

Further training program “Realisation of customer-centred Innovations”

Modul 4 Methods

Teaching Material 3 Methods of customer’s involvement in innovation processes

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Methods of customer's involvement in innovation processes

Companies can choose different methods to involve their customers in innovation processes. E.g.:

Surveys/questionnaires

Interviews

Focus Groups

Brainstorming

Observations (customers are observed in daily life personally)

Test Groups

Field Test (testing products and/or services in real life circumstances)

Simulations and visualizations

Living Labs (Cooperation with customers in company's laboratories and workshops)

Diary Search: (target groups are asked to write the product and/or service experiences in a pre-structured online diary)

others

The most common method of involving customers is conducting interviews, surveys, and questionnaires, which are relatively easier to implement and better known, especially among SMEs. The companies use more of the digital communication channels used for communicating and collaborating with customers at the same time. The highest proportion was the use of e-mail, which was followed by the use of social media (Facebook, Instagram, Pinterest, Twitter, Youtube). In addition, the use of online advertising (Google ads, Instagram ads), an interactive website, and Q&R are mostly mentioned. The use of novel tools such as chatbots, support teams, or gamification tools is present, but in a rather minor proportion.

E-mail, phone

„In general, in the area of services, we contact the customers on the phone, via email, but above all in person. Based on the orders we can receive information, again electronically, about the products, spare parts, and the necessary new tools.”

Földvári, self-employed, Hungary

Social media

„In terms of social media presence, DHL is active on several platforms (e.g. Facebook, Instagram, Twitter) and shares a mix of personal stories from employees and new products and services, but also offers quick and simple customer service through a customer support account on twitter, for instance (@DHLPaket, @DHLexpress, @DHLPaket).”

DHL, Germany

„To cooperate with consumers in the field of innovation, we primarily use: Website, Facebook, You Tube, Instagram, Blog, E-mail communication.”

OMEGA, Poland

Social media and company website

„Another way of reaching out to her customers is through social media. For instance, the company often uses Instagram to receive quick and direct feedback from customers, e.g. in the form of short question and answer options on Instagram, or through short questionnaires. She encourages customers to share pictures of the jewellery and shares the stories behind certain pieces of jewellery on the company’s Instagram and her website. This way she involves her customers in the design of a product or, more recently, in the design of the company’s website. Another way in which Kriss uses social media to engage her customers in the design process is by giving the customers a few options in a product’s design and letting them vote on which one they like best or encouraging them to name a product, which is always a fun process for all involved. She also engages with customers via email and in her store.

New Vintage by Kriss, a jewellery company, Estonia

User survey

“The OmaPosti concept is based on a comprehensive user survey that interviewed over 50 users, charted their aspirations, and learned about their real needs. The service is constantly being developed and validated according to the needs of the users so that each new concept and feature will provide the best possible user experience.”

Posti, Finland

Digital guest book

„We have a digital guest book and write into it the date and the type of hairstyle we made to the customer. We have been keeping this digital guest book for years now, thus we know about each of our customer when we dyed her/his hair, what type and colour of dye we used and what was the hairstyle.

This way we become familiar with the customs of our clients, the materials used in his/her case. It is also beneficial for us because this way I can avoid buying paints and materials that nobody wants.”

Berendi Hair @ Academy, Hungary

Electronic drive interface

„When I receive a concrete order from a client, when I make and/or refurbish an apartment for a customer, I create an electronic drive interface for each of my future apartment owners where I upload the apartment layout, photos, the electricity and furniture I recommend, together with the recommended tiles, doors, windows, lamps, etc. thus the customer can choose from them. All the respective information is on a dedicated drive library specific to the property.”

PkHome Kft, Hungary

In some areas where tailor-made and personalized products are more important, or for smaller companies, in addition to online and traditional offline methods, face-to-face encounters may be the most inspiring methods in product development.

Uses customers’ stories as inspiration - conversations with loyal customers

„New Vintage by Kriss uses customers’ stories as inspiration for jewellery pieces. „Each design has a story behind it, something that moved, encouraged or touched us.” The company uses customer-based innovation by having conversations with loyal customers about their wishes and expectations for new products. Kriss believes that owning a small company is an advantage for customer contact and customer-centric innovation as it makes direct contact to customers easier. She is often able to meet customers in person at her design studio or on sales trips. Being a small company means that Kriss can accommodate clients’ wishes better and sometimes, for example, can add a

specific symbol or engraving to her design. Often, designs come out of personal conversations with customers and the small size means that Kriss has the time to connect to different people on a more personal level.”

