Output 03

Train the Trainer Program Consulting & Qualification Digitization

Partner

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Language

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Table of content

I. Project Summary and Introduction

On average, SMEs are less innovative than large companies, as they have limitations due to more limited internal resources (EC, 2019a). Especially in Eastern European countries, SMEs have very low innovation activity and there are large differences between SMEs and large companies. In the field of customer innovation, SMEs find it particularly difficult to innovate. Meeting real customer needs is the core factor for successful innovation management, for generating customer-oriented business ideas and innovative concepts (von Hippel, 2005).

SMEs do not have the time and resources to receive feedback and ideas from their customers. And when they do find the time, it is difficult to process the information and turn it into valuable solutions. A holistic approach to customer-centric innovation is complex and requires changes at all levels of a company. However, digitization and new media are now opening up far-reaching opportunities to make full use of customer-centric innovations in SMEs as well, thus strongly promoting innovative strength and competitiveness (Robra-Bissantz, 2017). These technologies and the opportunities they offer have so far been little known in SMEs and are only used by very few SMEs. They lack information, experience, knowledge and skills on instruments, methods and procedures as well as on the use of digital technologies to acquire, process and realize customer innovations.

Against this background, the project pursues on a broad regional basis the objective of enabling and sup-porting SMEs to exploit their customer innovation potential and thus to strengthen the productivity and competitiveness of SMEs, to secure existing jobs and to create new ones. The following main activities will be carried out to achieve the objectives.

a) In 13 countries, analysis and comprehensive investigation of best practices on how SMEs generate, process and realize customer-centric innovation approaches and which digital technologies they can use doing so. The best practices obtained will be processed, transferred to SMEs in the context of training and consulting, and supported in their implementation in the companies.

b) Development of a toolbox with instruments, methods and procedures for the realization of customer innovations in SMEs.

c) Through the development of two specific training and coaching programs, SMEs gain digital skills and are enabled to continuously realize comprehensive customer-centric innovations. The learning takes place mainly at the workplace and at the same time includes individual company development projects, so that digital technologies are already used and corresponding innovations are realized during the further train-ing.

d) Comprehensive qualification of teachers and consultants of SMEs.

The qualification, consulting and support programs are carried out by chambers, which, as central SME supporters, have direct access to SMEs and, with their training and technology centers, also have corresponding capacities. However, many teachers and consultants lack the knowledge and skills to qualify and advise SMEs and their staff in the application of digital technologies and in the acquisition, processing and realization of customer innovations at a high-quality level. Therefore, two specific train the trainer pro-grams for teachers and consultants are being developed, which will be implemented and permanently run by 18 colleges and universities from 9 countries. These programs are:

a) strengthening and promoting the knowledge and skills of teachers and consultants on digital technologies on the one hand and on the realization of customer-centric innovations on the other hand.

b) constantly providing well qualified teachers and consultants on a broad regional basis.

The developed instruments, digital models, educational and support programs will be tested and evaluated under different national conditions in several countries and implemented by all project partners. A continuation of the work after the end of the project with an ongoing implementation of the educational and support programs is secured, including financing.

The project is carried out by eight experienced partners (chambers, other institutions of vocational training and universities) from Denmark, Germany, Poland and Hungary with different levels of development and conditions. The transnational project approach enables learning from each other, identification and trans-fer of best practices and joint development work.

All results of the project will be transferred to 70 chambers, SME associations and colleges/universities from 13 countries, which will receive implementation advice and will be involved in the project work as associated partners from the beginning of the project.

The following activities were carried out to produce Output 03 Train the Trainer Program Consulting & Qualification Digitization.

1. Development, consultation and coordination of a curriculum
2. Development of teaching materials and presentations
3. Development, consultation and coordination of an evaluation concept
4. Practical testing of the training with project staff, trainer and SME consultant
5. Evaluation of the practical testing and preparation of an evaluation report
6. Revision and finalization of the curriculum based on the evaluation results

The following results are listed below:

- Chapter II: Complete curriculum of the Train the Trainer program
- Chapter III: Implementation report of the practical test
- Chapter IV: Evaluation concept
- Chapter V: Evaluation report

The extensive teaching materials and presentations are listed in Chapter III and can be found on the project website https://ci-smes.eu/.

Work Package 4
Train the Trainer Program A
Digitization

II. Concept and Curriculum

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Introduction – about the project "ICIinSMEs"

This Training program is developed within the framework of the EU Program *Erasmus + Key Action 2: Cooperation for innovation and the exchange of Good Practices* funded project **"Digital methods, toolbox and training for increasing customer innovation in SMEs"**. (ICIinSMEs, Project NO 2020-1-DE02-KA202-007397).

The project aims to strengthen the innovation capacity of SMEs in Eastern Europe. In the frame of the project, two training programs for SMEs are developed, one focusing on the application of digital skills and technologies and the other on customer-centric innovation. Through the development of two specific training and coaching programs, SMEs gain digital skills and are enabled to continuously realise comprehensive customer-centric innovations.

These programs are organised by chambers and their training and technology centres, which have direct access to SMEs. To teacher and consultants qualify and advise SMEs at a high-quality level in the application of digital technologies and the acquisition, processing and realisation of customer innovations, two trains the trainer programs for teachers and consultants are developed to help trainers master the curriculum using modern teaching methods. The goal of these programs is a comprehensive qualification for teachers and consultants for SMEs.

Concept and Curriculum of the Train the Trainer Program A

The curriculum of the Train the Trainer Program A focusing on Digitalization is based on the results and experiences of the project, supplemented with modern teaching methods and case solutions. The project results are as follows:

An empirical study was conducted among SMEs which, on the one hand, underpinned the legitimacy of the planned training courses and, on the other hand, incorporated the experience gained by them into the curriculum of the training courses. The first part of the empirical research consisted of a questionnaire survey in which the awareness and diffusion of customer-centric innovations in SMEs, as well as the use of digital solutions that support their implementation, were measured. In addition to the questionnaire survey best practices were collected and investigated, on how SMEs generate, process and realise customer-centric innovation approaches and which digital technologies they can use doing so. A toolbox with instruments, methods and procedures for the realisation of customer innovations in SMEs was also developed. The teaching material of the training programme for SMEs "Digital competence" is also built in the TTTP-A. Best practices from training institutions serve with a useful contribution to the concept and material design.

As a starting point for this curriculum, it is worth describing what we exactly mean by Customer-centric innovation.

"Customer-centric innovation describes a change from innovating for customers to innovating with customers. Therefore, the customer takes an active role in innovation processes and becomes the

primary source of ideas to initiate innovation activities. By integrating the customer-centric innovation philosophy, companies open their research and development activities, meaning that the innovation process happens with input from inside and outside of the company. Customers are involved in all stages of the innovation process." (Desouza et al. 2020; Steinhoff & Breuer, 2014; Zajkowska, 2017)

The Train the Trainer program includes the following elements

- Presentation, consulting and mediation aspects of the content of the SME specific training programme "Digital Skills"
- Presentation, advice and mediation aspects of the various digital technologies, namely
    - Best practices in the use of digital technologies
    - Digital technologies for the realization of customer innovations
- Presentation, consulting and training of the coaching process
- Pedagogical issues

Teaching methods

The training programme consists of a combination of presentations, consultations and discussions in plenary, work in small groups and role-plays, case studies, and examples.

Teaching materials

PPT presentations, case studies, examples, best practices, question guides, checklists

Objectives, Target Groups and Duration of the training

This Training is a three-day train the trainer program for teachers and consultants of SMEs, who receive knowledge, skills, and pedagogy which enable them to

- train employees of SMEs to successfully use digital technologies in the acquisition, processing and implementation of customer innovations,
- transfer digital technologies to SMEs and provide sound advice on implementation.

The Train the Trainer Program aims

- strengthening and promoting the knowledge and skills of teachers and consultants on using digital technologies in the acquisition, processing and implementation of customer innovations,
- providing them with modern teaching methodologies.

Target Groups

The target group of the program is lecturers and consultants of SMEs from (or delegated by) chambers or other institutions.

The Train the Trainer program does not include a final examination, the participants receive a qualified certificate of participation.

Duration of the training

Three days of training, from 09:00-17:00 all-day

Programme and content

Module 1: Welcome and ice breaker activity

- Greetings
- Objectives and execution of the training - Introduction to Train-the-Trainer Program
- Self-presentation of the participants
- Determination of the participants' previous knowledge

Module 2: The importance of digital capabilities for SMEs

- Trends driving SMEs' digital transformation
- Digital skills
- Digital marketing

Module 3: Digital tools in business operation

- Applied info-communication tools and technologies supporting business processes in SMEs
- Digital communication channels used for communicating and collaborating with customers
- Digital tools supporting customer-centric innovations.
- The role of digital tools in Customer-centric innovation in SMEs - Experiences of a survey and best practices

Module 4: Criteria for a good training - important factors for success.

- How to build an effective training? ADDIE Model
- Specialities in training for SMEs.
- Generation gap in education.
- Best Practices in the Transfer of Digital Skills and Technologies used in Customer-centric Innovations to SMEs - Experiences of Best Practices from Training Institutions.

Module 5: Modern teaching methods, Effective Teaching and Training Techniques

Module 6: Digital tools for teaching and learning

Module 7: Project task on topic Digitalization supporting Customer-centric Innovations in SMEs

- Introduction to the project task
- Group work
- Presentation of participants or groups

Schedule

Program for the Train the Trainer Program A „Digitization" 3 days training

1st Day –Digitalization, Digital tools in business operation	
09:00 – 09:30	Module 1 - Welcome and ice breaker activity, Introduction to Train-the-Trainer Program, self-presentation of the participants

09:30 – 10:30	Module 2 – The importance of digital capabilities for SMEs
10:30 – 11:00	**Coffee break**
11:00 – 12:30	Module 3 – Digital tools in business operation - Applied info-communication tools and technologies supporting business processes in SMEs
12:30 – 13:30	**Lunch**
13:30 – 15:00	Module 3 Digital communication channels used for communicating and collaborating with customers. Digital tools supporting customer-centric innovations
15:00 – 15:30	**Coffee break**
15:30 – 17:00	Module 3 The role of digital tools in Customer-centric innovation in SMEs - Experiences of a survey and best practices
	Dinner and exchange of experience (optional)

2nd Day – Modern teaching methodology	
09:00 – 09:30	Welcome day 2
09:30 – 10:30	Module 4 Criteria for a good training - important factors for success. How to build an effective training? ADDIE Model
10:30 – 11:00	**Coffee break**
11:00 – 12:30	Module 4 Specialities in training for SMEs. Generation gap in education. Best Practices in the Transfer of Digital Skills and Technologies used in Customer-centric Innovations to SMEs - Experiences of Best Practices from Training Institutions.
12:30 – 13:30	**Lunch**
13:30 – 15:00	Module 5 – Modern Teaching Methods
15:00 – 15:30	**Coffee break**
15:30 – 17:00	Module 6 – Digital tools for teaching and learning
	Dinner and exchange of experience (optional)

3rd Day – Project task	
09:00 – 09:30	Welcome day 3
09:30 – 10:30	Module 7 – Introduction to the Project task on topic Digitalization supporting Customer-centric Innovations in SMEs
10:30 – 11:00	**Coffee break**
11:00 – 12:30	Module 7 – Independent work, or working in groups
12:30 – 13:30	**Lunch**
13:30 – 15:00	Module 7 – Presentation of participants or groups
15:00 – 15:30	**Coffee break**
15:30 – 17:00	Summary and conclusion of the Train-the-Trainer

Main Sources:

- Monika Zajkowska, Melanie Mesloh: Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs, 2021
- Ágnes Horváth, Noémi Hajdú, László Molnár, Anett Tóthné Kiss, Klára Szűcsné Markovics, Erika Szilágyiné Fülöp, Ádám Bereczk: Customer-centric Innovation in SMEs. Results of an Empirical Research, 2021
- Ágnes Horváth, Noémi Hajdú, László Molnár, Anett Tóthné Kiss, Klára Szűcsné Markovics, Erika Szilágyiné Fülöp, Ádám Bereczk: Experiences of Best Practices in the use of digital technologies supporting customer innovations by SMEs, 2021

Module 1: Welcome and ice breaker activity

- Greetings
- Objectives and execution of the training - Introduction to Train-the-Trainer Program
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Module 2: The importance of digital capabilities for SMEs

- Trends driving SMEs' digital transformation
- Digital skills
- Digital marketing

Reasons for the development of digital skills in SMEs

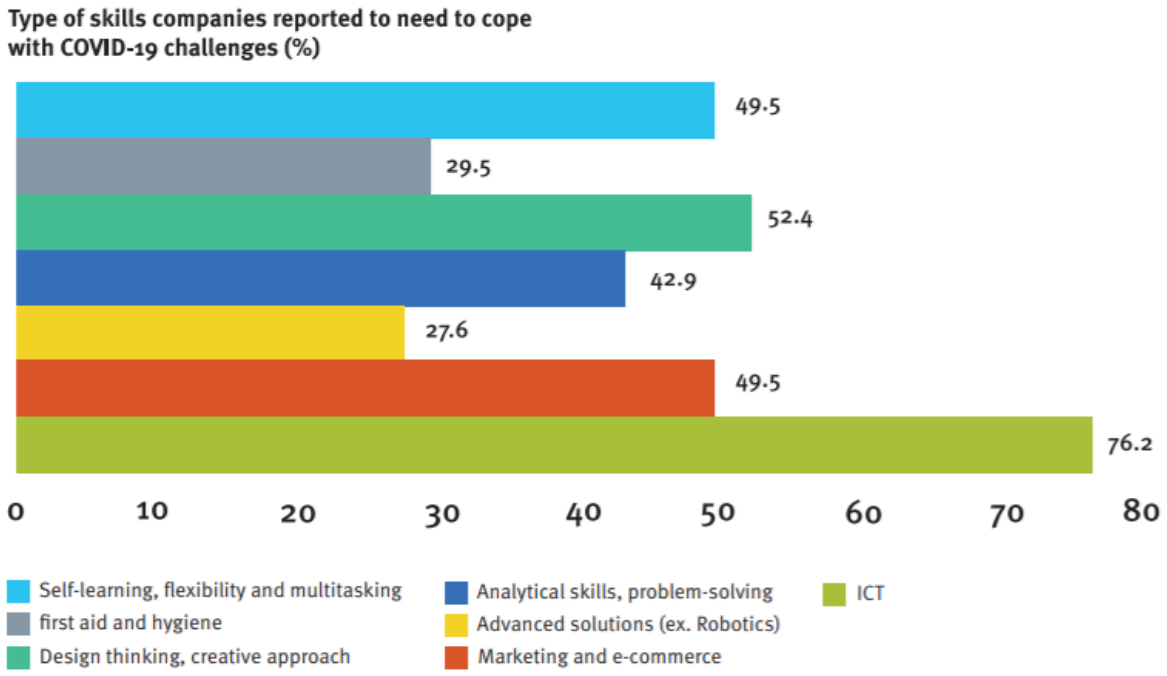
Digital skills have become increasingly important in both our working and personal lives in recent years. The Covid 19 epidemic that has defined our last two years has played a particularly important role in this. During this time, countries were forced to shut down operations for extended periods of time, and many jobs shifted to home offices and telecommuting. During this difficult time for everyone, the use of digital technologies kept society and the economy running, the use of ICT tools played an important role in crisis management of companies and kept them running.

The Learning and Knowledge Development Facility (LKDF) of the United Nations Industrial Development Organization (UNIDO) and the European Training Foundation (ETF) (2020) conducted a study on whether the need for skills training is changing because of the COVID -19 epidemic according to companies.

As part of the research, 334 companies responded to the questionnaire, of which 32% were large companies and 68% belonged to the SME sector. Geographically, Asian, and African countries were most represented, but there were also several respondents from Western Europe, Eastern Europe, Southern Europe, and Northern Europe. 41.6% of companies said that meeting the challenges of Covid-19 would require new skills among employees, while 42.5% said they would not need new skills.

According to respondents 'COVID -19 the view of what core skills are needed has not changed, but the trend towards digitalisation has increased. The skills that businesses will need in the future are no different from those they needed before COVID -19. Information and communication technology (ICT) and its application, especially in e-commerce and marketing, as well as cross-cutting skills such as design thinking, creativity, analytical skills, and multitasking potential remain the main concerns of companies looking to the future' (UNIDO 2020, pp.6.).

It can be seen that the majority of respondents (76.2%) who say that new skills are needed consider it important to develop ICT skills in their companies. Developing these skills was cited as a necessity by most. This is followed by design thinking and creative approaches, marketing and e-commerce, self-learning and multitasking, analytical skills and problem solving.



