developing products and services. This strategy recognises that customers significantly impact a company's performance and that their opinions, suggestions and demand should be considered when developing new products and services. Customers are involved in customer-centric innovation at many stages of the innovation lifecycle, including brainstorming, concept generation, prototyping, testing, and

refinement. Customer input at these stages enables companies to develop goods and services that appeal to their target audience by learning more about their preferences, problems, and desires. Companies develop customer-centric innovations using a variety of tactics and methods. These include gathering customer feedback through focus groups, interviews, and surveys; studying trends in customer usage and behaviour; analysing customer data and insights; and engaging customers directly in co-creation sessions or beta testing initiatives. (Zajkowska and Melosh 2021) Companies can benefit from customer-centric innovation in several ways. First, they can create goods and services that better meet consumers' needs, increasing loyalty and satisfaction. Second, involving customers in the innovation process can foster a sense of co-creation and ownership, strengthening the bond between the company and its customers. Finally, customer-centric innovation can lead to a competitive advantage by enabling companies to stand out in the marketplace with distinctive offerings tailored to customer preferences. Customer-centric innovation demonstrates a shift toward customer-centric business practices, where companies prioritise understanding and satisfying customer needs to drive innovation and business expansion. The demand for development often comes from customers, who play an active role throughout the process. Then comes commercialisation. The types of innovations that impact customers can include the following (Desouza et. al, 2008):

1. customer segmentation,
2. customer analysis,
3. communication with customers,
4. customer interactions with the company,
5. product and service development.

The first step toward customer-centric innovation is customer segmentation, i.e., grouping the customer base according to common characteristics, requirements or preferences. Companies can better understand the different needs of their customers by segmenting them, and they can then develop products and services specifically for those segments. Since different consumer segments may have different needs and expectations, this enables more targeted and efficient innovation activities. (Zajkowska and Melosh 2021)

Customer analytics is gathering and studying consumer behaviour, preferences, and feedback. Many techniques, including surveys, interviews, social media monitoring, and data analysis, can be used. Companies can learn more about their customers' needs, problems and upcoming trends by analysing the data they provide. As this data informs the innovation process, companies can develop products that meet customers' preferences and solve their unique problems.

Effective communication with customers is critical to customer-centric innovation. Companies must actively engage with their customers to solicit their ideas, feedback and suggestions. This can be done through various channels, including online communities, customer feedback forums, and direct interactions. Through open communication, companies can build a collaborative relationship with their customers and ensure their voices are heard and considered in the innovation process.

Through customer-centric innovation, companies seek to build gratifying and meaningful relationships with their customers. This includes creating experiences and touchpoints that increase customer engagement and satisfaction. Developing customer support systems, user-friendly interfaces, seamless shopping experiences, and personalised interactions are all areas that companies can invest in. Companies can build lasting relationships and gain insightful data to inspire further innovation by focusing on maximising customer interactions. The ultimate goal of customer-centric innovation is to create products and services that meet consumer needs and preferences. Companies consult with their customers while developing a product or service and solicit their opinions. Idea development, concept testing, prototyping, and beta testing fall under this category. Companies can develop services that appeal to their target audience and increase customer satisfaction and acceptance by incorporating consumer insights into the development process. (Zajkowska and Melosh 2021)

In summary, consumer-centric innovation values customer participation in the innovation process. This includes understanding customer segments, analysing customer data, reaching out directly to customers, maximising customer interactions, and creating goods and services that meet customer preferences. Companies can improve customer satisfaction, loyalty, and overall business performance by putting their customers' needs at the centre of their innovation activities.

According to a study of 110 companies in Europe conducted by McKinsey, customer-centric organisations that focus their innovative ideas and processes of customer involvement grow their revenue nine times faster than those that are not. According to the survey, only 36% of businesses are genuinely customer-centric, but those see an average 8.7% gain in sales. Compared to those with low to medium levels, this is 0.8% lower. According to the report, customer-centric businesses are more likely to keep customers, and those customers are more inclined to promote these businesses to their friends and family, spurring growth. Compared to organisations with low customer centrality (20%), strong customer-centricity businesses are also four times more likely to have delighted staff (90%). Another study conducted in early 2023 surveyed more than 600 employees of North American retailers to gauge their opinions on customer centrality. According to the research, customer centrality is an essential indicator of future financial performance. (Article, Kearney, 2023 & McKinsey/B)

Before we demonstrate the findings of our primary research conducted in the focus countries, let us go through the advantages and possible challenges of utilising customer-centric innovation in small businesses, summarised in Table 2.