New Vintage by Kriss, a jewellery company, Estonia

Varkki also designs its products with customer input. and uses personal conversations with loyal customers for their innovation process.

Varkki, a sustainable fashion design company, Estonia

In person consultation, holding events and social media

„The company makes an effort to engage with its customers through several means, both online and in person. The company regularly holds events on a variety of topics that are of interests to its customers. The store also offers personalised makeup and cosmetics consultations in their store and, due to the pandemic, also online through video calls or photos. This allows them to provide the customers with the best possible shopping experience and product choice. The company also runs an online shop and tries to adjust their collection according to customer demands. A big part of their business strategy is using social media to interact with their customers. The company is very active on Instagram and regularly does live streams where they present new products and sales and interact with their customers. They also offer services such as customised advent calendars.”

Werte Freunde, Germany

Gathering customer feedback is not in itself an innovation. Another important step is when the received consumer opinions and experiences are built into product/service development or to make operational processes more efficient.

Incorporate customers feedback into product development

„We receive suggestions as to which products and aspects of the products are particularly important to the customers. Thanks to the direct and rapid feedback, these are actually incorporated into product development.”

mamiblock Shop, Germany

Incorporate customers feedback into product development

„One example of a product that was innovated or rather iterated through the input of customers are the beeswax wraps. After GAIA had received comments on their Instagram profile that the wraps size should be bigger repeatedly (10 comments), they actually changed the size.”

GAIA, (Trade) Germany

In the case of individual, personalized products, it is often the case that a product, proven form, design, or technical solution for a customer is later incorporated into the wider product range, using its experience.

From custom-made items to overall market

„The custom-made items often also make their way into the wider collection and are then sold as ‘regular’ products.

”

New Vintage by Kriss, a jewellery company, Estonia

From custom-made items to overall market

„As for churches, we must mention the church in Ipolynyék, Slovakia. A local painter had been instructed to paint the church, so the interior decorations were made by him. But the dome seemed to be a bit more difficult. So, I modelled it on a gym ball. Here we also carried out a 200m2 ceiling design. Incidentally, this work has brought a new product to be sold in the market soon.”

IFresco, Hungary

Solutions from different fields could be standardized and synthesized into one software and sold on the market

„The companies approached us for the purpose of process development and based on the experience gained together during this time, we recognized this market need, an innovative idea. Demand process solutions from different fields could be standardized and synthesized into one software and we can sell this to other companies in the market.

Steps of the customer-driven innovation process:

- 1. Situation analysis of previous clients, identification of processes*
- 2. Defining automated processes*
- 3. Define user requirements*
- 4. Based on the user requirement, the requirement of the new IT system is created*
- 5. Software development*
- 6. Sales of software supporting standardized processes*
- 7. Software adaptation for the new customer”*

FlexInform Kft., Hungary

Getting to know consumers and their behaviors, habits, needs, and preferences, and the increasingly conscious use of information is an important element of marketing strategy. A higher level of use of information collected from customers is the use of digital methods, such as data analysis, or the use of algorithms and applications to better identify consumers and their preferences and to personalize and target marketing communication tools.

Customer community and data analysis

„Through the various channels in place for customer feedback and innovation through customers, GALA has grown a sustainable customer community. With the help of data analysis, GALA knows exactly who the customers are and what kind of people are reached through their online marketing strategies. GALA has formulated a clear target group which helps them deciding on different marketing and customer strategies. Furthermore, they aim to keep their already established customers instead of focusing only on new customer acquisition.”

GAIA, Germany

Customer Solution and Innovation (CSI)” system

„The company established a “Customer Solution and Innovation (CSI)” system which is both a primary contact for customers and additionally also closely analyses and monitors customers’ needs and satisfaction. On top of that, the company has three innovation centres: one in Germany, one in Singapore and in the USA (Illinois) where customers can discover new trends and innovations and engage with them, but also present their own, personal challenges and issues. It is also important to highlight, that DHL is aiming to receive feedback and customer inputs at a variety of locations to enable a diverse customer group to be involved in the innovation process.”