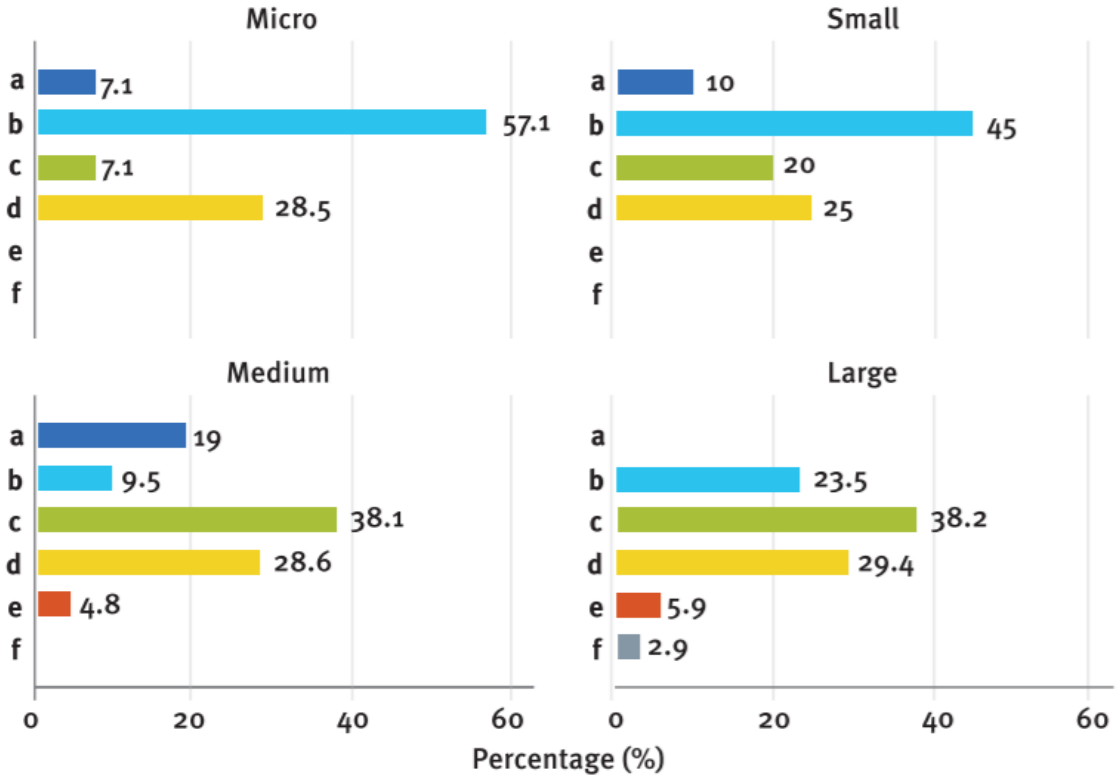
Type of skills companies reported to need to cope with COVID-19 challenges (%)
Source: UNIDO, 2020

It is interesting to ask what strategy, i.e., what type of training programmes, companies would choose to develop these skills.

The following options were mentioned by the authors of the questionnaire: (a) Use of public programmes for retraining. (b) Use of training opportunities offered by industry associations. (c) Internal training within the company with short courses. (d) Use of open source (web-based) training opportunities. (e) We do not plan to retrain employees but replace them with new employees with better skills. (f) Other

The researchers conclude that 'firm size influences the choice of retraining strategies. The medium and large companies in the sample are those that prefer to invest in either in-house training programs or open, web-based training opportunities. Most small and micro firms instead rely on industry

associations to support retraining strategies. Very few companies (including no large companies) report using public programs for retraining' (UNIDO 2020, pp. 21.).



Note:
a. Use public programmes for retraining;
b. Use training opportunities provided by sectorial associations;
c. Train them internally in the company with short training;
d. Use open source training opportunities (web based);
e. we don't plan to reskill workers, but to replace them with new employees with more adequate skills;
f. Other (please describe)

Different strategies for skills development, skills upgrading and retraining
Source: UNIDO, 2020

On this basis, the state, professional associations, and interest groups can play an important role in organizing supported education programs.
In recent years, companies have increasingly offered digital skills development training to their employees. However, a 2021 ILO global study shows that there is a significant difference in company size. While 70% of large companies offer ICT training to their employees, only 23% of SMEs do so. Several factors can be cited as reasons for the lack of training. According to the Low 2021 studies, Europena Commission 2019a, b, deficiencies in internet coverage are only partly a barrier to providing training. A far more obstructive factor is lack of time, availability of training programs, cost of programs, inflexible schedules and distances, and inability to fully understand the content of the training based on limited information. Often the training provided is inadequate and does not meet the needs of the business.

Synthesis of Barriers for Skills Development in SMEs
Low 2021

Low 2021 says digital capability development is critical for SMEs. 'SMEs are the backbone of our society, we need to enable their increased adoption of digital skills via supporting measures. This can be done via ecosystem strengthening, strategic outlook development, structured skills development and trainings tailored to their needs'.

Digital capabilities are of great importance for SMEs to make them more adaptable for and resilient to the change of the business environment. Beyond saving them from outdated technologies and techniques (hence competitive disadvantage), the tools provided by digital resources can mean real comparative advantages. Beyond all of this, new business opportunities are born due to the digital change for small and medium-sized enterprises around the globe.

Trends driving digital transformation

The following trends are shaping the digital transformation processes for SMEs currently:

- Flexible working
- Personalized costumer experience
- Data-driven decisions
- Artificial intelligence
- Empowered frontline workers
- Cloud solutions
- Cybersecurity

In the following sections, we introduce the above-mentioned trends in detail.

Flexible working

Flexible working is changing how modern businesses operate. For small and medium companies willing to expand their reach, remote work has become one of the biggest transformation drivers.
This is especially true with millennials beginning to dominate the job market. They're known to be independent, value their private time, and seek challenges at work. To appeal to that workforce, companies have to modernize and adopt a more dynamic approach.
By adopting technology that facilitates distributed collaboration, you can give your employees the freedom they crave, and reap all the benefits of remote work.

Personalized costumer experience

Customers are now more informed than ever thanks to the internet. Digital technologies are reshaping how they engage with businesses and make purchase decisions. And traditional marketing doesn't always keep up with this shift.
Each stage of a buyer's engagement with a brand affects their perception of the business and future purchases. That is why focusing on customer experience may be the single most important objective for small and medium-sized enterprise growth.
Innovative digital solutions allow businesses to identify buyers' expectations and deliver compelling value.

Data-driven decisions

Information is one of the most valuable assets in a rapidly changing business landscape. Skilled use of accumulated data allows organizations to improve strategic and business decision-making while positioning themselves for growth.
Big data and business analytics (BDA) play a vital role in the collection of accurate market and customer intelligence. By capitalizing on that technology, SMEs can examine existing customer insights and adjust their offering accordingly.
Small business owners no longer have to make decisions based on their gut feeling and assumptions alone.

Artificial intelligence

Artificial intelligence (AI) simplifies and automates routine processes for customer and tech support, product design, logistics, and many more, saving significant time and costs. It also helps companies understand customers and anticipate their behaviour to deliver personalized services.
From chatbots, self-service, and customer relationship management, to lead scoring and sales forecasting, AI enables SMEs to capture, manage, and measure customer interactions with their businesses
Integrating AI solutions allows SMEs to organize and automate laborious workflows efficiently and deliver highly-personal customer experiences at no extra cost.

Empowered frontline workers

When we think of digital solutions, we tend to think of office settings. However, in a typical small or medium company, office workers are as little as 10% of the overall staff. The rest are frontline workers. Empowering frontline employees is key to success for SMEs as they are the first to engage your clients. Modern digital technologies keep employees involved and motivated and allow them to deliver a consistent brand experience

Frontline workers speak for your business. There's a profusion of digital tools and technologies that can help you bring the best in them to serve your customers better.

Cloud solutions

In the past, there was a distinct divide between large enterprises and small companies. SMEs had to struggle with significant barriers to entry. They had insufficient funds, couldn't scale quickly enough, and lagged with technology.

As cloud solutions emerged, it became possible to resolve most of these concerns. Cloud is a catalyst for small and medium enterprises to achieve scalability and keep pace with growth.

Thanks to cloud-based solutions, SMEs can successfully compete with large businesses while retaining the efficiency and flexibility of a startup.

Cybersecurity

Cyberattacks on businesses are surging, and the methods employed by hackers are becoming more sophisticated each day. Despite these alarming signals, many SMEs continue to ignore security, which leaves them vulnerable.

Investing in reliable, compliant security solutions should be a top priority for SMEs. Every modern business needs a cybersecurity strategy to protect its assets and safeguard customer data and privacy

As SMEs digitally transform, they must seek robust solutions that will protect their data and respond to threats immediately.

To enhance the capabilities for the above-mentioned areas, SMEs need certain digital skills. In the next section, we describe those skills in detail.

Digital skills to be improved

There are various levels of digital skills that are typically interpreted. Those are the entry and advanced level digital skills with different (two respected) levels. Let's see the components of both in short, described in the following paragraphs.

Entry-level digital skills:

- Communicating via email
- Researching information online
- Handling sensitive information in virtual ecosystems
- Safely using cloud-based collaboration tools like Google Drive, DropBox, and Microsoft Teams
- Creating and managing spreadsheets and online documents
- Basic device management like connecting to the internet or installing software updates
- Screen sharing during a video call
- Using online calendars and efficiently managing your schedule (and possibly others on the team)

- Digital foundation skills – the fundamentals of being able to use digital technologies, such as using a browser, connecting to the internet, and keeping passwords secure.
- Communicating – sending emails securely, using attachments, and participating on social media.
- Handling information and content – using search engines, be aware that not all online content is reliable, accessing content across devices.
- Transacting – setting up accounts to use or purchase goods/services online, using different secure payment methods, filling in online forms.
- Problem-solving – finding solutions to problems using FAQs/tutorials/chat, presenting solutions through software, and improving productivity.
- Being safe and legal online – understanding best practices in data storage/sharing, updating and keeping passwords secure, and taking precautions against viruses.

Advanced digital skills:

- Original content creation
- E-commerce
- Network and information security
- UX/UI design (User Experience)
- Digital marketing
- Social media marketing
- Data analytics
- Web Analytics
- AI

In the following sections, we introduce the above-mentioned advanced digital skills in detail.

Digital marketing

The internet has completely changed the marketing game, bringing a level of precision and scale unknown in the pre-digital age. Specialised digital skills are required to navigate this new terrain, with expert practitioners often focusing on one specific discipline.
These include things like:

- pay-per-click advertising,
- search engine optimisation,
- email marketing,
- as well as the strategy to bring them together.

Numerous factors can be identified shaping the relations in the field of digital marketing, here we would like to highlight major components such as social media, user experience, web analytics and artificial intelligence (AI).

Social media

Social media digital skills are crucial to the digital marketing mix but are worth pulling out as social media has come to play such a significant role in our day-to-day as well as professional lives
Social media management tools:

- performance measurement,

- new channel research,
- brand presence/voice,
- influencer marketing,
- and paid vs organic all play a part in connecting with prospective and current users.

Social media is and will be an increasingly important factor in SME business processes. This includes hiring new employees or maintaining an active relationship with customers, among other factors. User experience is therefore of great importance.

User Experience

Just as the experience of shopping in brick-and-mortar stores plays an essential role in driving sales, the experience of using a website or mobile app is key to leading users to do what the website or app owner wants them to do. Indeed, it is even more central, as users can only use a website in predetermined ways. Thus, we have the area of digital skills known as user experience, or UX. This is the art of making sure that apps, websites, and other digital channels are intuitive and enjoyable to use.

Web Analytics

Part of what makes the digital age distinct from before is precision. We can clearly understand the behaviour patterns of those using digital platforms. For businesses, this also means being able to quantifiably track the successes and failures of their digital initiatives. The digital skillset involved in collating and making sense of this data is web analytics. Things like benchmarking, audience segmentation, and measurement all fall under the remit of web analytics.

Web analytics processes consist of four main phases or steps,[2] namely: Collection of Data: This phase is the collection of the basic, elementary data. Usually, this data is the count of things. The goal of this phase is to collect the data. Processing data into information: This phase usually takes counts and turns them into ratios, although there may still be some counts. The goal of this phase is to take the data and turn it into information, specifically metrics. Developing KPIs: This phase focuses on taking the metrics (and counters) and backing them with business strategies called Key Performance Indicators (KPI). KPIs often deal with conversion aspects, but not always. It depends on the organization. Formulating Online Strategy: This phase addresses the online goals, objectives and standards for the organization or business. These strategies are usually related to making money, saving money, or increasing market share. Another essential feature developed by the analysts to optimize the websites is the experiments.

Artificial intelligence (AI)

Artificial intelligence may still have something of a science fiction ring to it, even compared with the afore mentioned digital skills. Nonetheless, artificial intelligence is playing an increasing role in modern businesses. Rather than the sentient robots of cinematic lore, AI is about teaching machines to do jobs, predict, and make decisions based on a detailed computation of past examples.

Benefits and barriers of using digital tools to integrate customer-centric innovation

The diffusion of new digital technologies in innovative activities can become a driving force for the development of new ideas. The very characteristic of innovation in accordance with the Oslo Manual indicates many benefits, which, by improving the efficiency of the company's operations, lead to gaining a competitive advantage by shifting the demand curve for the company's products, e.g. increasing the quality of products, offering new products or gaining new markets or customer groups, or the company's cost curve e.g. reducing unit costs of production, purchasing, distribution or transactions, or relating to the company's innovative capacity, e.g. increasing the ability to develop new products or processes or to acquire and create new knowledge (OECD, no date).

The key benefits of applying new technologies to customer-centric innovation are data collection. The benefit of efficient and comprehensive data analysis and collection in innovative activities is related to the acquisition of knowledge resulting from data transformed into information. According to the Report "Measuring the Business Impacts of Effective Data" (*Measuring the Business Impacts of Effective Data*, no date), increasing the efficiency of data processing by just 10% can increase productivity by up to 49% in retail sales and by 39% in consulting services. In other sectors, growth of up to 20% can be expected.

Effective data analysis allows you to get to know your customers better, their needs, purchasing habits and preferences in the first place. Thanks to the use of modern cloud solutions and data storage, it is possible to store large collections, which allows constant access to a comprehensive history of customer relationships and analysis of their purchasing behavior. Enterprises see the advantages of data analysis in terms of customer segmentation and matching strategies to deal with each of them. Thanks to this, it is possible to reveal patterns of behavior and dependencies that are visible only after creating a full picture that combines, for example, the customer's activity on social media with his place of residence (geolocation) and a promotional campaign at a given time for a specific product.

Another benefit of using digital technologies is the ability to immediately react in real time and communicate with the customer, e.g. when making a purchase decision and launching an automatic search of internal resources about previous customer behaviors to check if they already have a purchase history or use external sources to supplement his profile.

Effective use of digital tools will allow you to identify the real demand for new products and services on the market, get to know the opinion of consumers about different versions of one article or improve its functionality. As a result, it will translate into an increase in the level of customer satisfaction, improvement of the opinion about the brand and an increase in the level of sales, which according to McKinsey report may increase margin by up to 60% (J. Manyika, M. Chui, B. Brown, J. Bughin, R. Dobbs, Ch. Roxburgh, 2011). For entrepreneurs during galloping changes, the speed of reaction is a source of building an advantage over their competitors.

Enterprises undergoing digital transformation may have concerns about applying new technologies to their innovation activities. As outlined by Bank Gospodarstwa Krajowego et al. (2019), SMEs often face a number of obstacles that hinder digitization projects. These include, in particular, IT security issues, as well as insufficient digital skills. In addition, SMEs report that poorly developed

infrastructure and associated slow internet connections hinder the implementation of digital methods in their value creation.

Skills to manage digital tools for customer-centric innovation vary from classical ICT skills (Cesaroni & Consoli, 2015; Demary et al., 2016). Therefore, targeted skills need to be developed within SMEs to efficiently introduce customer-centric innovation. In addition, unclear responsibilities to manage the collected information hinder innovative activities (Demary et al., 2016). A failure in capturing and processing the collected customer information may lead to incomplete pictures of customer needs, which results in additional effort to introduce customer innovation (Schaubmair, 2017).

Besides required IT skills, companies often face the hurdle of uncertain legal environments with respect to competition and property laws as well as liability regulations when colleting customer data. Especially the collection of personal data and varying regulations in the international context represent obstacles (Demary et al., 2016).

High investment and training costs appear to be one of the key concerns in the implementation of digital solutions in innovation activities. The transition to digital solutions involves costs for the purchase of both new IT infrastructure and software. This often exceeds the development capacity of enterprises, especially smaller ones with limited financial resources. In addition, the introduction of new solutions in the functioning of the enterprise is associated with the change of processes, in particular the need for employees to switch to new tools for the functioning of the organization. This means training employees in new tools and how to use them. It is also possible to employ new specialists with specific competences necessary for the proper functioning of new functionalities or the entire equipment. In the calculation of switching to new operating methods, infrastructure maintenance costs should also be added. As a result, the overall cost of transforming an enterprise may exceed the company's financial capacity. This risk also entails the need for additional equipment (Zajkowska, 2021).

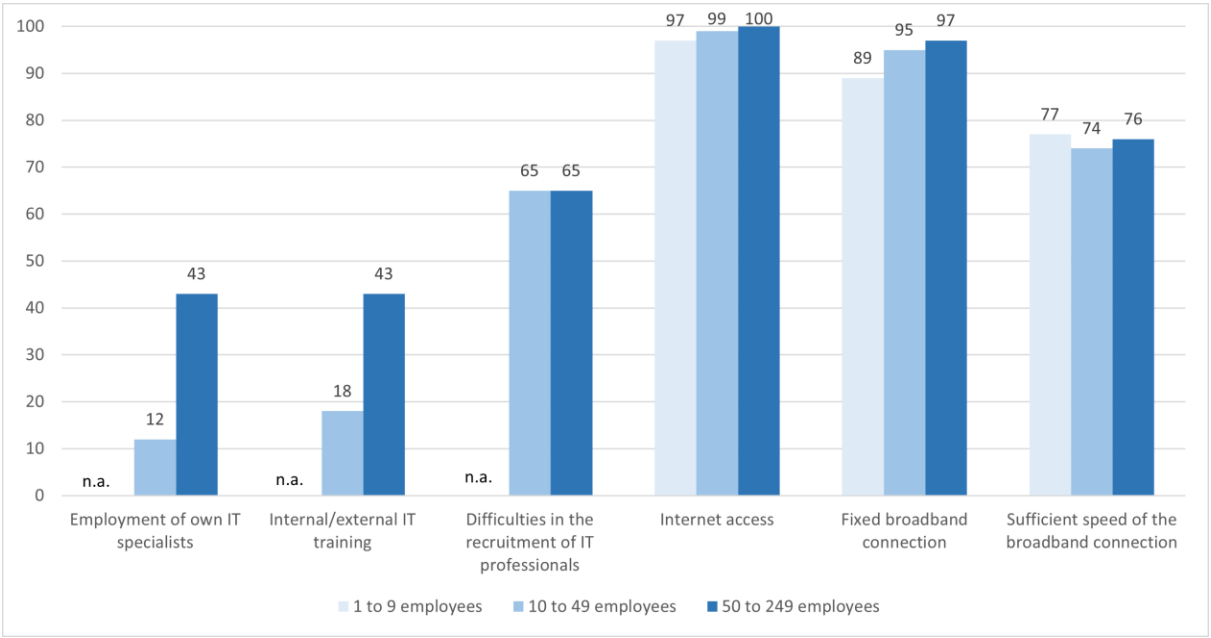
Another barrier is related to the potential misuse of data and manipulation. Enterprises realize, which has repeatedly appeared in the results of this study, that information is currently the greatest value in business. Effective information management starts with establishing an appropriate methodology for its collection. Data can come from many sources - both from inside the organization and from outside. The inclusion of intelligent technology in the production processes leads to the gradual replacement of the natural strength and abilities of humans with robots. As a consequence, it means the loss of some jobs previously occupied by people.