Overall, customer-centric innovation places the customer at the centre of business strategies and decision-making. Enterprises can drive customer satisfaction, loyalty, and business success by understanding and meeting customer needs. While customer-centric innovation offers numerous benefits, it also comes with its own set of challenges. Overcoming these challenges requires strategic planning, cultural change, investment in technology and analytics, strong leadership, and ongoing customer engagement. Customer-centric innovation is an iterative process, and enterprises need to continuously learn, adapt, and refine their approaches to meet evolving customer expectations. (McKinsey/C) After summarizing and interpreting the benefits of customer-centric innovation alongside the articulation of its possible challenges, we will present the results regarding our research questions.

This study investigated how SMEs create and implement customer-based innovations, what digital technologies they use, and what benefits and barriers the company recognises in involving customers in innovation processes. The following research questions were formulated.

- RQ1 What is the penetration of customer-centric innovation among SMEs?
- RQ2 What methods and digital tools do they use to involve their customers in innovation activities?
- RQ3 What benefits do they realise through customer-centric innovation, and what are the main barriers and difficulties?

ADVANTAGES	POSSIBLE CHALLENGES
Improved Customer Satisfaction: When customers feel valued and their needs are addressed, they are more likely to develop loyalty towards the brand, make repeat purchases, and recommend the business to others.	Obtaining Accurate Customer Insights: Enterprises need to invest in robust market research, customer feedback mechanisms, and data analytics capabilities to obtain reliable and actionable customer insights.
Competitive Advantage: This can result in increased market share, customer retention, and stronger brand reputation.	Balancing Diverse Customer Needs: Enterprises must identify key customer segments, and develop strategies that cater to different customer groups effectively.
Increased Customer Loyalty and Advocacy:	Aligning Internal Culture and Processes:

Satisfied customers are more likely to become loyal patrons, repeatedly choosing the business over competitors.	Enterprises need to foster a customer-focused mindset and align internal processes, systems, and incentives to support customer-centric innovation.
Enhanced Product Development: Customer-centric innovation reduces the risk of developing products or features that do not resonate with the target audience.	Data Privacy and Ethics: Enterprises must navigate regulatory requirements and ensure that they handle customer data responsibly and transparently.
Increased Revenue and Business Growth: Customer-centric innovation can also open new market opportunities, attract new customers, and support business growth.	Anticipating Future Customer Needs: Need to predict future customer trends, requiring enterprises to invest in market research, trend analysis, and continuous monitoring of customer behaviors.
Better Decision Making: Enterprises can make informed decisions based on customer preferences, market trends, and changing consumer behaviors.	Integrating Customer Feedback and Innovation Processes: Enterprises must establish mechanisms to capture and analyze customer feedback systematically.
Efficient Resource Allocation: By understanding customer priorities, enterprises can prioritize investments, streamline operations, and optimize resource allocation to areas that generate the most value for customers.	Balancing Short-Term and Long-Term Goals: Enterprises need to find the right balance between meeting immediate customer needs and investing in long-term innovation initiatives.
Continuous Improvement: By actively seeking customer feedback and incorporating it into the innovation process, enterprises can identify areas for improvement, iterate on their offerings, and adapt to changing market dynamics.	Competitive Landscape and Market Disruption: Enterprises must navigate industry disruptions, emerging technologies, and changing market dynamics to stay relevant. Failing to adapt to these changes can result in losing market share and customer loyalty.

Table 2. Practical advantages and challenges of introducing the customer-centric innovation approach

Source: Zhang, Wang and Liu, 2020 & Klingebiel and Rammer, 2013 & McKinsey/C

2. Methodology

Regarding the research method, a questionnaire survey was conducted to achieve the research objectives and answer the research questions. The market research was conducted online (using Survey Monkey). The survey took place between April 7 and June 8, 2021. During this period, the questionnaire was started by 101 respondents, but only 95 responses from 11 different countries were evaluable. Most responses (82 %) came from Germany, Hungary, Poland and Denmark. Other countries participating in the survey include Lithuania, Belarus, Estonia, Finland, Bulgaria, Latvia and Russia. For Belarus, Estonia and Finland, the number of respondents is two and for Bulgaria, Latvia and Russia, one. The target group was micro, small and medium-sized enterprises (60 % of the respondents was micro-, 18 % were small- and 9.5 % medium-sized company), but large companies were also among the respondents (12.6 %). (Their responses were not excluded from the analysis but were considered as a control group.) The sectoral affiliation of respondents shows a varied picture. More than 80 % of the companies/organisations surveyed have been established for over five years. Since the data collected during the fieldwork cannot be considered representative, the findings obtained during the data analysis cannot be generalised, i.e. the results are valid only for the sample. Data analysis was performed using the IBM SPSS Statistics software (version 26). Mainly univariate analyses were performed (descriptive statistics, frequency tables, means, standard deviations), but also some bivariate analyses in the form of cross-tabulations and correlation analyses. (Horváth et al. 2021a)