DHL, Germany

ICT, customer loyalty program, CRM and data analysis

„ICT supports the marketing-oriented activities that come into play when the customer is not inside the store and that are used to communicate and let him know what is happening inside our stores. This is why we are committed to carrying out a customer loyalty program, through action on the checkout, CRM and data analysis, to give the consumer an integrated and personalized communication based on his interests.”

La Rinascente, Italy

Use of an algorithm based on the skin profiles and customers' feedback

„Nøie allows customers to subscribe to a customised skincare subscription service. Customers do the “Skin Test” and create a unique skin profile which is then analysed and matched with the best skincare routine and products from Nøie’s range. The company has accumulated data from over 60,000 people and has created an algorithm based on the skin profiles and customers’ feedback. Customers are further able to adjust their skin profile and thus their products and skincare routine any time and have the chance to get their money back should they be unhappy with the results. The company relies on customers to continuously provide them with data which is then reflected in the offered products and services. Most of the company’s communication with its customers is done online through its website and the personal customer profiles. „

Nøie, Denmark

Skin profile through a personalised online test

„The company offers a skin test where customers can find out their specific skin type through a personalised online test. In addition to their online skin test, the company also offers personal online chats on their website and video call consultations to provide each customer with the best personalised shopping experience and best suitable product.”

Manilla, Lithuania

Insights Forum – customer community - Big Data, CRM, and social media analytics

„DEWALT launched the DEWALT Insights Forum, which offers customers the opportunity to provide feedback and to submit ideas for products. The community has over 12,000 members and is made up of its partner Vision Critical, as well as, customers, partners, employees, fans, donors, and alumni. Using an Insight community, DEWALT gets rapid and ongoing feedback that allows them to make easier business decisions. More specifically, the insight community allows DEWALT to engage with customers in an ongoing dialogue that respects members individuality and their humanity, and which complements other data sources, like Big Data, CRM, and social media analytics.”

DEWALT, USA

Digitalisation and modernisation

„Due to the increased modernisation and digitalisation, the company can now continuously collect data on its customers and how they use its services which then helps with improvements and innovations.”

VR Group, Finland

Applications for learning about end-users

„Nowadays, there are plenty of suitable tools available during development to learn about end-user needs, of which perhaps the following 3 applications are what we come across often in our projects:

***Zeplin** is a designer tool that facilitates group work within the company between the designer and the development team, as well as common processes and communication with the customer (viewing visuals, commenting). The finished design plans can be placed in the Zeplin, which is easy to comment on, so even selected end-user groups can be easily involved in the design process.*

***Figma** is also a designer tool whose best function is to allow live, real-time collaboration with a selected group of customer representatives and even end users, thus speeding up and facilitating the implementation of appropriate user needs and opinions during development.*

***Invision** is the perfect tool for putting together validated design elements to build a workable MVP (Minimum Valuable Product) that allows you to initiate approval processes and test finished user interface designs for either the customer or end users without starting application development. would be.*

W.UP, Hungary

There are companies that use multiple methods to engage their consumers, combining offline and online methods. Although no general conclusions can be drawn, the results of our survey show that more complex, organized solutions for customer involvement are typically used by larger (primarily large and medium-sized companies) and more mature companies. Also, an important question is whether companies categorize their customers based on their needs or expertise when involving them in the innovation process. This is an important issue because different types of feedbacks and experiences can be incorporated in the case of different customers. Different kinds of information can be obtained from lay customers and from professional users in the product development process. Both kinds of information are extremely useful.

The widest range of tools for consumer involvement has been observed in the practice of one of Norway's leading food companies. In addition to surveys, the methods of focus groups, laboratory, and home testing, among others, are used. In addition, the categorization of consumers can be observed. They differentiate between lead users and professional users from end-users in their involvement in innovation processes. It is important to emphasize that the company also realizes significant and continuous benefits through the introduction of customer-centric innovations (see later). In addition to market (domestic and international) and operational advantages, they also achieve remarkable results from a financial point of view.