However, the risk may be the increased dependence of employees on technological support, which makes the company vulnerable to technological failures. In addition, the efficiency savings from digital manufacturing require high initial investment and training costs as complex technical equipment and a high level of expertise are required. Likewise, technological limitations in terms of size and production speed must be taken into account, for example the quality of 3D printed products, in particular surface properties, is in constant need of improvement. In addition, digital manufacturing processes can also become targets for abuse and manipulation.

Framework conditions for the implementation of digital customer-based innovation: Case studies – Germany

When looking at the digital infrastructure in Germany, it can be noted that almost all SMEs in Germany have access to the internet. Only among microenterprises have 3 percent of SMEs and 1 percent of those with 10 to 49 employees stated that they do not have internet access. This means that the biggest external barrier to the realisation of customer innovation via digital tools has been passed (see figure 1). A similar result can be seen for the availability of a fixed broadband connection. Here, too, the proportion of micro enterprises is lowest at 89 percent, followed by the medium size category at 95 percent. 97 percent of SMEs with 50 to 249 employees have a fixed broadband connection. However, SMEs' assessments of the quality of the digital infrastructure point to potential for improvement. For example, the available speed of the broadband connection for the activities of microenterprises is most satisfactory (77 percent rate the speed as sufficient).

Furthermore, the examination of the framework conditions also shows that less than half of the SMEs employ their own IT specialists. There are clear differences between the company size categories. While 43 percent of large SMEs state that they employ IT specialists, this is the case for only 12 percent of SMEs with 10 to 49 employees. The shortage of skilled workers often discussed in the literature is confirmed by SMEs irrespective of employment size classes. 65 percent of SMEs stated that they had experienced difficulties in hiring IT specialists in 2020. While 43 percent of large SMEs were able to compensate for this skills shortage through internal and/or external IT training, only 18 percent of SMEs with 10 to 49 employees had this opportunity to bring the required expertise into the company. Different continuing education formats can serve as a sustainable way to acquire basic knowledge.



Framework conditions for digital customer-based innovation in Germany, 2020, in %

Source: Federal Statistical Office (2021) ICT indicators for companies: Germany, years, employment size classes

Module 3: Digital tools in business operation

- Applied info-communication tools and technologies supporting business processes in SMEs
- Digital communication channels used for communicating and collaborating with customers
- Digital tools supporting customer-centric innovations

Source: Monika Zajkowska, Melanie Mesloh: Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs, 2021

Derivation of a digital toolbox

The following chapter intends to provide insights into existing digital technologies and tools to realize customer-based innovation. As mentioned, SMEs often face resource scarcity and therefore may be confronted by a shortage of specific digital skills. While some companies are already familiar with certain digital solutions, this technology may be new territory for other companies (International Chamber of Commerce Argentina, 2020). Moreover, digital technologies cannot be confined to a firmly defined area. Rather, they are embedded in countless processes, marketing or organizational methods and can be individually adapted or expanded to meet the specific SME's needs (Nepelski, 2019). Due to these facts, a broad range of digital tools will be assessed. The following subchapter will provide a thematic introduction to the digital transformation and the new technologies that have emerged as a result. Digital tools that companies can use within the framework of the technologies described to initiate customer-centric innovations are then presented to derive a digital toolbox.

Digital transformation – new technological trends

The digital revolution, leading to a radical reduction in the costs of storing, processing and transmitting information, changes the way the economy functions, especially for SMEs. The environment in which SMEs operate in EU countries is constantly changing. Customer expectations are constantly growing and the future is becoming harder and harder to determine. This means the necessity to constantly monitor and analyze the conditions of business and competition on the market. In addition to focusing on development in the long term, flexibility, speed of action and adaptation to the expectations of buyers, as well as competing in quality are the elements that distinguish digital companies from those with an analog profile. Their market success results from the ability to define ambitious goals and their efficient implementation. Next step for SMEs is to adapt to the ongoing digital transformation and use the right digital tools.

Gartner ('Top 10 strategic technology trends for 2018', 2017) identified three overarching current technology theme trends as the foundation for successful business activities in the digital era:

intelligent, digital and mesh. It argues that, in order to achieve competitive advantage, firms must search for opportunities along this 'intelligent digital mesh'.

The first technology trend theme, intelligent, addresses the emergence and spread of artificial intelligence (AI) and its applications in analytics and intelligent things. Artificial intelligence (AI) refers to the growing ability of computers to perform activities that previously required the involvement of human intelligence (A. Agrawal, J.S. Gans, 2017). Artificial intelligence can process large amounts of data in less time than the human brain allows (Hoffman, 2016). Opportunities in this topic include the replacement, extension and improvement of activities and efficiency previously performed by human resources.

This topic also covers the possibilities of so-called smart things that combine the Internet of Things (IoT) with AI-based analytics. IoT technologies refer to information and communication networks or environments where objects are equipped with sensors that allow them to interact with each other and potentially operate autonomously. As a result of increasing levels of connectivity and interaction provided by IoT technologies, large amounts of data have become available. This gives great opportunities for enterprises, including those less technologically advanced, to carry out Big Data analyzes in order to use them effectively (Picot and Loebbecke, 2015).

Another technological area is the digital trend, which refers to connecting the real and virtual worlds to create a digitally enhanced environment. It covers all forms of integrating digital technologies into manufacturing processes and workflows. Digital manufacturing refers to computer-controlled manufacturing processes such as additive manufacturing and the use of digital twins in the manufacturing process. Additive manufacturing, i.e. 3D printing (R. Jiang, R. Kleer, 2017), consists in combining materials layer by layer with a solid based on a digital 3D model. The materials used for 3D printing cover a wide range of substances from steel, plastic, cement and even wooden parts. Digital twins are virtual replicas of physical objects during the manufacturing process that can help predict key variables and enable fast and inexpensive digital experiments.

In addition, experiences created with the use of augmented reality (AR) technology (M.E. Porter, no date) play an increasingly important role in the field of digital technology trends. Augmented reality is about enriching the real world with digital functions in order to provide new forms of perception of the environment. AR technologies also enable users to interact with digital technologies in new forms.

The third technological area relates to the networking trend of connecting people, organizations, and technologies to generate and deliver digital results. Key to this area is Blockchain technology (D. Tapscott, 2017), which refers to a peer-to-peer network that enables and records transactions based on an open, distributed ledger. Its potential underlying business impact ranges from its original use as the foundation of the Bitcoin cryptocurrency to the overall digitization of transactions. Another type of networking technology is digital platforms (M.W. van Alstyne, G.G. Parker, 2016) that aim to create a network of connections. They represent the technological foundations enabling direct communication and interactions between different groups of actors. The platform owner usually controls the operation of the platform and enables interactions and transactions between the manufacturers who make up the platform's offer and the consumers who buy or use these products and services. Platforms have indirect network effects because the more users on the producer or consumer side, the more attractive the platform is to the other side. In addition, a critical mass of actors on each side is critical to the platform's potential success. In the light of the presented considerations, a wide range of digital technologies can be noticed that can be used in innovative

activities of enterprises. However, economic practice shows that not all the opportunities offered by new technological trends are used, and the level of their implementation in individual types of innovation varies.

Digital tools for customer-centric innovation

The following subchapter will describe a selection of digital tools to realize customer-centric innovation covered by the literature. As mentioned, the following tools are applicable to be implemented in different stages of the customer-centric innovation process to collect needed customer information.

To begin with, a basic digital tool is the company website. A clearly structured website helps customers to get an idea of the company and its products. By providing a direct contact person, their email address or a clearly accessible contact form, questions and requests from customers or interested parties can be efficiently recorded and processed. The assignment of clear internal responsibilities and the establishment of internal customer management processes, e.g. via customer relationship management tools, support the processing of incoming customer inquiries and helps to capture customer needs on the demand side (Cesaroni & Consoli, 2015; Liang & Tanniru, 2007). Closely related to the website is the use of emails. Emails serve as another basic tool to enable general communication with customers. With the help of emails, customer inquiries as well as newsletters can be used to build a digital network (idid.).

To successfully integrate customer requests that may lead to customer-based innovations the establishment of suitable communication channels is of particular interest. It is important to ensure that the tools used are easy to use for both customers and SMEs. A generally widespread method of integrating consumers into operational processes is the use of social media platforms (e.g. Facebook, Instagram, LinkedIn). The rapid exchange of information taking place in these platforms can both promote collaboration between customers and companies and expand entrepreneurial innovation networks (Deloitte, n.d.). In additions, social media provides access to a new, fast, innovative way of communicating with customers, creating new ways of collaboration, thought sharing and co-creation. Furthermore, products or services can be co-designed, co- produced and enhanced by interaction between companies and customers. Therefore, with the social media revolution, consumers have expanded their role from passive to active consumers (Cesaroni & Consoli, 2015).

It is important for SMEs to be authentic and personal on social media. It is also important for companies to actively use their social media and to engage with both already established and potential new customers through competitions, quick responses or by sharing user-generated content. This can be a photo of a product, an opinion or feedback, or simple open questions to engage with customers and show them that you value their opinion on potential new developments and products (Carter 2019; George 2019). Nevertheless, SMEs can also use social media without a major strain put on their (financial) resources due to its accessibility and little or no monetary investment needed.

Besides the before mentioned channels, social media also offers the opportunity to use forums, blogs or other social media platforms to further establish relationships with customers. These relationships can be used to collecting first-hand information of customers (Cesaroni & Consoli, 2015). In addition, companies can collect data from customers visiting their website and social media presence which can

be used to generate more customer-centric innovation. Digitalisation therefore enables companies to perform better in the long run because these companies are usually more connected to their customers and the markets they operate in (Columbus, 2020).

A further integration of digital tools for the realization of customer-centric innovation lies in the use of the web 2.0 in SMEs (Liang & Tanniru, 2006). Web 2.0 describes a socio-technological change in the usage of the internet, from a traditional information sharing and e-commerce to a participation of the web users to generate additional benefits. Therefore, the internet is transformed into a productive platform. The focus lies in gathering different kind of data that is available on the world wide web. As examples of web 2.0 tools, Wikis and social tagging can be named. While wikis enable users to publish information on a specific topic online (so-called crowd sourcing), social tagging describes the collection of meaningful, intuitive and high-quality keywords that enable context indexing of information objects and implemented to improve or refine search results (e.g. on a corporate webpage) (Siepermann, 2021).

It can be summarized that the described technological tools can foster the knowledge acquisition, transfer and elaboration for customer-centralized innovation. Customer data can be collected in various ways such as through customer feedback, during transitions or by using cookies and web-server logs (Castagna et al., 2020). Furthermore, the authors emphasize that relational tools such as email, blogs or content management systems enhance communication between companies and customers, while collaborative tools such as social media improve knowledge sharing and relationship building. With respect to a company's marketing activities, digital tools such as mobile and banner advertising or direct email marketing (e.g. newsletter) help to gather customer data and share knowledge.

Applied instruments, methods and procedures to customer-centric innovation in SMEs

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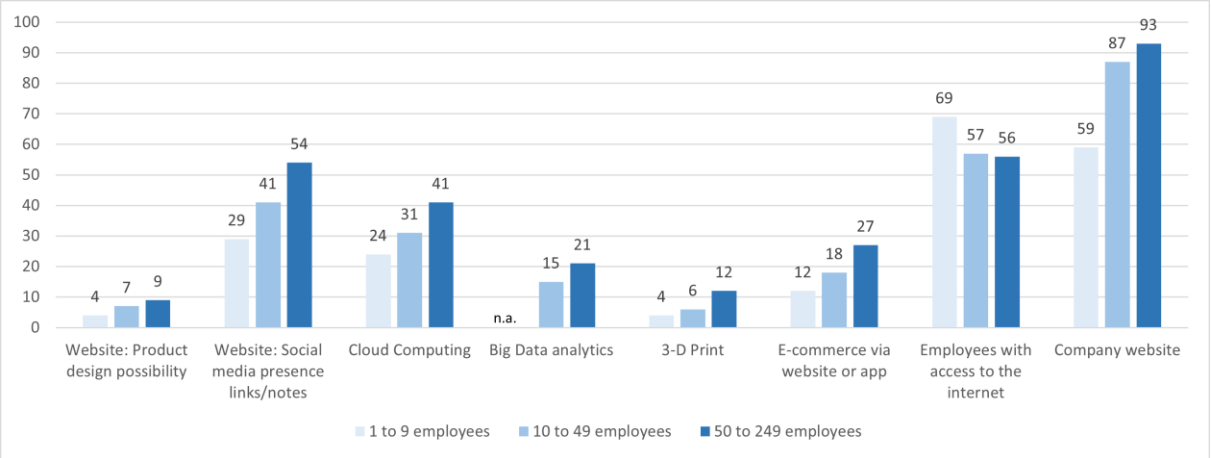
Case study Germany

The quantitative study of ICT indicators by the German Federal Statistical Office shows that more than half of SMEs had an internet presence in the form of a company website in 2020 (see Figure 2). SMEs with 50 to 249 employees occupy a pioneering position here with a share of 93 percent, followed by 87 percent of SMEs with 10 to 49 employees. The taillight is the microenterprises, 59 percent of which operate a website. On a positive note, 69 percent of employees in microenterprises have access to the internet. This is true for 57 percent of SMEs in the medium employment size category. SMEs with 49 to 250 employees bring up the rear with a share of 56 percent.

A further, closer look at the use of corporate websites in SMEs shows that large SMEs especially (54 percent) use this opportunity to draw customers' attention to the company's social media channels. This tool offers further opportunities to establish direct contact with customers. This connection is also used by41 percent of SMEs with 10 to 49 employees and 29 percent of SMEs with 1 to 9 employees. Direct opportunities for customers to configure the desired products according to their

own ideas are not yet widespread in German SMEs. Only 4 percent of small SMEs, 7 percent of medium-sized SMEs and 9 percent of large SMEs offer this option in 2020.



Applied instruments, methods, and procedures to customer-centric innovation in Germany, 2020, in %

Source: Federal Statistical Office (2021) ICT indicators for companies: Germany, years, employment size classes

When considering the use of technologically and time more demanding digital tools, it can be observed that SMEs in the higher employment size categories are more advanced in their use of these than microenterprises. For example, just under a quarter of microenterprises use cloud computing applications to make areas of internal data processing and exchanges with customers more efficient e. g. by using cloud emailing. These digital solutions are integrated in 31 percent of companies with 10 to 49 employees and in 41 percent of SMEs with 50 to 249 employees.

Due to a shortage of data for microenterprises, it is not possible to provide insight into the integration of Big Data analytics methods for these companies. However, it can be seen that the integration of this technology is already taking place in medium-sized SMEs (15 percent) and large SMEs (21 percent). This offers great potential for evaluating the diversity of existing customer data in a targeted manner for the development of products and services.

On the contrary, strong differences can be seen in the use of additive manufacturing technologies in the area of 3-D printing processes. Above all, SMEs with more than 50 employees are using the possibilities of 3-D printing as part of their business activities in 2020. With a share of 12 percent, this digital method is applied two times more frequently in large SMEs than in medium-sized SMEs (6 percent). 4 percent of microenterprises state that they use this technology.

The benefits of e-commerce, such as rapid customer identification and communication, were used by 12 percent of microenterprises in Germany in 2020. With a share of 18 percent of SMEs with 10 to 49 employees, the influence of company size on the digital integration of e-commerce solutions based on sales via a website or app is not very pronounced. For 27 percent of SMEs with 50 to 249 employees, the use of e-commerce is already part of the business model.

Digital technologies for the realization of customer innovations – Application notes

The following chapter will derive application notes for the described tools and technologies to initiate and to perform customer-centric innovation activities in SMEs. To do so, a comprehensive table will be developed, displaying the technologies and tools described and an assignment to technology types will be made (table 4). Furthermore, the technologies and tools will be matched with a selection of innovation stages in the process of customer-centric innovation activities (table 5). Then, obstacles and benefits of these tools will be assigned (table 5), followed by recommendations for application of customer-centric innovation projects. In general, it needs to be emphasized that this overview of application notes is not final and needs to be enhanced as new tools and technologies develop. Also, the table is not to be interpreted as a ranking of tools or technologies applicable for SMEs, but as a general overview. Since individual SMEs have individual technological or human preconditions, wishes, and aims for the realization of customer-centric innovation, each SME may make us of the technology or tool that fits their needs best and therefore also experiences individual benefits or challenges that might occur along this process.