Besides the questionnaire survey, the project also aimed to collect best practices. We studied 37 best practices from 12 countries. Most of the best practices came from Poland (9) and Hungary (8). More than three good practices were collected from Germany (5) and Denmark (4). We were able to collect 1-3 good practices from the following countries: Estonia, Finland, Italy, Lithuania,

Norway, Sweden, the United Kingdom, and the United States. This paper does not present the individual cases but only the conclusions drawn from them, complementing the questionnaire survey results. (Horváth et al. 2021b)

3. Results

We formulated our research questions according to the following logical framework. First, we sought to answer whether SMEs use customer-centric innovation (RQ1). If not, what is the reason for this and if so, what methods and tools do they use to engage their customers in the innovation activities (RQ2)? Finally, we examined the perceived benefits of customer-centric innovation for SMEs and the factors that hinder or impede the implementation of customer-centric innovation (RQ3). Our concept is summarised in Figure 1.

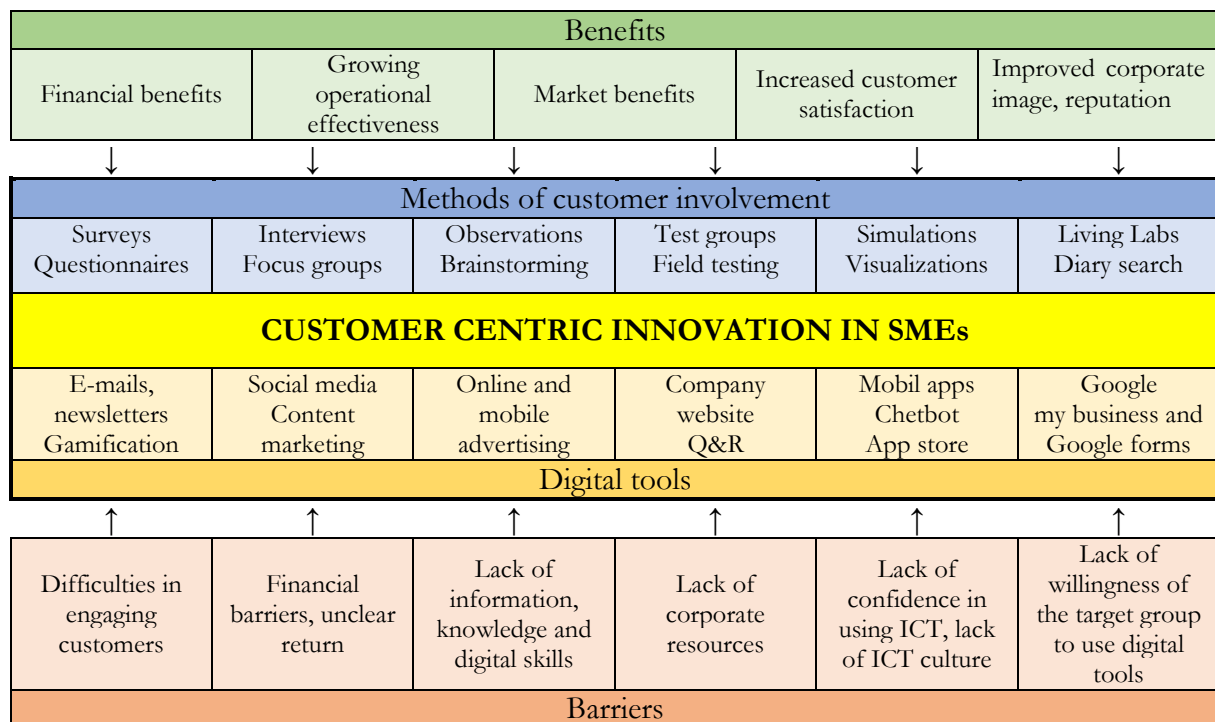


Figure 1: Concept of the research

Source: own construction

We summarise our findings along the lines of the research questions based on Horváth et al. 2021a, 2021b and 2022; Zajkowska and Melosh 2021.