More complex, organized solutions for customer involvement - combination of the methods - Categorizing consumers based on their needs and expertise

“In an industrial enterprise like this, there are a number of fairly common methods used to obtain information about customers and markets. Surveys and focus groups are often used to get feedback from customers. Perhaps more interesting is the combination of these methods with direct involvement of users, for example:

focus groups where participants get to taste and evaluate new products, and where they can also be asked to explore new products in use in the kitchen

taste panels in sensory laboratory for scientific testing of users' response to different product variants

survey / home testing of new products to learn how consumers use new products, and how the product fits into the consumer's cooking and eating habits

In addition, professional and industrial partners and customers are often involved in several phases of the innovation process:

Chefs, as an important group of «leading users», from the Department of Gastronomy (now the Culinary Institute) and from various renowned restaurants, as well as experts from Matforsk and the university community at Ås, are often used for advice and participation in product development.

Industrial partners and customers, from retail chains to industrial producers of ready-made food and other foodstuffs, often participate in the formulation of new needs and in the development of new concepts, products and technical solutions.”

Data collection about customers in case a project was done in several rounds. Early in the project, the team conducted a study trip to potential market regions. Italy, Belgium, Korea, Japan, etc. were visited to learn about their food cultures, market and distribution structures, etc. Later, when the technology was better developed, they conducted more conventional market studies, using focus groups and home testing of the product in a number of Norwegian home. Finally, a number of marketing and sales promotions provided important learning in direct interaction with potential customers.”

TINE, Norway

In addition to the practice of the Norwegian company, we can also highlight the example of a Hungarian software company and a medical device manufacturer company in terms of combining and applying the methods in many ways. An interesting moment in the case of a software company is that the head of the company highlighted as an important aspect that their own employees look at their products from the customer's point of view and use their own needs in product/service development, as they can be considered customers. They themselves use these services.

Combination of methods - working team as customers

„We use several methods to involve customers, depending on the expectations of our customers. Most often, we use UX research methods, which are performed either by our company or by the customer, otherwise by a third party. During the developments, in addition to the research, we also got our own and our acquaintances' experiences, on the basis of known user market knowledge, and on opinions available on freely available social media interfaces. Also a few examples without claiming completeness:

UX Research: *Knowledge of the operation of the market, users and competitors, collection of information and adaptation of this information in the design phase. Examples of solutions used include user interviews based on online research, ethnographic research and market research methodologies, the main purpose of which is to understand the real needs and difficulties of end users during design, to understand their thinking and to be able to design a solution to them.*

Service Design: *Optimizing the usefulness of the service for the user by involving the customer. This optimization feeds on UX research, user reviews, and marketing research to deliver the most optimal solution for the customer. Solutions used include service scope and customer journey map.*

User Experience Design: *Maximize the usability of the service for the user, with the goal of achieving a perfect user experience that is mapped based on UX research. In each case, the completed sub-plans are tested with different user groups, the results of which are continuously traced back during the development process. Examples of solutions used are information architecture, user personas and usability testing.*

User Interface Design: *User Interface (UI) Design - Facilitate the user-friendliness of the service by using the appropriate design elements based on the above research and current trends. Solutions used include emotion design and design guideline.*

In addition, it is important to highlight the use of ideas within your own team as customer needs. We are all users of such applications in our private lives, so ideas within a team are customer-side innovations, with the

difference that perhaps our ideas and opinions are not typical customer opinions, as we look at these products with a slightly different eye due to our work.”

W.UP, Hungary

Combination of methods - Categorizing consumers based on their expertise

„We conduct a direct clinical trial involving partners who use the product and services. These data are collected under the supervision of an external CRO (Clinical Research Organization). The CRO plans of what factors (complications, implant loss) we will take into consideration during the research. Then a bio-statist will determine how many people need to be involved in the process. The research leader collects the data and writes the research report. If there are any problems, we will incorporate the solution into the improvements. Doctors are approaching the company with the intention of development, they have an idea and would like us to implement these, which will happen based on the following process.

- 1. Defining user requirements*
- 2. the system requirement is created based on the user requirement (technical-engineering data)*
- 3. product design*
- 4. prototype production + verification*
- 5. series production + verification*
- 6. validation before the product goes on the market.*

Methods used to involve consumers:

focus group, in-depth Interview, brainstorming, customer satisfaction questionnaire, product lifecycle monitoring, simulation, Collaboration with external laboratories to perform tests, recording a complaint, recording unexpected events, gaining application experience, equivalence test.”