Tools for customer-centric innovation by technology type

	Type		
Tool	**Analog**	**Digital**	**Mesh**
E-Mail		x	
Newsletter		x	
Company website		x	
Chatbot		x	
Mobile & banner advertising		x	
Online advertising		x	
Social Media (passive e. g. forums, blogs)		x	
Social Media (active e. g. LinkedIn, Facebook, Instagram)		x	
Q&A		x	
Customer support			x
Computer-controlled manufacturing		x	

3-D printing		x	
Internet 2.0 (e.g. Wikis, Social tagging, crowdsourcing)		x	
Content marketing		x	
Survey, questionnaires, interviews			x
Focus groups	x		
Brainstorming			x
Observations			x
Test groups			x
Field tests	x		
Simulations			x
Visualizations			x
Living labs	x		
Diary Search	x		

Tools and technologies for customer-centric innovation by innovation stage

Innovation stage	**Applicable tools & technologies**
Market research / Exploration	*Tools:* • Forums, blogs, E-Mail, Social Media (active), Social Media (passive), Interviews, Surveys, Observations, Test groups, Living labs, Diary Search, Crowdsourcing *Technologies* • Web2.0, Knowledge management systems, Enterprise resource planning, Artificial intelligence, Big data, customer relationship management, Digital platforms

Idea creation	*Tools:* • Simulations, Visualizations, Living labs, Support Team, Social Media (active), Social Media (passive), E-Mail, Test groups, interactive company website, Q&A *Technologies:* • Big data, Artificial intelligence, cloud computing, customer relationship management, digital manufacturing, digital platforms, internet, knowledge management, Web 2.0
Prototype development	*Tools*: • Living labs *Technologies:*
	• Internet of things, Augmented reality, Big data, Digital manufacturing, Digital Twins, Internet of Things
Prototype testing	*Tools*: • Simulations, Visualizations, Social Media (active), Focus Groups, Interviews, Observations, Test Groups, *Technologies:* • Virtual reality, digital twins, Augmented reality, Internet
Product and service development	*Tools:* • Chat bots, Support team, Social Media (active), Social Media (passive), Interviews, *Technologies:* • Internet of things, Artificial intelligence
Commercialization	*Tools:* • Company website, Social Media (active), online advertisement, Field tests, Newsletter, Blogs, Forums, Content marketing, *Technologies:* • Internet, Digital platforms, Cloud computing, Web 2.0

Benefits of the implementation of tools for customer-centric innovation

	Customer relationship					**Market conditions**							**Organisational aspects**				
Tools	Digital network	Quick exchange of information	Understanding of purchasing behaviour	Human interaction	Increased customer satisfaction / loyality	Improved product functionality	Increased market acceptance	Reduction of market risks	Overcoming regional restrictions	Improved competitiveness	Increased customer stock	Expansion of market accessibility	Processing of large data sets	Low financial requirements	Data collection	Improved product & services portfolio	Increased productivity
E-Mail	X	X		X	X			X	X	X	X	X		X		X	
Newsletter	X				X				X	X	X	X		X		X	
Company website	X	X			X		X	X	X	X	X	X		X		X	
Chatbot		X			X	X		X	X	X	X	X				X	
Q&A		X			X	X		X	X	X	X	X		X		X	
Online advertising	X						X	X	X	X	X	X				X	
Content marketing			X				X	X	X	X	X	X				X	
Social Media	X	X	X		X	X	X	X	X	X	X	X		X		X	
Customer support	X	X	X	X	X	X	X	X		X	X	X		X		X	
Computer-controlled manufacturing						X	X	X		X			X			X	X
3D-Printing						X	X	X		X			X			X	X
Internet 2.0			X		X		X	X		X	X					X	
Big Data			X			X		X		X	X		X	X		X	X

Surveys, interviews			X	X	X	X		X		X						X	
Focus groups			X	X	X	X		X		X						X	
Brainstorming			X	X	X	X		X		X				X		X	
Observations			X	X	X	X		X		X				X		X	
Test groups			X	X	X	X		X		X						X	
Field tests			X	X	X	X		X		X						X	
Simulations			X	X	X	X		X		X						X	
Visualizations			X	X	X	X		X		X						X	
Living labs			X	X	X	X		X		X						X	
Diary Search			X	X	X	X		X		X						X	

Obstacles of the implementation of tools for customer-centric innovation

	Financial constrains				**Framework conditions**			**Organisational issues**						
Tools	High technological investment	Need of specific hard-ware / soft-ware	Unclear return of investment / high uncertainty	High training costs	Data security	Internet connection	IT Infrastructure	Need for specialized personnel (e. g. IT)	Need for training	Lack of trust in tool	Shortage of human resources	Risk of information overload	Lack of clear responsibilities	Increased vulnerability to technological failures
E-Mail						X	X						X	
Newsletter						X	X				X		X	
Company website						X	X				X		X	X
Chatbot		X		X	X	X	X	X	X	X				

Q&A						X	X					X	X	
Online advertising				X		X	X	X	X		X	X		
Content marketing				X		X	X	X	X		X	X		
Social Media					X	X	X				X	X	X	
Customer support					X	X	X		X		X	X	X	
Computer-controlled manufacturing	X	X	X	X	X	X	X	X	X	X	X			X
3D-Printing	X	X	X	X	X	X	X	X	X	X	X			X
Internet 2.0						X	X	X	X		X	X		X
Big Data		X	X	X	X	X	X	X	X	X	X	X	X	X
Surveys, interviews				X				X	X		X	X		
Focus groups				X				X	X		X	X		
Brainstorming				X				X	X		X	X		
Observations				X				X	X		X	X		
Test groups				X				X	X		X	X		
Field tests				X				X	X		X	X		
Simulations				X				X	X		X	X		
Visualizations				X				X	X		X	X		
Living labs				X				X	X		X	X		
Diary Search				X				X	X		X	X		

The role of digital tools in Customer-centric innovation in SMEs - Experiences of a survey and best practices

- Customer-centric Innovation in SMEs - Results of an Empirical Research
- Best Practices in the use of digital technologies supporting customer innovations by SMEs

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Customer-centric Innovation in SMEs - Results of an Empirical Research

Source:

- Ágnes Horváth, Noémi Hajdú, László Molnár, Anett Tóthné Kiss, Klára Szűcsné Markovics, Erika Szilágyiné Fülöp, Ádám Bereczk: Customer-centric Innovation in SMEs. Results of an Empirical Research, 2021

The aim of the research

The aim of this research was to study how SMEs create and implement customer-based innovations, which digital technologies they use to support them, what kind of benefits and barriers the company realizes while involving customers in innovation processes. Best practices were also collected, while real-life experiences of SMEs are very valuable for developing specific training and education measures for SMEs.

Research methodology

Regarding the research method, a questionnaire survey was conducted to achieve the research goals and answer to the research questions. A literature review regarding customer-centric innovation, and the available ICT and digital solutions for companies served as a professional basis for the questionnaire. The questionnaire contains the following main topics:

- Company data
- Level of consumer involvement in innovation processes
- Which stages of product innovation are consumers involved in?
- How are the consumers involved?
- **What digital tools, ICT are used in consumer-centric innovation?**
- **What digital devices are normally used during business operation?**
- What benefits have companies realized from using customer-centric innovations supported by digital tools?
- **What are the obstacles and difficulties of using digital devices in the company?**

The marketing research was conducted online (used Survey Monkey). The interview took place between 7 April and 8 June 2021. During this period, the questionnaire was started by 101 respondents, but only 95 was evaluable answer from 11 different countries. The most responses originated from Germany, Hungary, Poland, and Denmark. The target group was clearly micro, small, and medium-sized enterprises, but large companies also appeared among the respondents. (Their responses were not excluded during the analysis but were considered as a control group.)

As the data collected during the fieldwork cannot be considered representative, the findings obtained during the data analysis cannot be generalized, i.e., the results are valid only for the sample. Data analysis was performed with IBM SPSS Statistics (Version 26) software package, in which mainly univariate analysis were performed (descriptive statistics, frequency tables, means, standard deviations), but some bivariate analyses were also conducted in the form of cross-tabulation and correlation analysis.

Information about companies

The survey received 95 evaluable responses. The largest proportion of respondents are from Germany (27 companies). More than 80 percent of the respondents have jurisdiction in Germany, Hungary, Poland, or Denmark. Other countries participating in the research are Lithuania, Belarus, Estonia, Finland, Bulgaria, Latvia, and Russia. The number of respondents is two-two for Belarus, Estonia, and Finland, and one-one for Bulgaria, Latvia, and Russia. Based on the proportions of respondents leaving the participating countries and the number of respondents, the research cannot be considered representative.

Most of the respondents can be related to education and training (13 companies). Half of respondents work in the following sectors: education; construction; manufacturing; agriculture, forestry, and fishing; wholesale and retail trade, repair of motor vehicles and motorcycles. Two-two respondents from the areas of accommodation and food service activities, financial and insurance activities, and human health and social work activities were included in the sample; one-one respondents from the areas of public administration and defence (compulsory social security), transport and storage, water supply; sewerage; waste management and remediation activities were sampled. Of the 95 respondents, nineteen identified an economic sector other than the sectors surveyed as to their area of activity. They had to specify the sector in the text. Other such areas are audit, animal welfare, other services, information technology, translation and interpretation, car dismantling. Some of the respondents indicating the other category answered incorrectly because the list registered included the sector they should have chosen. Examples are manufacturing, wholesale, info-communication.

In the countries that accounted for more than 80 percent of respondents, the following sectors were identified most frequently (excluding the other category). Three-three of the German respondents work in the fields of info communications, trade and vehicle repair, and construction. Two-two respondents in the fields of agriculture, manufacturing, and hospitality. Of the Hungarian respondents, five indicated the construction industry, two-two the trade and vehicle repair, and the scientific and technical activities. Of the Polish respondents, five indicated education and training, two-two administration and construction. Of the Danish respondents, three indicated education and training and two agriculture. Out of a total of nineteen respondents in other sectors, eighteen were sampled from the above four countries. Based on the sample distribution of economic sectors, the survey cannot be considered representative.

The number of employees was surveyed as a characteristic of the company size. Of the respondents, fifty-seven indicated less than ten employees. More than 10 percent of the respondents have more than two hundred and fifty employees. Based on the number of employees, the survey cannot be considered representative because the proportions in the sample do not match the proportions in the total population.

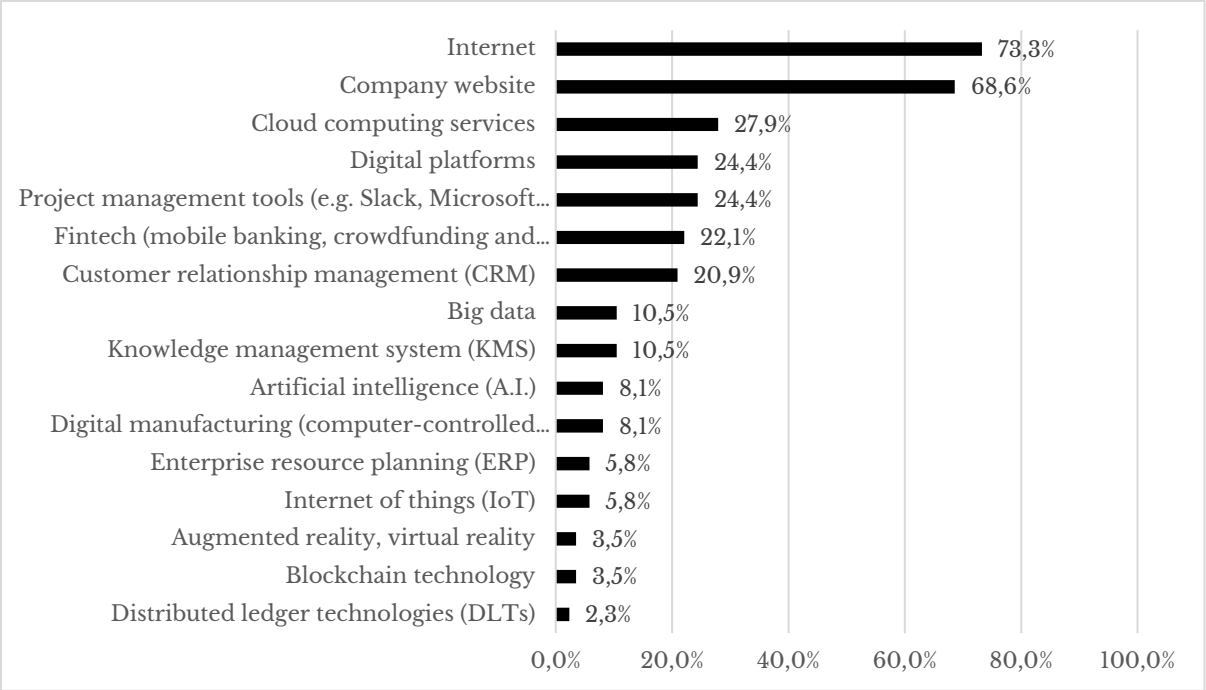
More than 80 percent of the companies/organizations surveyed have been established for more than five years. We examined the relationship between company size and operating time. Fourteen of the companies/ organizations with less than ten employees (fifty-seven) have been operating for less than five years. In the case of organizations belonging to the categories of ten and fifty, fifty-one and two hundred and fifty, and more than two hundred and fifty, one respondent indicated that the company/organization had been established less than five years ago.

According to the main costumers of the companies several of the answers (B2C, B2B, B2G) to the question could be marked at the same time. Ten respondents did not indicate either option. Of the remaining eighty-five respondents, twenty-eight indicated two options and eight respondents indicated all three. In fifty-seven cases of the responses, the customers are mostly individuals, in fifty-six cases other companies, organizations, and in fifteen cases governmental or public institutions.

We examined the relationship between the customer and the company size (number of employees). Of the fifty-three organizations with less than ten employees, thirty-six are individuals, thirty-two are companies, and six are government and public institutions. Of the fifteen organizations that employ between ten and fifty people, twelve are private individuals, eleven are companies, and four are government or public institutions. Of the seven organizations employing between fifty-one and two hundred and fifty people, three are individuals, five are companies, and two are government or public institutions. Of the ten organizations with more than two hundred and fifty employees, six are individuals, eight are companies, and three are government or public institutions. It can be stated that in the case of the number of employees with less than fifty-one persons, the customers of the examined organizations are mostly private individuals and the number of companies in these organizations is seven to eight percent points less than the number of customers. In larger organizations, companies appear as buyers for the most part. Government and administrative organizations appear as customers in ten to thirty percent.

Applied info-communication tools and technologies supporting business processes in SMEs

Using digital technologies and tools, respondents were able to mark multiple options at the same time. Nine of the ninety-five respondents did not indicate any options for using the listed tools and technologies. Sixty-three respondents indicated Internet use and fifty-nine marked the corporate website. Internet use is a general category, but it includes some other options (e.g., corporate website, cloud-based solutions). There were respondents who marked the latter while not using the Internet. This indicates that full, accurate information on the listed options has not yet been developed. The following technologies and tools are present in a relatively large number of responding organizations: cloud-based solutions, digital platforms, project management tools, mobile banking, customer relationship management systems.

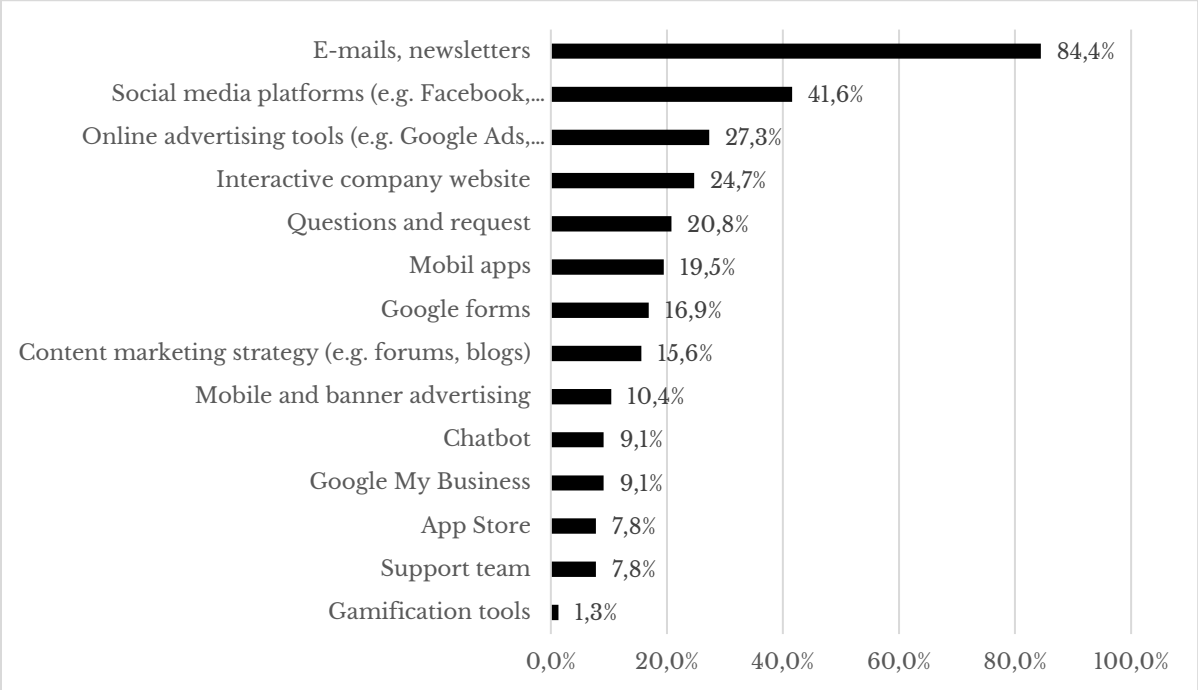


Which digital technologies & tools does your company use to support business processes in general?

Correlations between the number of employees and the tool and technology used were examined. The proportions are similar to those for the whole population. Of the fifty-three organizations with less than ten employees, thirty-eight indicated Internet use and thirty-one indicated the corporate website. IoT and virtual solutions did not appear in either case. For organizations with ten to fifty employees, twelve out of fifteen respondents and nine indicated Internet use as the corporate website. IoT, blockchain technology, and shared accounting are not at all typical of these organizations. For organizations with between fifty-one and two hundred and fifty employees (eight), they use one hundred percent of the Internet and the corporate website. Organizations that employ more than two hundred and fifty people (ten), these two tools appear in eight cases. Big data, knowledge management systems, artificial intelligence (digital manufacturing), enterprise resource planning, the Internet of things, augmented reality, virtual reality, blockchain technology, and distributed ledger technologies have appeared in two to nine cases for all responding organizations, which means small proportions overall, but draws attention to the fact that there are also some relatively new and/or specialized solutions. demand in most sectors and company sizes. We analysed the country data for the four most respondents regarding the technologies used. The use of the Internet is the most typical in Hungarian and Polish organizations, and the corporate website in German and Danish organizations. Low-frequency devices and technologies (e.g., IoT, digital production, virtual reality) are more present in German and Danish organizations, their frequency is typically zero percent in Hungarian and Polish organizations.