3.1. Penetration of customer-centric innovation among SMEs?

Eighty-six responses were received regarding the presence of customer-centric innovation. In total, forty-six organizations use customer-centric innovation, and forty do not. Due to the small number of respondents and case studies, comparing results by country, company size, and sector is not possible. In general, customer-centric innovation can be successful in almost all sectors, regardless of the companies' size, scale, or location. The results of the survey and the cases show, that customer-centric innovation can be successfully used in many sectors. The products and sectors are very different. It is prevalent in areas where personalized (customized) products and services are of greater importance. However, good examples of customer-centric innovation can occur at

more than just the product level. Other server processes such as sales, website, and delivery can be made easier and more efficient by leveraging consumer feedback. In other words, the efficiency of company operations and the complex customer service process can be made more efficient through consumer feedback. If customer-centric innovation was not applied, the reason had to be given (Figure 2).

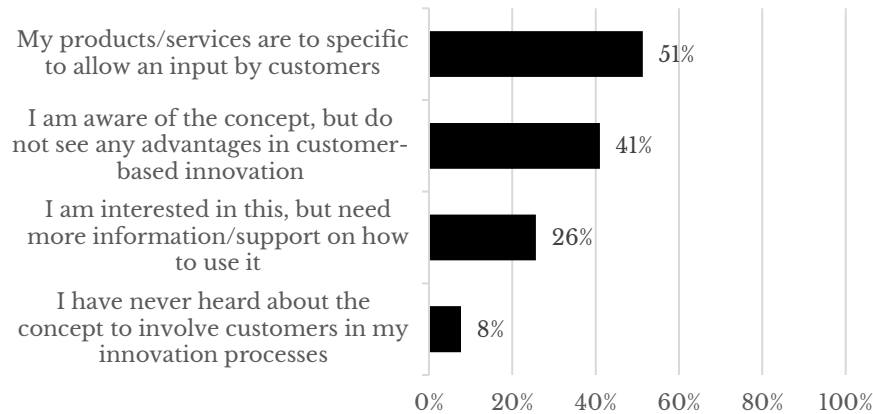


Figure 2: Why have you not been involved in customer-centric innovation?

Source: own construction

Respondents most often argued that their product/service is too specific to involve consumers in the innovation process or that they do not see a benefit in involving consumers. A quarter of the companies that do not use customer-driven innovation would need more information and support to implement customer-driven innovation. The proportion of companies that do not know this concept was relatively low. These results support the need for innovation training for SMEs.

3.2. Methods and digital tools used to involve customers in innovation activities

In the next part of our research, we wanted to know what methods companies use to involve their customers in their innovation processes. The following methods were included in the answer options:

- Surveys/questionnaires
- Interviews
- Focus groups
- Brainstorming
- Observations (customers are personally observed in their daily lives)
- Test groups
- Field testing (products and/or services are tested under real-life conditions)
- Simulations and visualizations
- Living Labs (working with customers in the company's laboratories and workshops)
- Diary search: (target groups are asked to write their experiences with products and/or services in a pre-structured online diary)

This question received 37 evaluable responses from the 46 companies engaged in customer-centric innovation (8 large companies, 5 medium companies, 6 small companies, 27 micro companies) (Figure 3).

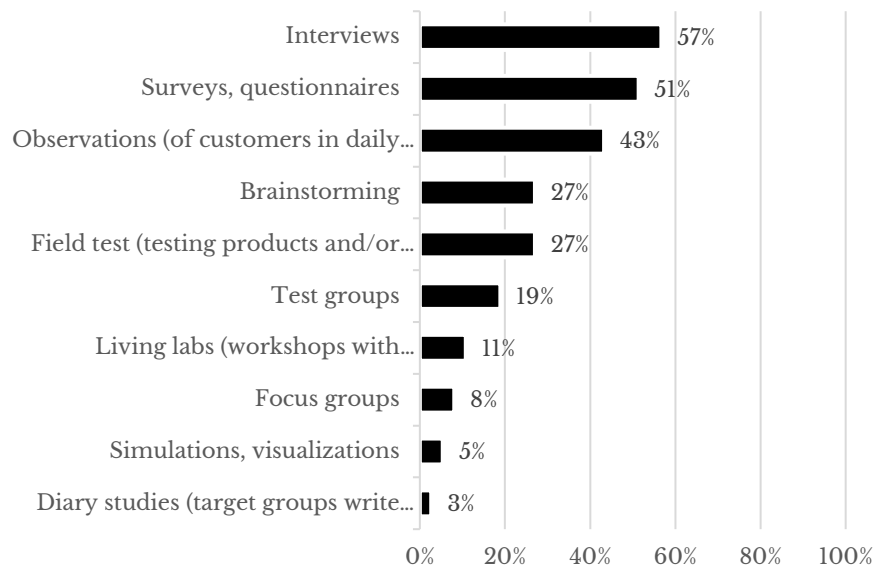


Figure 3: What methods are used in your company for involving customers in innovation processes?