Bionika, Hungary

Conclusions and recommendation notes

Based on the questionnaire survey and the results of the best practices, we can conclude that small and medium-sized enterprises operating in different fields use very different ways to involve customers in customer-centric innovation. Relatively simpler engagement methods are common, such as questionnaires, surveys, group or in-depth interviews, product career tracking, social media tools, various loyalty programs, or community-based experience gatherings. This is supported by the fact that both in the questionnaire survey and in the collection of best practices, more than fifty percent of the responding companies use these methods. While more serious customer involvement methods used for customer innovation, such as simulation, living labs, diary studies, are used by only a few companies, where the scope of activity is also based on more advanced technology.

We also tried to draw conclusions whether a difference can be found in the customer engagement methods based on the scope of activities of the companies. We were able to identify five main groups of best practices among small and medium enterprises such as construction, IT services, manufacturing industry, services, trade. But there is no significant difference in the field of customer involvement methods used. In each area of activity the methods used for customer involvement appear in different forms and mixed. There were about 6 SMEs in the field of IT services, manufacturing industry, services, where more serious methods also occur than in

Observations (of customers in daily life), Field test (testing products and/or services in real life circumstances), Living labs (workshops with customers in company’s laboratories), Simulations, visualizations.

Field of activity	Main used methods for involving customers
Construction industry	Interviews, loyalty program, building community
IT services	Surveys, questionnaires Interviews, Focus groups, Observations (of customers in daily life), Field test (testing products and/or services in real life circumstances), Living labs (workshops with customers in company’s laboratories)
Manufacturing industry	Surveys, questionnaires Interviews, Focus groups, Observations (of customers in daily life), Simulations, visualizations, Living labs (workshops with customers in company’s laboratories) Diary studies (target groups write about product and/or service experiences in a pre-structured online diary) social media tools, loyalty program, building community
Services	Field test (testing products and/or services in real life circumstances), Surveys, questionnaires, Interviews, Focus groups, Observations (of customers in daily life), Simulations, visualizations, Living labs (workshops with customers in company’s laboratories), Diary studies (target groups write about product and/or service experiences in a pre-structured online diary), social media tools, loyalty program, building community
Trade	Interviews, Field test (testing products and/or services in real life circumstances) social media tools, loyalty program, building community

- Customer-centric innovation can be applied for companies independently from size. There are many ways to involve customers in innovation processes, from simple to more complex, more expensive solutions. Even the smallest companies can find the right and accessible methods.
- Customer-centric innovation can be successfully applied in almost any field. From manufacturing companies to service providers, we have found many examples of customer engagement and successful innovation. In high-tech sectors, or in areas where there is greater importance of tailor-made products, customer-driven innovation can be created easily.
- There are several options for mapping customer opinions/experiences/needs. The use of digital solutions, social media platforms, and data analysis tools greatly facilitates the collection and processing of customer feedback.
- Consciously learning about customer feedback and accurately identifying customers and their needs is helpful in developing a marketing strategy and product innovations.

- Getting to know customer feedback is not a customer-centric innovation itself. The knowledge and experience gained in this way must be integrated into the process of product development to be able to talk about innovation.
- The lack of motivation and interest of customers in the field of feedback makes it difficult to create customer-centric innovations. It is advisable to increase the willingness of customers to provide feedback and to create motivation. This could be, for example, the creation of a "sense of community", the impact on customers' emotions, or the creation of customers' financial interest, for example with coupons, discounts, loyalty programs, and idea competitions.
- Through customer-oriented innovations, companies can realize several benefits, that comes directly from the market position and operational efficiency, which also provide financial benefits to companies in the longer term.
- SMEs have little or no knowledge at all regarding customer-centric innovation and the digital opportunities that support it. Based on this, there is a great need for training that develops the knowledge and skills of SMEs in this field.
- From a management point of view, there is less bureaucracy for SMEs, quick decision-making and risk-taking due to entrepreneurial management, and an organic leadership style. At the same time, entrepreneurs often do not have formal management expertise, in which trainings like ours can be the solution.
- SMEs are fast and efficient in communication, have good informal contacts, but may lack time and resources, which may prevent them from developing an appropriate science and technology network. The creation and development of these types of networks and the involvement of SMEs can go a long way in overcoming time and resource problems.
- SMEs can respond quickly to the changing market requirements, they can effectively fill market gaps close to their activities through their innovations, while at the same time facing barriers to starting a foreign business due to high costs. The solution for this problem could be the development of (European) level support system for foreign market entry.
- The innovation advantage of SMEs is that they can employ technical staff in several company departments, but at the same time they have often lack of core technical expertise (it may be necessary to use external technical specialists) and miss the benefits of diversification of research and development.
- From financial aspect, lower innovation costs and higher R&D efficiency are possible for SMEs. At the same time, they face the risk of not being able to spread the high financial risks of innovation over several areas of activity, the difficulty of accessing external capital and the high risk of the cost of capital.