Digital communication channels used for communicating and collaborating with customers

Respondents could also mark more of the digital communication channels used at the same time. The highest proportion was indicated by e-mail use (sixty-five out of seventy-seven respondents). This was followed by the use of social media (thirty-two of seventy-seven respondents). In addition, the use of online advertising, an interactive website, and Q&R are medium (more than 20 percent). The use of novel tools such as chatbots, support teams, or gamification tools is present, but in a rather minor proportion (Figure 2).



What (digital) communication channels does your company use for communicating and collaborating with customers?

Similar to general information technologies and tools, the widespread nature of the use of communication solutions is typical of German and Danish organizations (e.g., support team, content marketing, gamification). Of these, six and five tools do not appear at all for Hungarian and Polish respondents, respectively, while only two-two tools do not appear for German and Danish respondents.

Distribution of the used communication tools was examined in the grouping according to the number of employees. It is not possible to establish a clear pattern in terms of the tools used.

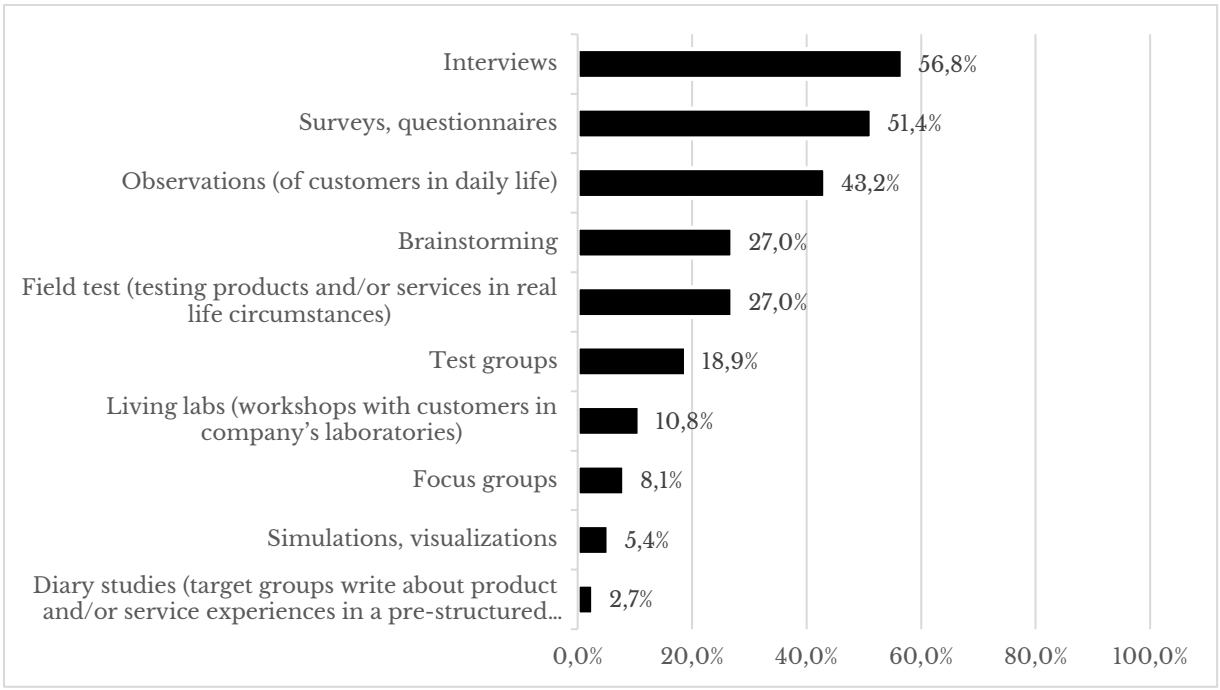
Methods for engaging consumers in customer-centric innovations

In the next question, 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)
-

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)



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

The most common method of involving customers is conducting interviews, surveys and questionnaires. 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. More than 40 percent 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. The same proportion is included in case of the Field Test, in which products and/or services are tested under real conditions. Seven companies 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. Less commonly used methods of customer engagement include:

- 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.
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 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, Question-naires, 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 Brain-storming 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.

Best Practices in the use of digital technologies supporting customer innovations by SMEs

Source:

- Ágnes Horváth, Noémi Hajdú, László Molnár, Anett Tóthné Kiss, Klára Szűcsné Markovics, Erika Szilágyiné Fülöp, Ádám Bereczk: Experiences of Best Practices in the use of digital technologies supporting customer innovations by SMEs, 2021

About the research

To address this problem, this report provides an insight into aspects of the use of digital methods for the identification, processing, and implementation of customer-centric innovations in SMEs. In addition, selected best practices of customer-centric innovation activities are elaborated. We have 37 best practices from 12 countries.

Methods of customer's involvement in innovation processes

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

- 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 circum-stances)

- Simulations and visualizations
- Living labs (cooperation with customers in company's labora-tories and workshops)
- Diary search (target groups are asked to write the product and/or service experiences in a pre-structured online diary)

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, GAIA has grown a sustainable customer community. With the help of data analysis, GAIA knows exactly who the customers are and what kind of people are reached through their online marketing strategies. GAIA 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)

Module 4: Criteria for a good training - important factors for success

- Criteria for a good training
- Specialities in training for SMEs.
- Generation gap in education.
- Best Practices in the Transfer of Digital Skills and Technologies used in Customer-centric Innovations to SMEs - Experiences of Best Practices from Training Institutions.

- How to build an effective training? ADDIE Model

Criteria for good training

There are well-defined components that can make a training great. Those components are the quality of the curriculum, the applied teaching methods, the professionality and personality of the trainer, the learning environment, the organization with its administrative capabilities that hosts the training program, and also the training fees what defines the value for money ratio. Next, we are going threw these elements to understand them better in this specific context.

Content of the syllabus and the curriculum

The effectiveness of the training and its usefulness to SMEs is mainly determined by the content of the training. An important criterion is that the content of the training is consistent with the company's expectations, meets the needs of the market and aims to develop the skills and knowledge that the company lacks. The development of SMEs' digital readiness meets these requirements, as several research findings confirm that SMEs' digital readiness is insufficient, and training is needed. The theoretical and practical orientation of training is also crucial. When training

companies, it is important to use a practical approach during the training and to develop the ability to identify and solve problems. The basic requirement for success is the development of a well-designed curriculum that ensures the achievement of the set goals and a curriculum developed for the appropriate knowledge levels.

Teaching methodology

Education achieves its goal if the way of imparting knowledge can ensure that the knowledge acquired becomes applicable to the students. Knowledge is complex, apart from knowledge, skills, abilities, personality traits of the students and their intellectual development also play a role in deepening the knowledge. We can start from the fact that the target audience of training for SMEs is the managers and employees of these companies. In this case, the participants are adult, busy professionals who work a lot, so want targeted and effective training and in many cases, it is hard for them to sit down to learn again. In addition to traditional teaching, the use of modern teaching methods is also playing an increasingly significant role. Particularly important are interactive forms of teaching, in which the acquisition of knowledge is the result of the joint work of teacher and student, and in which the active participation of learners plays a major role. The varied use of teaching methods helps to fix and deep knowledge and maintain attention. Modern teaching methods are presented in a separate chapter.

The trainer

The personality traits, personal charm and enthusiasm of the trainer are of paramount importance for the effectiveness of the training. The instructor should be prepared, knowledgeable, credible and dedicated. But no matter how well the trainer is professionally prepared, if he is not able to pass on the knowledge, if he cannot inspire his audience, the training will not be successful. This also includes that he considers the prior knowledge of the audience and adjusts to it.

Organization and administration

Well-organized training and the smooth running of administrative processes are also important aspects for busy company managers and employees.

The learning environment

The choice and design of the training venue also contribute to a positive evaluation of the training. The ideal learning environment should be designed in such a way that, as far as possible, nothing distracts, concentration is maintained, and the furniture is ergonomically designed. Creating a friendly, bright environment in the classroom and an inspiring, harmonious atmosphere in the training institution is very helpful. Providing the technical conditions (acoustics, sound technology, internet connection, adequate lighting, projector, IT solutions) is essential for the smooth running of the training.

Training fees and value for money

A significant proportion of SMEs have financial difficulties and cannot afford the high costs of training and development. An important issue is to review the funding options for training. Consideration should be given to the feasibility of using tender funds where training can be provided free of charge to interested SMEs. It is useful to check the legal background and the possibilities offered by the legislation. In the case of training where the company bears the cost, it is important to consider the return on investment in the training. Although the return on the money invested in employee training is difficult to measure and quantify, it is important that the training provides a 'tangible' benefit to the business, whether it is a financial benefit or an increase in operational efficiency.

Based on the above, we draw the following conclusions and provide recommendations for the industry:

- **Create a suitable environment for training, provide basic infrastructure facilities at a high level!** A suitable environment and a high level of infrastructural background are necessary but not sufficient conditions for the success of training programs. If we cannot offer this to our potential customers, we are unlikely to be credible when it comes to topics such as digitalization or customer-oriented innovations.
- **The importance of teachers is beyond question: choose those who understand their profession and (digital) teaching methodology at the highest level!** The role of teachers is undeniable in the success of training programs. Not only should they be experts, but they should also have excellent teaching methodology, especially if they use the latest digital solutions. They must be able to adapt to all forms of education, be it face-to-face, online or blended.
- **The trainers, the training program, and the training facility itself should be customer-centric!** Customer-centricity starts with identifying the needs of our customers and addressing those needs when developing our training portfolio. Training facilities with a high level of customer dependency can rightfully expect customer satisfaction, repeat purchases, and referrals to the training facility. However, these three factors are essentially synonymous with business success.
- **Use differentiated (personalized) methods!** It is possible to reach the widest possible range of SMEs if we acknowledge their diversity and the fact that each SME has unique needs that can only be best met with personalized services (training). It is also important to note that uniqueness does not end with the fact that the services are personalized. The approach (marketing communication), the curriculum and the teaching methods used must also be tailored to the individual.
- **Focus on sub-markets, do niche marketing!** Many educational institutions are successful because they have found niche markets where there is demand but no supply or shortage. Satisfying such market needs can be profitable in the short or even long term. So let us focus on these market segments and add to our training portfolio the training that can meet their needs.

Recommended videos:
https://www.youtube.com/watch?v=JcqzRheQVMI
https://www.youtube.com/watch?v=RbeY0dXER6g
https://www.youtube.com/watch?v=JxShaB4R0d8
https://www.youtube.com/watch?v=p2J7wSuFRl8&list=PLEA18FAF1AD9047B0

Specialities in training for SMEs

Compared with large enterprises, SMEs face special challenges in developing their human resources. (Lee, 2016. p. 6.)

- SMEs have a small number of employees. An SME worker generally has to carry out multiple roles and possess a broader range of skills. SMEs find it difficult to organize in-plant training programs or arrange suitable institutional training programs outside the enterprise, which generally offer standardized training courses. (Lee, 2016. p. 6.)
- SMEs in general incur a higher training cost per worker compared with large enterprises.
- SMEs have institutional limitations. They generally do not have anyone working exclusively on the planning, organization, and management of worker training. Even though SMEs could identify some priority training needs, they lack economies of scale and specialized staff members who could find suitable outside training institutions, negotiate with them, enter into a contract, monitor their training processes, evaluate training effectiveness, and/or handle the cumbersome administrative processes for reimbursement of their training expenses. (Lee, 2016. p. 6.)
- Training is an investment in human capital and the returns to the investment accrue over a long period. Therefore, SMEs' limited financial and credit situation does not allow them to invest in their workers as much as larger enterprises. (Lee, 2016. p. 6.)

The findings of a research conducted in 2007 by Nhi Nguyen, are true in our days too: o (Nhi Nguyen, 2017, p.7.)

- „Strategies that work for small businesses are focused on business need rather than driven by government agendas and funding.
- Lowering the costs of formal training is useful in engaging some small businesses, but financial incentives alone are not sufficient to meet small business needs. Small businesses will pay for education and training if they see the value in it and it is in line with their interests.
- Strategies which fit with the way small business learns are more successful than direct or formal training. Small business learns 'through doing', with the focus on current or real issues in the workplace, and through social networks—learning from other business people.
- Successful strategies are business mentoring, networking, and collaborative or group learning with other businesses through clusters, alliances or action learning. Other effective strategies include diagnostic services such as training needs analysis and benchmarking processes against other organisations. Programs that employ a number of these work better than those relying on a single approach.
- Strategies that meet the needs of the diverse range of small businesses demonstrate three essential elements. These are:

- a clear focus on business-specific needs
- a personal approach through a recognised local facilitator or business service organisation that can reach small business operators who may not be positive about training
- flexible provision which carefully individualises training information, content and delivery to the needs of each small business." (Nhi Nguyen, 2017, p.7.)

Generation gap in education

During the design of the training program, it is very important to accurately identify the target group of our training and the characteristics of the potential participants. For different target groups, different teaching methods may achieve the desired goal. One important characteristic that we need to consider is the age of the participants. There are many studies dealing with generational theories which help us identify the main features of each generation and plan our training. In case of certain training, we also have to reckon with the fact that during the training we need to work with a multi-generational team. This is a real option for training for SMEs. We must strive to create value for all ages by learning about the features of different generations and exploiting the potential in synergies. The older generation can contribute to the success of the training with its thoughtfulness, maturity and extensive experience, while the younger generation with its flexibility and fresh approach. Using this synergy, an extremely valuable combination of knowledge can be created. Understanding the characteristics of each generation is an important part of exploiting the potential of a multi-generational team. Due to the rapid technological development, the differences between the generations have become more and more marked, so the success of our training may depend on how "generation-consciously" we treat our students.

Generations are classified based on the year of birth. Although there are some differences in the period of each generation in literature, the authors agree that each period with its info-communication environment determines the socialization of its people. The X, Y, Z, and alpha generations are mostly separated based on their relationship to advances in technology and the Internet. The age using the Internet first time has a significant influence on people's information processing technic and communication channels preferred by them. Members of Generation X came close to the Internet as adults. Compared to them, members of Generation Z have grown up

with access to the Internet since childhood. Each generation prefers a different form of communication, which creates a "generation gap".
https://felelosszulokiskolaja.hu/oktatas/generaciok-kulonbsegei-x-y-z-es-alfa-az-iskolaban
Characteristics of each generation are summarized based on the following websites:
https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/

Baby boomers

Baby boomers were born between 1946 and 1964. The end of World War II and the economic prosperity that followed led to a boom in births; hence the name "baby boomers." They are competitive, driven and dedicated. When boomers reached working age, they faced higher competition for jobs because of the rise in population. This led to a generation of determined workers who take pride in their careers. Baby boomers place value on the organizations they work for, the positions they hold and the duration with which they stayed with a company. Improved life expectancy combined with baby boomers' strong work ethic has led to a majority of them retiring later than previous generations. They have had to adapt to technology. Unlike the generations that came after them, boomers were not born into technology. By the time commercial Internet access was being sold to customers in 1995, boomers were well into adulthood. Due to growing up without digital communication, boomers prefer face-to-face interactions. (https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/

Generation X

Generation X includes individuals born from 1965 to 1980. They value autonomy. They are often the children of two working parents, so Gen Xers became independent and learned to solve problems on their own early on in life. They are well educated. The decline of manufacturing jobs at the time Gen Xers were leaving for college led to a generation that used education as a means for professional advancement. Gen Xers value education and search for opportunities to continue their education. Gen Xers are ready to step into leadership roles as baby boomers retire, and their direct communication style and hands-off approach to getting things done make them excellent managers. They are comfortable with technology. Gen Xers grew up on MTV, video games, and cable news. Because of that, Gen Xers are very comfortable with technology like computers and smartphones, along with learning new software or programs. They prefer to create a clear separation between their work and personal lives. More so than their predecessors, Gen Xers value work-life balance, so prefer flexible work. https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/
They are characterized by solution-seeking, reliable, controlled behaviour, coupled with in-depth professional sophistication and knowledge. Elements of their motivational structure: status, money, advancement in the social ladder. https://folyoiratok.oh.gov.hu/uj-kozneveles/generacioelmeletek

Millennials (also known as Generation Y)

Millennials were born between 1981 and 1996. They prefer to collaborate. Collaborating across many teams is critical to them. Collaborating on projects appeals to millennials' desire to consider viewpoints different from their own. They are motivated by meaningful work. Millennials prefer work that uses their creativity, leverages their talent, and makes an impact on others. They are digital natives. Early versions of wi-fi were available starting in 1990, which means that millennials grew up with the internet and have watched technology like virtual reality and artificial intelligence grow from their early stages. This exposure has led to a generation with an intuitive knowledge of technology. They are amenable to feedback. The majority of millennials are currently in either an entry-level, intermediate, or mid-level position. As such, they are focused on their professional development and place a lot of value on feedback and mentorship from their managers.
https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/
Its members are confident, energetic, highly talented, creative individuals who have significantly different behaviours in learning and working than before. They grew up with the development of modern technology, their hunger for information is expressed, they treat the multicultural environment with ease and a loose attitude, and they are characterized by "multitasking". Elements of their motivational structure: the influence of peer groups is strong, they like to work with peers, but they are also characterized by aimlessness and unpredictability.
https://folyoiratok.oh.gov.hu/uj-kozneveles/generacioelmeletek

Generation Z

Generation Z, also known as "zoomers," were born between 1997 and 2015. They value social responsibility and diversity. Gen Zers growing up with immediate access to the internet, news, and social media. Social media has allowed them to express their thoughts on political and cultural issues. As the most racially and ethnically diverse generation to date, Gen Zers expect diversity to be the norm. They expect to work with modern technology. Gen Zers were born into a digital world, so it makes sense that they expect technology to be interwoven into their jobs. They're breaking away from institutional structures. More than previous generations, Gen Zers are inclined to take a non-traditional approach to their education, finances, and work. From an educational perspective, Gen Zers are still going to college, but they are also using tutorial videos, online classes, and real-world experience to tailor their learning towards their unique, personal goals. They want stability AND flexibility. As much as they want a stable income and benefits, they also want work environments that offer flexibility in place and time. Pay and benefits and the option to work remotely are two of the most important factors for them. Broadening their skillset and gaining relevant experiences are priorities for Gen Zers at work.
https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/
They are brave, proactive, less sceptical of their abilities and limitations, practical. Elements of their motivational structure: They are "born" into the world of the internet, which also transforms their human relationships and communications: the online world expands the boundaries of their selves and shapes their identities. In the offline or "real" world, their conflict management skills are deficient (e.g., difficulty in managing temper, aggression, altered attitudes toward authority).
https://folyoiratok.oh.gov.hu/uj-kozneveles/generacioelmeletek

Videos:
https://www.youtube.com/watch?v=1-t4_TmmxEw
https://www.youtube.com/watch?v=D9qcV89oFIw
https://www.youtube.com/watch?v=TtIojDWOsgg
Links:
https://www.getapp.com/resources/characteristics-of-different-generations-in-the-workplace/

Best Practices in the Transfer of Digital Skills and Technologies used in Customer-centric Innovations to SMEs - Experiences of Best Practices from Training Institutions.