Source: own construction

The most common customer engagement methods are interviews, surveys, and questionnaires. More than half of the respondents (21 and 19 respondents, respectively) use these methods, which are relatively easy to implement and more familiar, especially among SMEs. In addition, observing customers in their daily lives plays a vital role in supporting innovation processes. More than 40 per cent of companies engaged in customer-centric innovation (and who answered this question) use the observation method. Brainstorming was reported by more than a quarter of respondents. Field trials, in which products and/or services are tested under actual conditions, account for the same proportion. Seven companies use test groups to explore and incorporate the opinions and experiences of their customers. The sectoral breakdown of companies shows a different picture of the most common methods so that no clear conclusion can be drawn regarding the specifics of the sector. We also found no significant differences in the frequently used methods concerning company size. Less frequently used methods of customer engagement include:

- Living Labs (working with customers in the company's labs and workshops): Four companies use this method to engage customers. Two companies are in manufacturing, and two are in education. Three companies have over 250 employees, and the fourth has 10 to 50 employees. This method is typical of larger companies. Each company has been in business for more than five years.
- Focus groups: Three companies use this method to attract customers. One company is in manufacturing, one in education, and one in other services. Two companies have more than 250 employees, and one has fewer than ten employees. This method is also more typical for larger companies. All three companies have been operating for more than five years.
- Simulations and visualizations: Only two companies use this method to target customers. One company is in the construction industry, the other in education. One company has more than 250 employees, and one has 51-250 employees. This method is also more typical for larger companies. Both companies have been operating for more than five years.
- Diary search: (target groups are asked to write their experiences with products and/or services in a pre-structured online diary): Only one company uses this method to target

customers. The Danish company is active in the field of education. The company has over 250 employees and has been operating for over five years.

Although no general conclusions can be drawn, our survey results suggest that more complex, organized customer engagement solutions are more likely to be used by large and medium-sized companies and more mature companies. Companies involve their customers mainly in the brainstorming phase, and the further we progress in the innovation process, the more this value decreases.

The research also dealt with companies' digital communication channels to communicate and engage with their consumers. Respondents could also tick simultaneously several of the digital communication channels used. The highest percentage was indicated for the use of email (sixty-five out of seventy-seven respondents). The email was followed by the use of social media (thirty-two out of seventy-seven respondents). In addition, online advertising, an interactive website, and Q&R are popular (more than 20 per cent). Using novel tools such as chatbots, support teams, or gamification tools is present but in a low percentage (Figure 4). Identifying a clear pattern based on company size in using the tools is impossible.



Figure 4: What (digital) communication channels does your company use?
Source: own construction

The experiences of the best practices also show that the most common methods of reaching customers are interviews, surveys and questionnaires, which are relatively easy to implement and more familiar, especially among SMEs. Companies increasingly use digital communication channels to communicate and reach customers. The use of email has the highest share, followed using social media (Facebook, Instagram, Pinterest, Twitter, YouTube). In addition, online advertising (Google ads, Instagram ads), an interactive website and Q&R are often mentioned. Using novel tools such as chatbots, support teams, or gamification tools is present but in a low percentage.

In some areas where customised and personalised products are more vital, or for smaller companies, face-to-face encounters can be the most inspiring product development method, along with online and traditional offline methods.

Soliciting customer feedback is not innovation per se. Another important step is when the consumer opinions and experiences received are incorporated into product/service development or to make operational processes more efficient. With custom, personalised products, it is often the case that a product, proven shape, design, or technical solution for a customer is later incorporated into the broader product line, leveraging their experience. Getting to know the

consumers and their behaviours, habits, needs and preferences, and the increasingly conscious use of information is a crucial element of the marketing strategy. A higher level of using the information collected from customers is the use of digital methods, such as data analysis or the use of algorithms and applications, to identify consumers and their preferences better and personalise and target marketing communications. Some companies use multiple methods to target their consumers, combining offline and online methods. Although no general conclusions can be drawn, our survey results show that more complex, organised solutions for reaching customers are more likely to be used by large and more mature companies. An important question is whether companies categorise customers by their needs or expertise when engaging them in innovation. This is an essential question because different types of customer feedback and experiences can be included. In the product development process, different types of information can be gathered from lay customers and professional users. Both types of information are beneficial.