- SMEs can boldly take advantage of the sub-strategy (growth strategy based on specialization) (within a differentiation strategy), but growth can mean a difficulty by the use of external capital and entrepreneurs are often unable to manage growth properly.
- A major advantage for SMEs is that the regulations that apply to them are often less strict, but nevertheless, they are often unable to cope with the complexity of regulation, high adaptation and patenting costs mean difficulty.
- Many government programs support the innovation activities of small and medium-sized enterprises, although access to government programs and access to information can often be difficult. Due to the high costs, they may also have difficulties with cooperation programs.
- One of the key innovation benefits of SMEs is their ability to learn quickly, adapt and develop routines.
- The generally simple and centralized, organic form of SMEs should also be considered among the innovation benefits.
- SMEs can be attractive partners for innovation-oriented joint ventures/strategic alliances, especially if they are at the forefront of technology. However, the scarce management experience and subordinate position of power in cooperation with large companies are disadvantages in this respect.

Methods for engaging consumers in customer-centric innovations

As part of the project "Digital methods, toolbox and trainings for increasing customer innovation in SMEs" (ICInSMEs), research and surveys were conducted in the project countries. These led to the following results with regard to methods for engaging consumers in customer-centric innovations.

We sought answers to what methods companies use to engage their customers in their innovation processes. The following methods were included in the response options:

- Surveys/questionnaires
- Interviews
- Focus Groups
- Brainstorming
- Observations (customers are observed in daily life personally)
- Test Groups
- Field Test (testing products and/or services in real life circumstances)
- Simulations and visualizations
- Living Labs (Cooperation with customers in company's laboratories and workshops)
- Diary Search: (target groups are asked to write the product and/or service experiences in a pre-structured online diary)
- others

37 evaluable answers were received to this question from the 46 companies involved in customer-centric innovation (8 large companies, 5 medium-sized companies, 6 small companies, 27 micro-companies). The most common method of involving customers is conducting interviews, surveys and questionnaires. (Figure 13) More than half of the respondents (21 and 19 respondents) use these methods, which are relatively easier to implement and better known, especially among SMEs. Besides, observing customers in their daily lives plays an important role in supporting innovation processes. 43 % of companies involved in customer-centric innovation (and answering this question) use the observation method. Brainstorming was indicated by more than a quarter of respondents (27%). The same proportion is included in case of the Field Test, in which products and/or services are tested under real conditions. Seven companies (19%) use Test Groups to explore and incorporate their customers' opinions and experiences. In the case of the most common methods, the sectoral classification of companies shows a varied picture, no clear conclusion can be drawn regarding the specifics of the sector. A similar proportion of users came

from the industrial-construction and commercial-service sectors. We did not find any significant differences in frequently used methods in terms of company size too.



Figure 13 Methods used for involving customers in innovation processes

Less commonly used methods of customer engagement include (Figure 13):

- Living Labs (Cooperation with customers in the company’s laboratories and workshops): four companies use the method to engage customers. Two companies are active in the manufacturing industry, two in the field of education. These are companies operating in four different countries. Three companies have more than 250 employees and the fourth company has 10 to 50 employees. Apparently, this method is typical for larger company sizes. Each company has been operating for more than 5 years. All four companies sell in the B2B market, B2C customers have three companies. Two companies are also active in the B2C, B2B, and B2G markets.
- Focus Groups: three companies use the method to engage customers. One company is active in the manufacturing industry, one in the field of education, one in the field of other services. These are companies operating in three different countries. Two companies have more than 250 employees and one company has less than 10 employees. Apparently, this method is also more typical for larger company sizes. All three companies have been operating for more than 5 years.