Source: Ágnes Horváth, Noémi Hajdú, László Molnár, Anett Tóthné Kiss, Klára Szűcsné Markovics: Best Practices in the Transfer of Digital Skills and Technologies used in Customer-centric Innovations to SMEs. Experiences of Best Practices from Training Institutions

The aim of the research

The aim of this research is to collect best practices from educational institutions that provide training for SMEs to develop digital skills and customer-centric innovation.
We sought to collect best practices from training institutions in 13 countries. The method was that of an interview, preceded in most cases by an email request. Interviews were usually conducted by telephone, and we used a set of prepared questions / templates to ensure compa-rability. There were several refusals during the surveys. Many educa-tional institutions declined to be interviewed. This was partly due to lack of time and interest, but the most obvious reason was that the pro-ject was seen as potential competition. Due to the low willingness to respond, usable experiences came from 6 countries.

Research methodology

We have 12 best practices from 6 countries. Most of the good practices collected were from Hungary and Hungarian educational institutions (5 in number). Three good practices were collected from Germany and one each from Denmark, Finland, Italy, and Poland. Regarding the type of educational institutions, among the organizations providing good practices there are 7 public institutions and 5 private organizations. Most of the public institutions are affiliated to a higher education insti-tution (e.g., IBC International Business College, Satakunta University of Applied Sciences, Technische Univeristät Hamburg, University of Mis-kolc), and among the private organizations we find mainly adult educa-tion institutions. Among the educational institutions, there are organi-zations that specialize specifically in SMEs (e.g., Mittelstand 4.0 Kom-petenzzentrum Hamburg, Mittelstand 4.0 Kompetenzzentrum Kiel, Mittelstand-Digital Zentrum Hannover, t2i Technology Transfer and Innovation Scarl), but also those with a broader target group (students, trainers, consultants, companies, etc.).

Digital skills development training for SMEs

Most of the educational institutions surveyed provide training specifi-cally focused on digital skills development for SMEs. Only a few did not indicate that they offer personalized training for SMEs: "We do not have an "off the shelf" concept, because we always have tailor-made courses and programs - depending on the client's needs." (IBC International Business College, Denmark)
"We do not have public training programs aimed at SMEs. If a company wish-es to do so, it is possible." (Satakunta University of Applied Sciences)
The topics covered in the trainings are very diverse and range from basic knowledge (e.g., digitalisation, technical possibilities, basic knowledge - Mittelstand 4.0 Kompetenzzentrum Kiel, Germany), to advanced level (e.g., digitizable processes of business operations, avail-able digital tool systems and methods, business requirements - integra-tion of available digital tools/methods - Small Business Development Foundation, Hungary) to specific expertise (pl.: raising awareness/ in-forming, demonstrating, qualifying and implementing in the field of AI - Mittelstand 4.0 Kompetenzzentrum Hamburg, Germany)
The training material – as well as the topics covered – cover a fairly broad spectrum, such as 'software/apps/classroom/innovative materi-als/power points and the teacher him-/her self'. (IBC International Business School, Denmark). It is also worth highlighting that PowerPoint is still one of the most popular formats used by educational institutions to create curricula (e.g., Mittelstand 4.0 Kompetenzzentrum Hamburg). In the practice of educational institutions, knowledge transfer takes place in the form of face-to-face, online, and mixed forms.
The picture also varies as to the methods of teaching by which knowledge is imparted. We may come across a training institution that uses traditional methods (e.g., lectures - Office of Legal Counsel Robert Pożarski), but some organizations offer a whole range of teaching methods for knowledge transfer and skill building (e.g.: Webinars, de-monstrators, living labs, learning factories, case studies, group work, in-depth projects - t2i Technology Transfer and Innovation Scarl).
As far as the methodology and assessment aspects of the exam are con-cerned, there are training institutions that do not conduct any exams at all in these courses (e.g., IBC - International Business College, Mittel-stand 4.0 Kompetenzzentrum Hamburg), while in others the courses end with an exam (e.g., a group training ends with the preparation of an exam task and its assessment - Small Business Development Founda-tion, Hungary).
Since digital skills training for SMEs is not standardized, the training system/process is at least as diverse as the topics or teaching methods used (e.g.: No standard fee or duration. Always tailor-made. It can last from a few hours to days - IBC International Business College, Den-mark). So, the duration of the training can range from a few hours to a few days, and in terms of fees, there are completely free courses (e.g., in Germany), but also paid ones (8 hours of training and €390 fee - t2i Technology Transfer and Innovation Scarl).
Usually there are no special conditions for participation in the training, at most that the participant is really a small and medium-sized enter-prise (e.g.: Participant must be an SME - Mittelstand 4.0 Kompe-tenzzentrum Hamburg, must be an SME - Mittelstand-Digital Zentrum Hannover).

The recruitment of participants from the SME sector

Some of the educational institutions interviewed stated that they do not carry out specific marketing activities (e.g., *'We do not have a sales process'* – IBC International Business College, Denmark; *'No particularly marketing activities are done.'* - Satakunta University of Applied Sciences, Finland).
In contrast, other educational institutions attach great importance to effective marketing communication of their education. They use a wide range of offline and online tools. Among the offline tools, special events, fairs, and theme days organized by themselves or by partners stand out. (*'We have twice a year theme days on entrepreneurship, and also some themedays concerning startups, robotics, artificial intelligence etc, in which we present our services and opportunities we can offer to enterprises.'* - Satakunta University of Applied Sciences, Finland, and face-to-face meetings with potential buyers (e.g., *'Our sales staff are in dialogue with potential customers.'* – IBC International Business College, Denmark).
The range of online tools used is even more colorful: Your own website, newsletter (e.g., *'Sending newsletters to minimum 1.000 SMEs'* – IPOSZ, Hungary), use of social media: Twitter, Instagram, Facebook (e.g., *'Digital formats: Twitter, Instagram'* - Mittelstand-Digital Zentrum Hannover). The variety of marketing communication tools used is perhaps best described by the example of the Small Business Development Foundation (Hungary): *"(a) Own mailing list, (b) Mailing lists run by civil society organizations, (c) Independent events, (d) Partnership events, (e) Social media interfaces"*

Measuring customer satisfaction in relation to the training

Regarding the measurement of training satisfaction, training institutions agree they measure training satisfaction continuously, because it is very important. The measurement method can be verbal and online (e.g., *'Always – there is important feedback – verbally and digital.'* – IBC International Business College, Denmark). Measuring satisfaction is usually part of the educational institution's own quality assurance system (e.g., *'We have a quality management system that includes customer satisfaction.'* – Kisvállalkozás-fejlesztési Alapítvány, Hungary).
In addition to measuring satisfaction, an important question is how effective the training can be, how much it contributes to the continued success of the organization. In this context, we quote verbatim the good practice of Új Ház Felnőttképző Zrt, Hungary: *'The efficiency of a training course is a difficult issue. It is hard to know whether the training course creates value added in sales. Basically, we apply the following measurement methods: we ask the participants of the training courses right after the training then about 5 weeks later we ask them again. We ask the owners of SMEs about their experiences and whether the employees show any sign of their development.'*

Success factors of training programs

The success of training programmes can depend on several factors:

- For example, IBC mentions the environment: *'Our learnings labs at IBC/Innovations factory is perfect. It is open, all wood, birds sings, flow of water true the building and GOOD teachers.'*
- At least as important are the teachers: *'Teachers are involved and motivated, care their students and – as covid-epidemic proved – very flexible.'* - Satakunta University of Applied Sciences, Finland
- Customer focus is also important: *'Each participant may find in t2i an empathic, informal and customer centric environment'* - T2i Technology Transfer and Innovation SCARL, Italy

- Or the personalization of training: *'We fully tailor-made our training courses to the requirements of the company'* - SZTÁV Felnőttképző Zrt., Hungary
- Among the success factors we can mention specific trainings: *'Focus on AI in the areas of logistics and supply chain management.'* - Mittelstand 4.0 Kompetenzzentrum Hamburg

The success factors are best summarized by Mentorius: *'There are three sources of success for training programs: a) We provide training that fills gaps (that are either non-existent, very remote, or very rare) (e.g., explosion protection engineer). b) We can tailor your training (we can adapt it to the needs of the company). c) We are flexible, both in terms of location and methodology (use of online training, mixed forms of training).'*

Difficulties with training

Among the difficulties in training, several training institutions mention the epidemic situation: (e.g., '*The most challenging effort is to balance the training goals with the restricions on physical presence due to the pandemic, especially for training where human interaction plays an essential role."* - T2i Technology Transfer and Innovation SCARL, Italy; *"At present, the greatest challenge is caused by Covid. There is a constant change in the type and form of training courses they can organise.'* - Easy Learning Hungary Skills Development Ltd., Hungary).

There is a typical attitude of SMEs towards training which can be characterized as follows: *'When the business goes well, there is no need for training, when the business does not go well there is no money to spend on training. It is a very typical attitude.'* - Új Ház Felnőttképző Zrt., Hungary). However, completely free training is not necessarily a good solution to this problem either: *'Training courses are free of charge, therefore participants often drop out.'* - Mittelstand 4.0 Kompetenz-zentrum Kiel).

Conclusion and recommendation notes

Based on the best practices collected from the training institutions, we draw the following conclusions and provide recommendations for the industry:

- Create a suitable environment for training, provide basic infrastructure facilities at a high level!
- The importance of teachers is beyond question: choose those who understand their profession and (digital) teaching methodology at the highest level!
- The trainers, the training program, and the training facility itself should be customer-centric!
- Use differentiated (personalized) methods!
- Focus on sub-markets, do niche marketing!

How to build an effective training? ADDIE Model

Sources:

- Eoghan Quigley: ADDIE: 5 Steps to Effective Training. Published on October 3, 2019 https://www.learnupon.com/blog/addie-5-steps/,

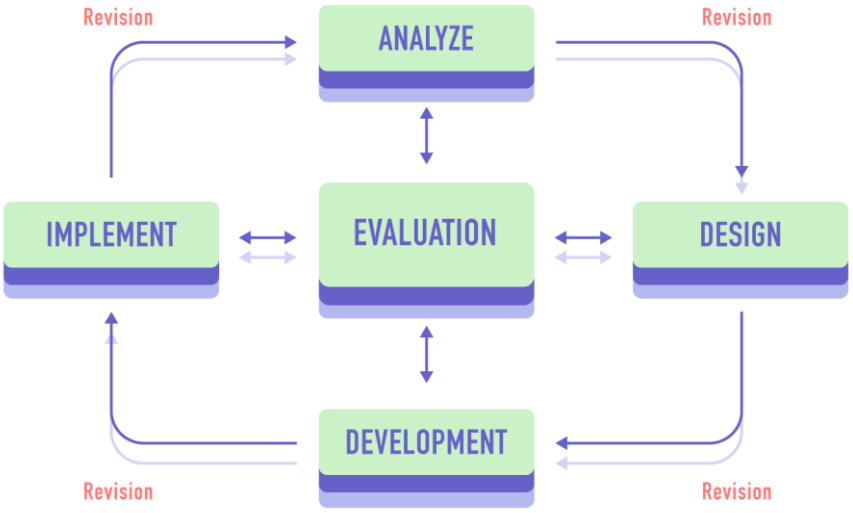
- Aris Apostolopoulos: ADDIE training model: What is it and how to use it in eLearning. Published on: 26 Mar 2021, 10 mins to read
  https://www.talentlms.com/blog/addie-training-model-definition-stages/

Other links:
https://elmlearning.com/blog/instructional-design-addie-model/
https://www.youtube.com/watch?v=JxShaB4R0d8

The ADDIE model is an instructional design methodology used to help organize and streamline the production of your course content. Developed in the 1970's, ADDIE is still the most commonly used model for instructional design. It's simple and effective!
ADDIE is an acronym for the five stages of a development process:

1. Analysis
2. Design
3. Development
4. Implementation
5. Evaluation

Every step should be taken in that exact order. However, the ADDIE model follows a circular pattern that repeats itself until trainees reach perfection. Also, due to the last stage of the ADDIE learning model (evaluation), you get all the feedback you need so you can keep on improving both your skills and your learners' experience.



The 5 Steps of The Addie Process

The 5 steps of the ADDIE training model

Step 1: Analysis

Before you start developing any content or training strategies, you should analyze the current situation in terms of training, knowledge gaps etc. Start with a series of questions to understand

the current situation and to also understand what is the goal of the training itself. This influences a huge amount of decisions later in the process.
One very common question is: What is the point of the training? Why are we doing it? What type of behavioral change is desired? Will training actually help? This phase should be a full audit of the audience, business goals, training methodologies used, media types used, etc. Once this is done, you can generate a training plan that addresses:
Who, What, When, Where, Why, How?
We have to use the"5 W's and an H" rule, and ask six questions:

- Who is going to receive your training? *(Analyze your trainees)*
- What will your training be about? *(The context of your training)*
- When is it going to happen? *(Set a time-frame right off the bat)*
- Where is it going to happen? *(Will you deliver it online or in a classroom?)*
- Why are you doing this? *(The objectives of your training)*
- How are you going to achieve this? *(The methodology and the requirements)*

If you have a clear answer to each one of these questions as well as a general analysis of the current situation, then you have completed both your plan and the very first step.
The core of your training plan will be *"How can we improve the situation and achieve business goals through training?"*. You will use this question as the foundation for the rest of the process. *You should come out with: an analysis of training needs and a training plan.*

Step 2: Design

With your training plan done, you then get to the design phase – this is where you take all of the learnings of the previous phase and use it to make practical decisions. This includes a strategy, delivery methods, structure, duration, assessment, and feedback. The next step is to storyboard your ideas and/or create a prototype. You are creating a blueprint for your courses, and by making a prototype you can quickly communicate with other stakeholders the value of the training.
An initial testing phase of the prototype is always a good idea, this is a sanity check that is carried out prior to moving too far forward.
You should come out with: an overview of the course design and storyboards/prototypes.

Step 3: Development

At this stage, you can begin to create the courses. You will be heavily guided by the prototype/storyboards at this point. Each element of the course should be developed to match the design phase. The core of the content has already been decided. All you need to add is a level of detail and polish to the courses.
This is done by adding graphics, choosing colors and deciding on fonts. To some, this may seem trivial, but it has a huge bearing on how engaging the course content is.
The careful selection of these elements allows you to present the course in a manner that will appeal to the audience (which may become apparent with an analysis of the audience in the first phase).
The development process should be iterative. Once you have created a course you should test it to

ensure there are no basic errors – grammar, spelling, syntax etc. Testing should also look at the mechanics of the course. A key consideration at this stage is navigation. Testing the course is a systematic check on the accuracy of the content and the utility of the navigation.
You should come out with: Course Content

Step 4: Implementation

Once you have completed your courses and you are satisfied that they are fully tested, it's time to share them with the learner. The decisions made in the design phase will influence how this is actually carried out. In the majority of cases, the courses are uploaded to an LMS (Learning Management System) and the delivery options are set up – who are enrolled, how much time are they given, pass marks for assessments, and the collection of feedback. The instructional designer should monitor the situation for any teething issues.
You should come out with: Your courses are live in the LMS and learners can start to take and complete courses

Step 5: Evaluation

ADDIE's main goal is to provide a structured method of creating training programs. It is also, however, a powerful model for improving the way in which future iterations are created. Getting feedback on every aspect of the courses is really important so that you can improve and revise the content. What to focus on:

- Did we meet the goals as set out in the analysis phase?
- Take feedback and place back into the analysis phase.
- Identify other training requirements.
- Possible change in media types or approach.

A great way to get feedback is to ask learners to complete surveys at the end of their course.
You should come out with: An evaluation report and actionable changes for the current or future courses

You can just move from one stage to another, but you can only go forward in a circular motion. As a result, it's only when you reach the stage of Evaluation that you are free to jump back to one of the previous steps to revise it.
Conclusion: ADDIE training model helps you reach your goals. Let's be realistic. The ADDIE training model is one of the most solid, safest choices if you want to create courses that will both educate and engage your learners.

Module 5: Modern teaching methods, Effective Teaching and Training Techniques

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Modern teaching methods

The continuous development of intellectual capital has become even more pronounced and necessary as a result of free competition in the market as a result of capitalism. It is only through the timely and appropriate development of intellectual capital that a company can maintain or improve its position in the market.

All this is independent of the size and quality of the companies. The easiest and most effective way of SME development is the eLearning procedure. This is a practical and available type of learning for every employee and its importance is much higher during this pandemic situation when employees can't join the lessons in groups or most of the employees work from home. Nowadays online learning surfaces started to change their profile to serve the needs of SMEs.