3.3. Benefits and barriers of customer-centric innovation

The survey examined the nature and extent of the benefits that companies derive from adopting customer-centric innovations. The available benefits are divided into five main groups:

- Financial benefits (increased sales, profitability, cost reduction).
- Growing operational effectiveness (increased sales volume, product and service portfolio, productivity, product and service quality, speed and reliability of communication and transactions, positive change in business model and practises).
- Market benefits (increased number of customers and potential customers, market position, market share, penetration of new markets, global trade, geographic expansion, business linkages, competitiveness).
- Increased customer satisfaction (better understanding and responsiveness to customer needs, customised/adapted product development, better and faster communication with customers)
- Improved corporate image, reputation

Respondents could rate on a Likert scale of one to five the extent to which their company has benefited from each of the advantages through introducing customer-focused innovations. The numerical values have the following meaning: 1: not beneficial, 2: slightly beneficial, 3: somewhat beneficial, 4: moderately beneficial, 5: strongly beneficial. For each advantage, 34-36 ratings were given. The arithmetic mean of these responses is shown in Figure 5.

By introducing customer-centric innovations, companies gained an advantage in all areas, albeit varying degrees. The lowest mean score was 2.97, meaning somewhat beneficial. The companies saw the most significant (medium) benefit in increased customer satisfaction, which is associated with an image gain for the company. There is a lower benefit on the financial side and in terms of their operational efficiency. Accordingly, they have been less able to monetize the results of innovations involving customers. However, customer satisfaction and company reputation improvements pay off financially in the long run.

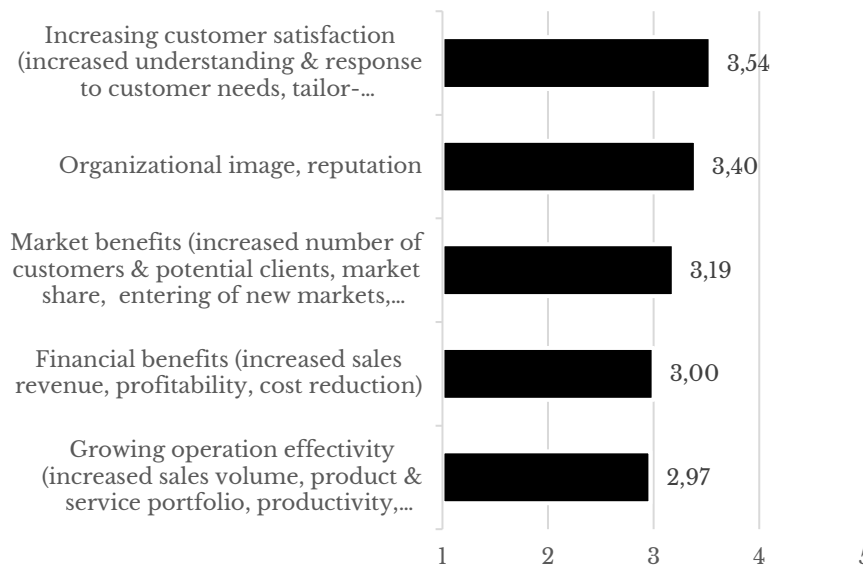


Figure 5: To what extent have customer-centered innovation measures brought benefits?

Source: own construction

When we examine the realization of benefits by company size, the benefits occurred to varying degrees in each size category. Thirty-six companies responded to this question: twenty were micro companies, six were small companies, three were medium companies, and seven were large companies. Generally, a value between 3 and 4 was found in most cases, indicating a slight to medium advantage. Financial benefits and operational efficiency benefits were the least perceived by the companies. On average, large companies achieved more significant benefits in all areas due to their customer-oriented innovations. On the other hand, the benefits were perceived as below average for the small companies surveyed in almost all cases. Micro companies were closer to the mean, unsurprising since they were overrepresented in the sample. In most cases, the benefits to the market were highlighted by the companies when presenting their practices. Through consumer engagement, the products/services offered by the company increasingly meet consumer needs, which increases consumer satisfaction and brand loyalty, strengthens the company's market position and increases the number of customers and sales. Positive feedback from other customers can motivate new customers and build confidence in the product/service and the company itself. Social media's positive effects can be both direct and indirect. In addition to market benefits, a company can increase operational efficiency by learning about and taking advantage of consumer feedback. However, the benefits of market and operational efficiency are also realized in the long term in financial benefits.