- Simulations and visualizations: Only two companies use this method to engage customers. One company is active in the construction industry, one in the field of education. These are companies operating in two different countries. One company has more than 250 employees and one company has 51-250 employees. Apparently, this method is also more typical for larger company sizes. Both companies have been operating for more than 5 years.
- Diary Search: (target groups are asked to write the product and/or service experiences in a pre-structured online diary): Only one company uses this method to engage customers. The Danish company is active in the field of education. The company has more than 250 employees and has been operating for more than five years.

Although no general conclusions can be drawn, the results of our survey show that more complex, organized solutions for customer involvement are typically used by larger (primarily large and medium-sized companies) and more mature companies.

Fourteen companies also identified three or more ways to engage their customers. Most of them (ten companies) operate in the service sector. Companies in the field of education (six companies) should be highlighted in terms of the variety of methods used.

Methods for engaging consumers in customer-centric innovations by countries

The frequency of the methods application was examined by country. 4 countries (Germany, Hungary, Poland, and Denmark) were chosen from which the most evaluable responses were received. The data of the previously mentioned countries were compared to explore whether there are similarities or significant differences between companies in each country.

Only those companies were examined that have been involved in customer-oriented innovation and have provided answers to this question. Thus, Germany (five), Hungary (eleven), Poland (six), and Denmark (six) are included in the analysis.

The most commonly used methods are marked in green, the medium frequently used methods are marked in yellow, and the less frequently used methods are marked in red. Darker colours have the highest frequency for green and red for the lowest frequency. (Table 7)

Table 7 Methods for engaging consumers in customer-centric innovations by countries

	Denmark	Germany	Hungary	Poland
Interviews	50.0%	60.0%	50.0%	33.3%
Surveys, questionnaires	50.0%	80.0%	25.0%	66.7%
Observations (of customers in daily life)	33.3%	60.0%	66.7%	33.3%
Brainstorming	50.0%	0.0%	8.3%	50.0%
Field test (testing products and/or services in real life circumstances)	0.0%	60.0%	41.7%	0.0%
Test groups	33.3%	20.0%	8.3%	16.7%
Living labs (workshops with customers in company's laboratories)	16.7%	20.0%	0.0%	0.0%
Focus groups	16.7%	20.0%	8.3%	0.0%
Simulations, visualizations	16.7%	0.0%	0.0%	0.0%
Diary studies (target groups write about product and/or service experiences in a pre-structured online diary)	16.7%	0.0%	0.0%	0.0%

The results are similar in each country as we saw in the overall sample. The most common used methods are Interviews, Surveys, Questionnaires, and Observations. The least commonly used methods are Living labs (workshops with customers in the company's laboratories), Focus groups, Simulations, Visualizations, and Diary studies.

Remarks regarding countries:

- In Denmark, in addition to Interviews and Surveys, Questionnaires, the use of Brainstorming is the most popular. Test groups are also given more weight than in other countries and in the overall sample. However, no company indicated the Field test method for customer involvement. Denmark had the most varied range of methods used to engage customers.
- For German companies, the three most common methods are the same as in the whole sample. However, the higher rate of Field test use among respondents is noteworthy.
- In case of Hungarian respondents, the observation of consumers in their daily lives received the highest proportion. This was followed in the order of the application by the interviews and

the Field test. Surprisingly, Surveys, questionnaires, which are popular elsewhere, are not among the most common solutions. More complex, organized solutions (Living labs, Simulations, Visualizations, and Diary studies) are not typical for responding companies.

- For Polish companies, Surveys, Questionnaires, and Brainstorming methods were the most common methods to engage customers. Overall, Polish respondents indicated a narrower range of methods used.

Low sample sizes are not suitable for drawing general conclusions, they are only valid for the analysed sample.

Analog methods of customer-centric innovation

Before digitization appeared, companies were already using methods to involve customers in the development of products and services. The following chapter provides an overview of a selection of these methods. Due to the diversity of existing methods, only a selection of them can be presented in this report. As explained later, the methods presented pursue the goal of initiating a change from the question "*What do customers want?*" to "*What should the products do for the customers?*" (Leavy, 2017; Ulwick, 2010).

Lead-User Method:

The lead user method is based on opening up innovation processes of companies in order to promote the development of products and services through the targeted collection of external information. In this process, lead users are specifically sought who can be characterized as advanced users or users. Lead users deal intensively with problems in a field of activity for which the market offers no solution. In order to successfully integrate lead users, it should be ensured that the needs of the lead users are highly likely to mirror the needs of the rest of the market at a later stage. All in all, it can be summarized that lead users have needs that will be found in the market in the future. Lead users often become active themselves and work out solutions for product innovations that meet their needs (Wagner & Piller, n. d.).