The difference between the generations is a major challenge in education today, which is also reflected in the change in basic habits. While learning from books was taken for granted for barely a decade, the online world today largely offers quick access to information. Due to the technical and technological change on the one hand and the differences between the generations, on the other hand, education is constantly evolving. *According to Crocket (2016), "21st-century students need the following skills to be successful in life: problem-solving, creativity, analytical thinking, cooperation, communication, ethics, agency and accountability".* The focus of development is on optimizing the curriculum, the teaching method, to ensure an effective learning process.

The paradigm shift in education from traditional to modern teaching methods is a result of rapid technological change in the 21st century. Modern teaching methods have spread rapidly because of their efficiency. They are useful for students and easy to use for teachers. Technology plays an important role for both students and teachers. Students are involved in the learning process; they are at the centre of the teaching and thus they can design their learning path.

The perspective of teaching and learning is different, and students are not at the same level in terms of their characteristics, strengths, and abilities. The novelty lies in action-based teaching where the emphasis is more on collaboration, cooperation, and teamwork. The goal of modern technology is to make learning a joyful, easy process for students while meeting the demands of the marketplace. There is a lot of emphasis on practice. *According to Mehta (2021), "the characteristics of modern teaching methods are the following: 'learner-centred, task- or action-oriented, resource-based, interactive and integrative, collegial collaboration".*

Students need to realize independent learning, information seeking and problem solving to excite them, which can be the basis for lifelong learning. Murugesan (2019) summarises the advantages of modern teaching methods as follows:

- They are participating in a media revolution that is profoundly affecting the way they think about and use information technologies.
- They are improving the way people learn in terms of learning fashions,
- improving their skills and abilities in applying their learning environment to real life situations,
- working in groups to learn cooperatively and collaboratively,
- to develop self-learning habits at their own pace and in their own time,
- they learn with the teacher and not from the teacher,
- to develop habits of inquiry-based learning,
- to use the right information in the right place at the right time to achieve the right goal,
- to investigate and explore qualitative data,

- share learning experiences and information with other students and teachers around the world.

In the following part we will briefly describe these methods.

Problem-based learning uses complex, real-world cases as subject matter and helps students develop problem-solving skills and learn concepts rather than just absorbing facts. Thus, it is not about the traditional transmission of information and knowledge, but about solving an operational life situation using a practical example. Case study method can be a good example of it.
The **case study** provides a practical example of scenarios based on a real business situation. Teachers begin by having students read the case and summary together. Students then work in small groups to solve the case. Teachers set milestones that define what students should accomplish so they can better manage their time.
Gamification is the use of game elements and techniques (not in a game context) to engage people and solve problems (Deterding et al., 2011). Play is not just a self-serving, fun leisure activity, but a potentially value-adding tool that can transform all areas of life, make them effective and, not least, improve well-being and leisure mood (Fromann, 2017). This is exactly what is needed in 21st century education on a new foundation, namely easy learning when students can create interest, engage in collaboration, and learn through play.
Presentation skills are an essential part of modern teaching methodology, making it easier for students to navigate the future workplace. The main purpose of presentations is to develop professionalism. By using advanced technology, students can improve their skills.
Project-based learning is a teaching method in which students apply their knowledge and skills through an experience that provides them with opportunities to deepen contextual learning and develop important skills. It is more than just doing a project. This method connects students to the real world and prepares them to take on and overcome the challenges.
In the **flipped classroom**, the learning process is disconnected from the average. It is a learning method where students read and watch the content already at home and then absorb it at school. This has the advantage that students can acquire the information at their own pace.
Cooperative learning is an instructional strategy in which small teams of students are formed. They have different skills and abilities so that they can learn from each other. At the same time, their understanding and cooperative skills improve. It is easy to implement and not expensive.
Design thinking is a student-centred approach that can support creative thinking and problem solving in innovative ways. It is an iterative process and provides a solution-focused thinking that helps achieve empathy with the target audience.
Thinking-based learning teaches students how to think and make decisions. In class, students practice critical and creative thinking as they put theoretical knowledge into practice. The teacher's primary role is to show students how to find and analyze relevant information.
In **competency-based learning**, students' desired outcomes are the focus of the learning process. In this method, students are encouraged to learn in a specific way so that they can acquire the required competencies. It is a flexible way to provide a personalised learning path.
If we summarize the new methodology, we can state that the online environment, information technology, is an integral part of the development of new learning methods. When the three components of learning - cognitive, affective, and conative - and even metacognition are well

balanced, these domains create a holistic learning experience that enables knowledge acquisition, self-directed learning, and lifelong learning skills. (Leary, 2012).

Problem-based learning

Students need to realize independent learning, information seeking and problem-solving to excite them, which can be the basis for lifelong learning. We briefly describe below the main methods that can be utilized.

Problem-based learning uses complex, real-world cases as subject matter and helps students develop problem-solving skills and learn concepts rather than just absorbing facts. Thus, it is not about the traditional transmission of information and knowledge, but about solving an operational life situation using a practical example. The case study method can be a good example of it.

Problem-solving is presented differently in the various schools of psychology. Associated with Koehler's name is "insight-based learning," according to which we must allow students to solve the problem themselves. Problem-based learning has been brought to life in practice since it was applied at McMaster Medical College in Canada in the 1960s (Schwartz, P. et al., 2001). Theoretical knowledge is deepened when experienced by students in practice as it provides the opportunity to see causal relationships. Problem-based learning creates a special environment where the student becomes a small group or individual while acquiring new knowledge in a different way than traditional learning. After its initial successes, problem-based learning has expanded to other disciplines as it can be applied to any subject with a little creativity. Sherwood (2004) describes problem-based learning as a great opportunity for management education as this approach succeeds in bridging the gap between theory and practice. Problem-based learning is a comprehensive approach to teaching methodology based on the theory of cognitive learning (Moust et al., 2005). Cognitive psychology is concerned with the functioning of consciousness, the mental process, and its characteristics. Piaget talks about "internally motivated learning". In problem-based learning, I try to introduce case studies that arouse students' interest to the point that they want to solve the task. Bruner advocates "inquiry learning" in problem-based learning because students' existing knowledge, skills, and abilities are constantly improving as they process information. However, this requires that "students understand the structure of the curriculum." Students are much more open with each other than with their teachers. This allows all students to actively participate in group work.

"*Nilson (2010) lists the following learning outcomes related to problem-based learning. A well-designed problem-based learning project provides students with opportunities to develop skills related to: (1) working in teams, (2) managing projects and holding a leadership role, (3) oral and written communication, (4) self-awareness and evaluation of group processes, (5) working independently, (6) critical thinking and analysis, (7) explaining concepts, (8) self-directed learning, (9) applying course content to real-world examples, (10) research and information literacy, (11) problem solving across disciplines." Weber (2007) summarizes the characteristics of problem-based learning, which are listed below. (1) "active learning and active student participation, (2) learning is a self-directed process, (3) students build their knowledge, (3) students are aware of what they have learned on their own to better understand or solve a particular problem, (4) students participate in structured processes in various roles, contributing to effective group learning and problem-solving, (5) this requires teamwork and communication skills." Problem-based learning*

is a process that is used to identify problems with a scenario to increase the knowledge and understanding. Some of the principles are listed below. (1) "Independent and self-directed learning. (2) Learning happens in a group and the teacher is a facilitator. (3) All groups must participate equally. (4) Students learn about motivation, teamwork, problem-solving and engagement with the task. (5) Materials such as Data, photographs, articles, can be used to solve the problem." (Ali, 2019, p.73)

Problem-based learning begins with a situational analysis of a real business problem, where students identify the problem based on their prior knowledge and gather suggestions to solve it. Learning is supported by instructors and a variety of primary and secondary sources of information. Students will then evaluate each option for feasibility. The instructor's role is to analyze the decision-making process, think critically and creatively, and help students identify roles and support them in solving the problem with their questions.

The application of problem-based learning is highly dependent on the preparation of the method as well as the level of detail in the curriculum design. The most important task of the teacher is to explain the purpose of problem-based learning and support the students' ideas and initiatives. Students get used to the new schedule from lesson to lesson and their brain starts to solve the tasks. More support from the teacher is needed in the initial phase, which is then gradually reduced so that the barriers for the students are broken down, the groups are free to make their decisions and they begin to enjoy the work process.

Barrett et al. (2005), Barrett (2006, p.15) and Barrett (2017) suggest the following steps to begin the problem-based learning process.

1. *"First, students are presented with the problem.*
2. *Students discuss the problem in a small group.*
   - *They clarify the details of the case.*
   - *They narrow down the problem.*
   - *They brainstorm ideas based on their existing knowledge.*
   - *They determine what they need to learn to solve the problem that they do not already know (curriculum).*
   - *They discuss the problem.*
   - *An action plan is created to solve the problem.*
3. *In addition to the lesson, students work out the content of the syllabus on their own. The source of information is libraries, databases, the Internet, and professionals.*
4. *We return to the problem-based learning presentation, share the information as a group, and work together to solve the problem.*
5. *Students present and discuss the solution to the problem.*
6. *Students review what they learned in solving the problem.*
7. *Evaluate each student's process and contribution to the task."*

The roles in problem-based learning are fundamentally different from the usual roles. Students, rather than the instructor, are the focus, are involved in their learning, and take responsibility for their knowledge. This requires different behaviours and responsibilities on both sides.

In problem-based learning, an active learning environment should be created where students begin a kind of self-learning process. Once their interest is piqued, the data and research they gather as they grasp the problem will automatically broaden their horizons and shape their approach. Interdisciplinary thinking is often essential to solving a problem.

The success of problem-based learning relies heavily on the teacher acting as a mentor, facilitating the processes, and gently guiding the group's thinking process and work. Understandably and descriptively, they outline various problem-solving options with the students. The goal is for the instructor to encourage student self-learning and self-development. The instructor is not involved in the discussion, but only an observer. Well-formulated questions should stimulate thought; advice should be given only as a last resort when it is already necessary. Rather, more detailed explanations should be given, not necessarily advice. If students understand the nature of problem-based learning, the teacher's activity can be reduced. *Colburn (2000) made the following suggestions for educators regarding problem-based learning: (1) "ask open-ended questions, (2) wait for students to answer the questions and give them time to process the questions, (3) repeat or rewrite the ideas but do not criticize, (4) do not tell students exactly how to do a particular activity. (5) Maintain discipline and deal with behaviour problems. problem-based learning may not work effectively for all students and teachers".* The teacher acts as a mentor in ongoing communication, support, and makes assessment.

In group work, each student is allowed to contribute to the common solution through his or her work. In discussions, students express their own opinions, shaping the attitudes and knowledge of others. Interaction promotes better communication and adaptability.

In problem-based learning the situation is reversed, it is not the teacher who passes on new knowledge to the students, but they become aware of what knowledge is still missing to solve the problem. The teacher helps the students to master the required curriculum. Of course, students have different abilities, so the level, source and material of teacher support are different. Therefore, in the course of learning, they jointly determine what goals should be achieved and how to get there. As a result, students accept collaboration throughout their studies that prepare them for their future careers. They equip themselves to deal with critical comments and learn to compromise, defend their own opinions or suppress them in a given situation. Students develop a set of values related to the quality of their task performance within their group so that they perceive the performance of both them and others. Within the group, students can try their hand at being a leader, information gatherers, researchers, problem-solvers, decision-makers, communicators and presenters, thus strengthening their existing and newly acquired skills.

Savin-Baden (2000) describes the benefits of problem-based learning as follows: (1) "adaptation and participation in change, (2) ingenuity in new and future situations, (3) creative and critical thinking, (4) holistic problem orientation, (5) recognizing and acknowledging differences/similarities between perspectives, (6) cooperation in groups, (7) the possibility of recognizing learning gaps and strengths, (8) strengthening self-directed learning, (9) developing effective communication skills, (10) management of different data sources".

Of course, there are also difficulties in using problem-based learning, which is described by Akinoğlu and Özkardeş Tandoğa (2007), as follows: (1) "A challenge to change teaching style. (2) Students need more time to solve problematic situations. (3) Some groups may finish the work earlier or later. (4) problem-based learning requires a good curriculum and research reports. (5) It is difficult to implement problem-based learning in all classes, especially for students who do not fully understand the value and scope of social content problems".

In the case of frontal teaching, when the teacher introduces the new curriculum, there is little interaction between students, during which they are not involved in the curriculum, so attention is easily diverted. However, according to K. Nagy (2011, p. 14), the reduction of the teacher's pedagogical role leads to an increase in interaction, collaborative activity and student work, i.e. the reduction of the teacher's instructions and interventions has a positive effect on the children's

independent work. Problem-based learning is a good way to increase interaction between students in the classroom, which is an excellent tool to analyze the real situation of business life with the help of case studies. It is worthwhile to complement the processing of case studies with cooperative learning situations and gamification elements.
In summary, problem-based learning is an active way for students to learn basic problem-solving skills and gain new knowledge through interaction with each other, a key skill needed in almost every work environment (Phungsuk et al., 2017). "*In high-tech societies, workplace interaction plays an increasingly important role. Teamwork has come to the fore" (Kagan, 2009).* During problem-based learning, students gain experience that will benefit them in the workplace after graduation.

Case study method

The case study provides a practical example of scenarios based on a real business situation. Teachers begin by having students read the case and summary together. Students then work in small groups to solve the case. Teachers set milestones that define what students should accomplish so they can better manage their time.
The case study method is a form of problem-based learning. "*Cases are narratives, situations, selected data samples, or statements that represent unresolved and provocative issues, situations, or questions" (Indiana University Teaching Handbook, 2005).*
Bruner (1991) explains the case method:

- *"It is effective: it employs active learning, involves self-knowledge, and the teacher acts as a facilitator.*
- *It promotes critical thinking skills: it uses the teacher's questioning skills and employs discussion and debate.*
- *Practises an administrative point of view: it requires students to develop a framework for decision making.*
- *Models a learning environment: it allows for the exchange and flow of ideas from one person to another and builds trust, respect, and risk-taking.*
- *Models the process of inductive experiential learning: it is valuable for promoting lifelong learning. It also promotes more effective contextual learning and long-term retention.*
- *It mimics the real world: Decisions are sometimes based not on absolute values such as right or wrong, but relative values and uncertainty."*

The most important thing in designing a case study is that it is based on a real business situation and creates a desire for knowledge. It is important to build on the skills acquired in the acquisition of previous subjects. The aim is for students to actively seek out opportunities to formulate their proposals on a particular topic. Group work aims to strengthen collaboration, shared thinking, discussion and implementation between students.
Steps of case study method:

1. Choose an appropriate case that is the best fit for the topic.
2. Develop effective questions.
3. Set ground rules with students.
4. Get students prepared.
5. Share the solutions
6. Evaluate, comment

In eliminating the problem, students gain fundamental knowledge and experience that they can use in other areas. The lecturer needs to see not only his field but also the related fields. Therefore, the case study method requires an interdisciplinary mindset.

There is no perfect solution to the current problem. The point is to creatively include multiple alternatives. This allows students to experiment freely and explore more arguments. Students must enjoy the learning process.

The initial problem of lesson planning takes a lot of time at first, but with practice it becomes routine. The teacher should stay in the background but have a clear overview of the lesson content, understand the problem, stay attentive with directed questions, and assist.

Groups of students should draw up a correct timetable (Gantt chart) of the tasks they want to complete week by week to get the job done properly. It is also worthwhile to include the division of tasks within the group in the schedule. The instructor will help with collaboration.

It is useful for instructors to regularly share their experiences in using the case study and discuss difficult situations. By discussing best practices, the methodology can be constantly improved.

In the case study method, the evaluation is also different from usual. It is difficult to assess subjective factors such as problem-solving skills, synthesis skills, critical and creative thinking, independent action, and group collaboration. In traditional teaching, memorized knowledge is taken into account, while here the emphasis is on the process. In summary, the following assessment methods can be used for the case study method: oral reports, process diaries, self-assessment, student assessment, instructor assessment, instructor observations, notes on individuals, tracking online interactions. It is advisable to consider multiple dimensions and address them in parallel during the assessment. The more factors we consider, the completer and more detailed the picture we get of the group and the individual. Feedback is warranted after each subtask. It can be part of the lesson for each group of students to give their opinions on each other's assignments.

The instructor should accurately record the performance, strengths, and weaknesses of the various groups and each student and suggest ways to optimize the purpose of the learning activity. In this way, students must improve their work.

"Depending on the goals of the course, the instructor may encourage students to be systematic in their analysis. For example:

- *What is the problem?*
- *What is the goal of the analysis?*
- *What is the context of the problem?*
- *What important facts should be considered?*
- *What alternatives are available to decision-makers?*
- *What would you recommend - and why?" (BU, 2021)*

In group work, there will naturally be more active and more passive members among the students. The role of the instructor is to assist the less active members with questions and instructions. In time, students will recognise their role in the group, identify with it, and find it challenging. The instructor should get the students to test their talents in other roles through various instructions to overcome weaknesses. Healthy competition between groups will also help you progress.

Student group work is characterized by interdependence because, to achieve a common goal, a good grade, there is constant communication within the group, which makes learning a social

activity. In my opinion, students are involved in the acquisition of knowledge so that they can even learn the curriculum in class.

"Most "full-fledged" cases have these common elements:

- *A decision-maker grappling with an issue or problem that needs to be resolved.*
- *A description of the context of the problem (a law, an industry, a family).*
- *Supporting data, which can range from data tables to links to URLs, cited statements or testimony, supporting documents, images, video, or audio" (BU, 2021).*

Using the case study, students are confronted with real business problems, so they must constantly adapt to changing conditions. This requires different skills and abilities than traditional learning. They are forced to work together as a group because their semester grade depends on it. Of course, in any group, there will be people who are good to communicate and working with, and those who are more difficult. This will also be the case in their future jobs. The case study comes alive. Students automatically set in motion a self-learning process as they can identify and address their weaknesses in dealing with the situation.