When implementing customer-centric innovations, companies face several difficulties in engaging customers. Engaging customers is time and resource-consuming (infrastructure, technology, IT, human resources and financial resources are necessary). Identifying customers who can contribute innovative ideas during the innovation process takes time and effort. Based on the responses of the thirty-five companies, the most significant difficulty is the time required and the need for financial resources (Figure 6). This suggests that getting to know consumer opinions and engaging consumers is primarily a matter of time and money. More than half of the companies had difficulty with both of these factors. This is probably related to the fact that in SMEs, human resources are scarce; there is no one person in the company to deal with this separately. Moreover, hiring another employee would involve additional costs for them. Identifying consumers with innovative ideas and technical and infrastructural requirements was not difficult for the responding companies.

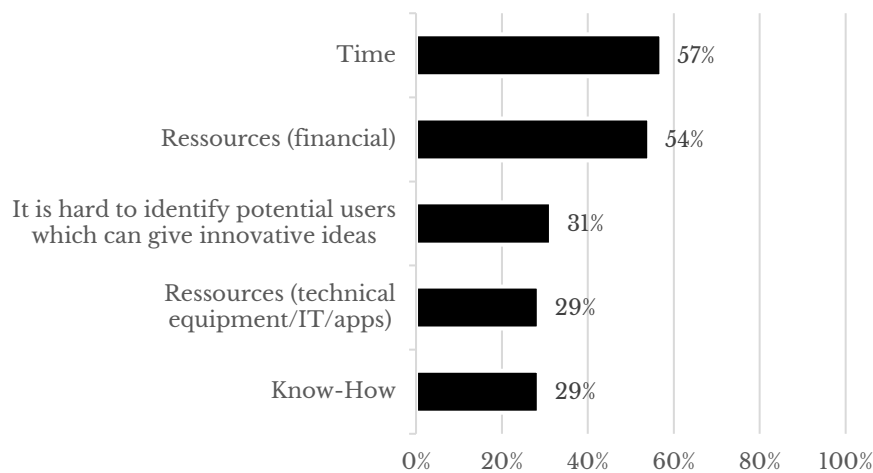


Figure 6: What are the major challenges when you involve customers in the innovation process?
Source: own construction

In addition to these difficulties, companies face the problem that their customers are not motivated enough to provide feedback to the company. Increasing the willingness to provide feedback is essential to encourage consumers. One such tool is to build on consumers' emotions. (See, for example, Gaia's motto, "We want to learn from you", or developing a sense of "belonging to a community.") Another way to encourage consumer feedback is to create a financial interest among consumers, for example, by introducing coupons, vouchers, giveaways, idea contests or customer loyalty programs, or even by securing a revenue share for the best ideas.

Finally, the study examined what companies see as the main barriers to adopting customer-centric innovation supported by digital tools. The barriers were categorised into six broad groups:

- Financial barriers (high cost and investment requirements regarding hardware, software, networks, training and organisational change).
- Unclear return on investment (challenging to measure added value, lack of objective information about the benefits and costs of ICT, too much risk).
- Lack of information, knowledge and digital skills (lack of professional human resources).
- Lack of corporate resources (lack of appropriate knowledge-based assets, technological capabilities).
- Lack of confidence in using ICT (risks in protecting intellectual property and digital rights. Problems with digital security and data protection).
- Lack of ICT culture in the company.
- Lack of willingness of our target group to use digital tools.

Respondents could rate on a Likert scale of one to five the extent to which each factor hindered the implementation of customer-centric innovations. The numerical values have the following meaning: 1: No challenge. 2: Slightly challenging. 3: Somewhat challenging. 4: Moderately challenging. 5: Severely challenging. For each obstacle, 34-35 ratings were given. The arithmetic mean of these responses is shown in Figure 7.

It is encouraging that implementing customer-centric innovations supported by digital tools has not encountered significant barriers in almost any area. For respondents, lack of digital skills and knowledgeable professionals was the most aggravating factor, but they received an average score of 3.26, representing a moderate challenge. Financial and resource barriers followed in order of strength. These results confirm our expectations.



Figure 7: To what extent is your company facing different barriers in regard to customer-centered innovation using digital technologies and tools?