Experiments:

Experiments serve to involve different groups and users in the collection of ideas with the help of a concrete question. The results obtained in this process are compared with each other later on. Often, different groups are formed, consisting of experts in the field on the one hand and normal users on the other. This makes it possible to draw comparisons between the group participants and to combine professional and general knowledge and to consider different points of view. This combination of knowledge and application areas generates new ideas that can be incorporated into the development of products and services (Edvardsson et al., 2010).

Living Labs:

The Living Labs method is used to take customers' ideas, experiences, knowledge and everyday needs as a starting point for innovations. In this context, spaces are often created that are reminiscent of the customer's home so that companies can gather impressions from the real world. In this context, situations are simulated that promote customer-centric innovations (Edvardsson et al., 2010).

Customer Group involvement:

Within the framework of this method, regular meetings with customer groups are arranged in order to learn to understand the needs and application areas of the customers and to jointly develop solutions for existing problems. Here, it is essential to determine the group composition in a targeted manner in order to be able to guarantee the marketability of the product or service to be developed. This method makes it possible for companies to have customers accompany the innovations over a long period of time. Products and services can thus be optimized through recurring design and test phases (Edvardsson et al., 2010).

Outcome based interviews:

This method is used to identify customer needs through targeted interviews. The focus here is on gathering insights into what customers want to achieve with a product or service and thus identifying its purpose. With this method, too, it is particularly important to involve a smaller, targeted group of customers in the innovation process rather than a large number of customers who do not reflect the needs of the market. It also makes sense to use trained personnel in order to generate the highest possible information content in the interview results (Edvardsson et al., 2010; Ulwick, 2010).

Digitalization – new opportunities for customer-centric innovation

Digitalization represents one of the key challenges of our time and is associated with numerous consequences for today's economic players. In addition to the provision of a suitable infrastructure at the macro level, the use of technology for the implementation of innovative business models, entrepreneurial processes, and the shortened communication channels in the context of digitization poses a challenge for many companies (Breuer, 2019). A growing digitization results in the constant availability of countless pieces of information (data), which must be collected, classified, and used efficiently and in a targeted manner according to individual interests. Furthermore, digitalization is also ensuring that spatial distances lose their relevance, which is rapidly increasing international competitive pressure for SMEs. Regional companies increasingly find themselves in competition with international monopolies (Breuer, 2019), leading to calls for innovation and individualization of products. The ability to incorporate digital tools into daily work means that entrepreneurial innovations are often initiated or implemented with the help of digital technologies (Accenture, 2015). To provide insight into a selection of existing methods, this report will revisit this topic in Chapter 3.

To connect digital technologies and customer-centric innovation, it can be stated that a globally connected world by digital technologies has changed the role of customers radically over the past

decades (Schaubmair, 2017; Steinhoff & Breuer, 2014). Customers have gone from a passive, receiving role to a more active, demanding one in which they are “an active co-designer” (Steinhoff & Breuer, 2014). Eric von Hippel was one of the firsts to realise that companies’ profits’ increase dramatically compared to their competitors when they engage in more customer-centric innovation activities (Schaubmair, 2017). Not only does customer-centric innovation improve customer satisfaction, but also it also improves the “product quality, [reduces] risk, and [increases] market acceptance” (Zajkowska, 2017a). Innovation itself is about collaborative learning and working to create something (Edgeman & Eskildsen, 2012).

To further define the term, customer-centric innovation is part of the open innovation philosophy, meaning that the innovation process happens with input from inside and outside of the company to develop new products or services. Research has shown that it is vital to involve the customer at all stages of the innovation process (e.g. Steinhoff & Breuer, 2014; Zajkowska, 2017). In order to do this properly, the company has to know its customers well and gather as much knowledge on their lives, work processes, value chains and value systems, in other words the culture they are involved in (Edgeman, 2012; Schaumair, 2017).

Furthermore, customer-centric innovations increase both customer benefits and customer loyalty. Because customers are actively involved in the design of products and services and have them shaped according to their needs, the likelihood that these customers will remain loyal to the company in the long-term increases. Trust relationships are thus strengthened, and relationships are built (Hofbauer, 2013).