Source: own construction

In many cases, SMEs face the problem of insufficient resources and funding. Uncertainty about the return on investment, the ICT culture in the company, distrust of digital solutions and customer acceptance of digital solutions were less of a problem for the responding companies. Differences in perceived barriers by company size were examined. Thirty-six companies responded to the question: twenty were micro companies, six were small companies, three were medium companies, and seven were large companies. Generally, a value between 2-3.6 can be found in most cases, representing a small to medium value in evaluating challenges. Surprisingly, large companies in all areas had more significant challenges on average in implementing customer-centric innovations. These challenges were also perceived better by very small-sized companies, which was also to be expected. Small and medium-sized companies were more likely to view the challenges positively.

4. Conclusion

Based on the questionnaire survey and the best practices results, we can conclude that small and medium enterprises operating in different industries use different methods to engage customers in customer-centric innovation. Relatively simple engagement methods, such as questionnaires, surveys, group or in-depth interviews, product career tracking, social media tools, various loyalty programs, or community-based experience meetings, are widely used. According to the questionnaire surveys and best practices collection, more than fifty per cent of responding companies use these methods. While more severe customer engagement methods used for customer innovation, such as simulations, living labs, and diary studies, are used by only a few companies where the scope of activities also relies on more advanced technologies. We draw the following conclusions and recommendations:

- Customer-centric innovation can be applied to companies regardless of their size. There are many ways to involve customers in innovation processes, from simple to more complex, expensive solutions. Even the smallest companies can find the proper and accessible methods.
- Customer-centric innovation can be successfully applied in almost any sector. We have found many examples of customer engagement and successful innovation from

manufacturing companies to service providers. Customer-centric innovation can be easily created in high-tech sectors or areas with customised products.

- There are several ways to capture customers' opinions/experiences/needs. Using digital solutions, social media platforms, and data analysis tools makes it much easier to collect and process customer feedback.
- Consciously getting to know customer feedback and accurately identifying customers and their needs helps develop a marketing strategy and product innovations.
- Getting to know customer feedback is not per se a customer-centric innovation. The knowledge and experience gained in this way must be integrated into the product development process to speak of innovation.
- The lack of motivation and interest on the part of customers in feedback makes it difficult to create customer-centric innovations. Increasing the willingness of customers to provide feedback and create motivation could be done, for example, by creating a "sense of community," influencing customers' emotions, or creating financial interest among customers, e.g., through coupons, discounts, loyalty programs, and idea contests.
- Through customer-centric innovation, companies can achieve a range of benefits that directly impact market position and operational efficiency and bring longer-term financial benefits to businesses.
- SMEs need to learn more about customer-centric innovation and the digital capabilities that support it. For this reason, there is a great need for training that develops SMEs' knowledge and skills in this area.
- SMEs are quick and efficient in communication and have good informal contacts, but may need more time and resources, which prevents them from building an adequate science and technology network. Building and developing these networks and involving SMEs can go a long way toward overcoming time and resource constraints.
- The innovation advantage of SMEs is that they can employ technical staff in several company departments. At the same time, however, they often lack core technical knowledge (it may be necessary to use external technical specialists) and miss out on the benefits of diversifying research and development.
- From a financial perspective, SMEs can have lower innovation costs and higher R&D efficiency. At the same time, they face the risk of being unable to spread the high financial risks of innovation over several areas of activity, the difficulties of accessing external capital and the high risk of the cost of capital.
- A significant advantage for SMEs is that the regulations that apply to them are often less stringent. However, even then, they often need help to deal with regulatory complexity, and high adaptation and patenting costs mean difficulties.
- Many government programs support the innovation activities of small and medium-sized enterprises, although access to government programs and information can often be tricky. Due to high costs, they may also need help with collaborative programs.
- One of the vital innovation advantages of SMEs is their ability to learn, adapt and develop routines quickly.
- SMEs' generally simple and centralized, organic form should also be counted among their innovation advantages.
- SMEs can be attractive partners for innovation-oriented joint ventures/strategic alliances, especially if they are technological leaders. However, their limited management experience and subordinate position of power are disadvantages when they cooperate with large companies in this respect.

The conclusions of our study have their limitations. Comparing the results in a stratified way (for example, by country, company size or economic sector) is not possible based on the currently

available data. The sample size is minimal ($n = 95$ companies). Subdividing the sample into subsamples would significantly reduce the number of responses. Drawing reliable and accurate conclusions would be impossible, and the results would contain an unacceptably extensive (sampling) error. Since the data collected during the fieldwork cannot be considered representative, the findings obtained during the data analysis cannot be generalised, i.e. the results are valid only for the sample.

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