Traditional teaching seems easier and more common, especially when there is a lot of subject matter to teach and preparation takes a lot of time. Both the instructor and the students have to step out of their comfort zone in some situations and clear the way for the inexperienced. But after a few times, this path also becomes familiar.

This method also requires the lecturer to have different skills than traditional teaching, namely communication, counselling and mentoring skills that are just needed in a particular situation. And when the new method is combined with gamification, mastery of computer programs is also crucial. The following competencies can be developed using the case study method.

- Social competence: working cooperatively in a group, solving problems together,
- Cognitive competence: developing shared thinking, developing a systems approach,
- Communicative competence: developing communication skills and competencies through group discussion and adaptation.
- Personal competence: recognizing individual strengths through teamwork.

"A major advantage of teaching with case studies is that students are actively involved in figuring out the principles by abstracting from the examples. This develops their skills in (1) problem solving, (2) Analytical tools, quantitative and/or qualitative, depending on the case, (3) decision making in complex situations, (4) dealing with ambiguities" (BU, 2021). Bonney (2015) has shown that the case study teaching method improves student performance and perceptions of learning gains.

Gamification

Gamification is the use of game elements and techniques (not in a game context) to engage people and solve problems (Deterding et al., 2011). Play is not just a self-serving, fun leisure activity, but a potentially value-adding tool that can transform all areas of life, make them effective and, not least, improve well-being and leisure mood (Fromann, 2017). This is exactly what is needed in 21st-century education on a new foundation, namely easy learning when students can create interest, engage in collaboration, and learn through play.

The use of gamification in education is still a new, innovative element that enriches everyday teaching. The purpose of gamification is to motivate the learner and achieve self-directed learning.

However, the online environment, information technology, is an essential component in the development of new learning methods.

Therefore, the use of gamification is a great opportunity in traditional education, where we often deal with unmotivated students, making it difficult for educators to engage them in learning activities (Marcos et al., 2014). Gamification is the use of game elements and techniques (not in a game context) to engage people and solve problems (Deterding et al., 2011).

"Gaming is not just a self-serving, fun leisure activity, but a potentially value-adding tool that can transform all areas of life, make them effective, and, not least, improve well-being and leisure mood" (Fromann, 2017, p. 15). This is exactly what is needed in 21st-century education on a new basis, namely easy learning when students can create interest, collaborate and learn through play. In the field of education, Prievara (2015) found that gamification can improve collaboration between students and between teachers and students. *According to Rab (2013), "the right approach to gamification in education can be based on changing attitudes"*. Fitz-Walter et al (2012) have shown that this method is extremely effective in engaging students in extracurricular activities.

The growing gap between generations, due in part to the information technology revolution, presents a significant challenge, especially for educators and educational institutions (Fromann and Damsa, 2016, p. 77). Generations Y and Z use the Internet for several hours a day, an activity focused on communication and information gathering processes. ICT (information and communication technology) is a part of students' lives, which means a way for them to have fun and relax. The use of technology expands opportunities, accelerates learning in a problem-based learning environment, and can also be an effective constructivist pedagogical approach to encourage the use of various ICT tools in the classroom (Czékmán et al., 2017, p. 71).

According to Rigóczki's (2016) interpretation, the game mechanisms or operating principles are as follows: The game is self-contained, voluntary, promises success, liberating feeling (flow), the game has a guaranteed time, transparent - the results are predictable, the rules are clear, the player sees how things stand - or the game takes place in a social space where players can communicate with each other, help each other. A distinction is made between the elements that serve the process of the game and those that are responsible for its reinforcement, i.e. motivation. Elements that characterize the process of the game: the story and characters, presentation (the game can be followed visually), the division into elements, stages accompanied by a scoring system, feedback, quests (independent episodes that are more or less independent of the basic story), performance indicators (points, leaderboards, etc.) and levels.

Kapp et al. (2014) "distinguishes between two directions of game-based learning: content-based game, where the curriculum itself becomes a game (e.g., with a frame story), and structural game, where game elements and mechanisms are assigned to the curriculum"

Nicholson (2015, pp.4.) defined the components of the gamification system with the acronym RECIPE. The RECIPE for meaningful gamification is the following. "To operationalize these concepts, six elements inspired by game design will now be explored more in-depth:

- *Play – facilitating the freedom to explore and fail within boundaries*
- *Exposition – creating stories for participants that are integrated with the real-world setting and allowing them to create their own*
- *Choice – developing systems that put the power in the hands of the participants Information – using game design and game display concepts to allow participants to learn more about the real-world context*

- *Engagement – encouraging participants to discover and learn from others interested in the real-world setting.*
- *Reflection – assisting participants in finding other interests and past experiences that can deepen engagement and learning."*

The structure of gamification consists of elements of computer and video games through which participants can be well motivated and thus kept in the game (Barabási, 2018 according to Czibor and Ferkov, 2012 and Éberfi, Engelhardt and Kutor, 2017):

- Points, scoring systems: they are available for completing a task and providing feedback to game participants. They add up throughout the game, so they are constantly growing. However, thanks to the immediate feedback, the player also has the opportunity to correct his mistakes.
- Levels: by reaching a certain number of points, the player advances in the game, his character develops, which also provides feedback on performance.
- Leaderboards: they are used for comparison so that the participant of the game can track his position compared to other players.
- Badges: on the one hand they can express rank, on the other hand, they symbolize continuous progress. In some cases, they can also trigger levels.
- Onboarding: the impression the player gets in the first few minutes is crucial for the rest, so it is important to make the start interesting and fun for them. To achieve this, it is not advisable to load a lot of information.
- Challenges and Quests: show the player what they have to do in the game, but also flash the bigger goal in front of them. Short-term and moderately difficult challenges tend to have the most motivational power.
- Virtual Goods / Wealth and Gifts: obtained by solving tasks. These can vary: they can stand out from the rest of the player, or they can be given away or given to teammates later.
- Customization: in the game, you can choose avatars, select the background, edit the user profile. All this is possible to make the player feel comfortable and loyal to the game.
- Feedback: is displayed in cycles so the player knows what position they are in.

Gamified teaching is often used to encourage active student participation and promote a creative way of thinking. Playful learning is more interesting, exciting and more importantly, it helps you avoid the feeling of failure in class. The psychological basis of learning through play is to create a connection between feelings of success. In conjunction with a successful learning experience, we trick our brains into becoming addicted to learning.

It is also important to include technology because phones and the internet are now part of our everyday lives, that is why we should not ban their use in education. Completely changing the system of rewards and punishments, collaborating with other students to achieve certain goals, eliminating competition between kids - these are all means of gamification that led to deeper, more hands-on lessons that get students excited about learning.

Using different gamification elements and game programs, such as Kahoot, is also a good motivational tool. It is worthwhile to use gamification at the end of the training, where participants can repeat what they have learned with a game test. Members of Generations Y and Z like hands-on thinking and game-based learning. This is a good incentive for the training participants to pay attention to what is being said.

We use gamification in the form of an online quiz so that we ask for new knowledge at the end of the lesson. The feedback from the students is positive, they like to learn in a fun way. In education, Prievara (2015) found that gamification can improve collaboration between students and teachers and students.
The application of gamification in education offers a new way to motivate students. The method can be used to identify individual learning paths where the student becomes part of their learning. Learning is an active process that happens much faster when the learner is involved and takes responsibility for their work.
The benefits of gamified learning are:

- Students feel that they are responsible for their learning.
- A more relaxed atmosphere in terms of failure, as learners, can simply try again
- More fun in the classroom
- Learning becomes visible through progress indicators
- Learners can discover an intrinsic motivation for learning
- Learners can explore different identities through different avatars or characters
- Learners often feel more comfortable in-game environments and are therefore more proactive and open to making mistakes
- Higher levels of student engagement and concentration
- The opportunity to think outside the box. Tasks are no longer just about completing a worksheet - what are the wider implications of a game.

Project-based learning

The project method emerged in the United States in the early twentieth century as a critique of the traditional school. In traditional schooling, the application of knowledge is disconnected from knowledge itself; it is not clear what the knowledge learned in each subject can be used for. The conception of the project method was based on the principles of John Dewey (1859-1952), who emphasized the following connections, among others.

- Learning should be based on personal experience.
- Instruction should take into account the developmental needs and interests of the learner.
- The learner must be actively involved in shaping his or her learning process.
- The learner should be educated to participate actively in the affairs of the community and to become a citizen who feels responsible for the community.

„Project-based learning (PBL) is a model that organizes learning around projects" (Thomas, 2000). *"The core idea of Project Based Learning is that real-world problems capture students' interest and provoke serious thinking as the students acquire and apply new knowledge in a problem-solving context. The teacher plays the role of facilitator, working with students to frame worthwhile questions, structuring meaningful tasks, coaching both knowledge development and social skills, and carefully assessing what students have learned from the experience"* (David, 2008)
"In project-based learning, students work in groups to solve challenging problems that are authentic, curriculum-based, and often interdisciplinary. Learners decide how to approach a problem and what activities to pursue. They gather information from a variety of sources and synthesize, analyze, and derive knowledge from it. Their learning is inherently valuable because it's connected to something real and involves adult skills such as collaboration and

reflection. In the end, students demonstrate their newly acquired knowledge and are judged by how much they've learned and how well they communicate it. Throughout this process, the teacher's role is to guide and advise, rather than to direct and manage, student work." (Solomon, 2003) Steps for applying the project-based learning technique:

Step 1: Preliminary planning

It may be developed by the teacher or with one or more colleagues who have experience with the PBL method. The plan should be well thought out but flexible enough to be changed at any time.

- **Choice of topic:** Choose a topic that the students like. So it is worth involving them in the choice of topic as well. Usually there is a compromise solution, where the main topic is given by the lecturer, but the concrete implementation, subtopics, etc. are worked out together with the students. To do this, it is necessary to clarify in advance exactly what the goal of the project is: how to stick to the original idea of the lecturer and how to give free rein to the ideas of the students. The process of collective topic selection can be well supported by the technique of brainstorming. Choosing an original, distinctive project topic - while the children discuss and discard other ideas - is in itself an inspiring, creative task.
- **Objective:** Define what we want to achieve with the PBL method in the classroom and what kind of knowledge we want to impart. For example, organize a party for the students to attend and define in advance what learning objectives we want to achieve - e.g. history, literature, communication, drama - and design the process so that they really have a chance to achieve these objectives. A project will only work if this goal is known to the participants and they take it seriously and really want to achieve it, even at a high level.

Step 2: Planning and organizational tasks

- **Assess what is needed:** Do I need money to carry out the project? If so, how much and from what source? What resources will be needed? Where can I obtain them? How much space will be needed for the project? How should the space be designed? What information will be needed? (What else do you need to look for)? Who else is / should be involved in the project? (e.g. definition of stakeholders)
- **Organize working groups, assign tasks:** Pay attention to group dynamics, i.e. make sure there are people in the group you can expect to work together without much conflict. When setting tasks, keep in mind the goals of the project (e.g., what skills the project should develop). Try to give members of the group tasks that they are good at so that they have a sense of achievement, but also tasks that will challenge them and give them the opportunity to develop.
- **Create a task plan and a schedule:** For more complex tasks, it is worth tabulating firstly the deadlines and secondly when and who is responsible for what. The table should also include the aspects already mentioned, such as the necessary tools. It is advisable to involve the participants in the planning as well, as this is likely to make them feel more comfortable with the tasks and participate more responsibly in the joint work. With a well thought-out task and schedule, it is possible to avoid participants being "ready to work" and having no tasks, and to reduce the likelihood of chaotic situations due to lack of time.

Step 3: Create a project protocol

In any learning process, it is extremely important that participants are intentionally involved. In the case of a project, this means that participants always keep in mind both the end goal of the project and the learning objectives as they work. This awareness process is served by the project diary, in which we continuously record the experience, i.e. ultimately what the participants have learned.

The project diary can be an individual diary, kept by each person, or it can be a collective diary of the whole project, in which the collective experiences are recorded. In the latter case, of course, someone must be assigned to keep a diary. For large projects, the most practical solution is for each smaller working group to keep its own collective diary.

Use the possibilities offered by your computer and the Internet for effective logging. The great advantage of a project diary kept on the Internet, possibly using a blog engine, is that the diary can be viewed and even commented on by everyone involved in the project, using the commenting features of blogs. (Publicity can of course be restricted, and it is advisable to set the preferences so that the project diary is only visible to project participants.) Another advantage of such reflective blogs is that the contributions of individual project participants or working groups can appear on a common interface, provided that the technical requirements are met. keep the same diary for more than one person. Last but not least, the teacher can keep an eye on the blog and comment on it.

Step 4: Conclusion and evaluation

The conclusion includes the presentation of the project results and the evaluation of the whole work process. The participants should be actively involved in the evaluation of the project, as in the whole process. The evaluation should follow a system with four criteria.

1. The work should be evaluated in terms of the process: how effective the joint work was.
2. The work should be evaluated in terms of learning: What learning took place during the implementation of the project?
3. Finally, the work should be evaluated in terms of the development of social relations: whether the team was able to work together, whether there were conflicts and whether they were able to manage them.
4. Evaluate the work in terms of the objectives set: Did the project meet the goals set, and if any of the goals were not met, what could be the reason?

The more specific and personal the evaluation, the better. On the other hand, participation in the project cannot be assessed in a traditional way and that the role of self and peer assessment is strengthened. Regardless of which assessment is carried out, the criteria must be communicated to the participants in advance.

In addition to the final act of assessment, it is also necessary to continuously monitor and evaluate the partial results during the work process, especially for more complex, longer-term projects. The written recording and logging of the steps and partial results of the implementation is very helpful in the evaluation.

Advantages of the method

"Assuming that all students cannot learn in the same way, educators need to develop and implement alternative teaching methods (Muthukrisma et al., 1993). Thus, Project-Based Learning isn't limited in terms of knowledge

and information, but rather with their teacher's help, it provides students with the opportunity to transform themselves during the learning process (Aggelakos, 2003). Nowadays, learning to read is no longer enough. Knowing how to solve problems, working collaboratively and thinking innovatively are considered to be 21st-century essential skills. Therefore, Project-Based Learning is generally accepted as an effective method for teaching processes, such as problem-solving and decision making (Thomas, 2000). Besides, experts should help in developing a character's emotional, social elements apart from cognitive (Katz, 2000). Other positive outcomes by using Project Based Learning are the reduction of students' anxiety (Boaler, 2002), and the enhancement of students' learning quality compared with conventional teaching methods (Thomas, 2000)." (Efstratia, 2014)

Disadvantages of the method

"On the other hand, Project-Based Learning is marginalized by the educators themselves, since they lack both training and experience in implementing this approach. Furthermore, deficient finance and technology are challenges that teachers have to overcome, while evaluation can be also ineffective when students use technology. Venturing into an alternative method opposed to sterile memorization discourages teachers since they are supposed to manage additional activities and demands, such as helping collaborative student investigations (Arhontaki and Filippou, 2003 cited in Katsarou and Dedouli, 2008)." (Efstratia, 2014)

The success of the method

"*It is undoubtedly true that a Project-Based Learning method is successful when seven essential elements are fulfilled. First and foremost, teachers should engage students' interest and "need to know" and at the same time stimulate them by making a capturing driving question (Larmer and Mergendoller, 2010). Moreover, students are in charge of deciding whether they will use resources, how they will cooperate and communicate to achieve the goal of their challenging project (Frey, 1991). Besides, critical thinking is enhanced, and students can easily conduct their inquiry as well as innovate by exploiting sometimes the advantages of technology (Larmer and Mergendoller, 2010). An example is when a whole class of iPad launch their research, while at the same time they are connected to the teacher's presentation to discuss a project. This technological improvement allows students to interact and simultaneously submit questions and answers (Webster, 2012). Finally, feedback and revision are also important before a student's presentation in front of a real audience (Frey, 1986)."* (Efstratia, 2014)

After all, before deciding on a learning method, you must first get to know your staff, as their strengths and limitations are the most crucial factors to consider during the selection process! You must pick the right type, particularly if you want your employees to be productive! If you want your SME to grow, you must constantly improve!

Module 6: Digital tools for teaching and learning

Digital tools for teaching and learning

Lastly, we would like to present numerous different digital teaching methods, that can be found in practice. All of them can be very useful if applied to the right circumstances and the corresponding

problems. These techniques and resources serve as supplementary tools for the methods we discussed earlier. Some of them are generally known, some might mean novelty for the reader. Let's take a look at the list of the most commonly used tools based on Hart (2021).

Tool	Discription
Word	Microsoft Word is a popular and versatile word processing tool used for creating all kinds of documents. ▪ Website: microsoft.com/word ▪ Cost: Commercial. Free Trial ▪ Availability: Download. Online at Office365
Google Classroom	Google Classroom is a free blended learning platform for schools that aims to simplify creating, distributing, and grading assignments. The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students. ▪ Website: classroom.google.com ▪ Cost: Free. ▪ Availability: Online
Gmail	Gmail is a free web-based email service from Google. Also part of G Suite. ▪ Website: gmail.com ▪ Cost: Free ▪ Availability: Online
Microsoft Teams	Microsoft Teams is the team workspace in Office 365. ▪ Website: teams.microsoft.com ▪ Cost: Office365 requires a subscription ▪ Availability: Online
Quizizz	Find and create quizzes. It works on any device with any browser. Live. ▪ Website: quizizz.com ▪ Cost: Free. ▪ Availability: Online
Canva	

Tool	Discription
	Canva is a graphic design platform that allows users to create social media graphics, presentations, posters and other visual content. ▪ Website: canva.com ▪ Cost: Free and Premium plans ▪ Availability: Online and iPad app
Genially	Genially is a single platform for all types of interactive content ▪ Website: genial.ly ▪ Cost: Free and premium versions ▪ Availability: Online
Adobe Spark	Adobe Spark is an integrated suite of media creation applications It comprises three separate design apps: Spark Page, Spark Post, and Spark Video. ▪ Website: spark.adobe.com ▪ Cost: Free. ▪ Availability: Online. Download app
Moodle	Moodle is an open-source learning platform for K12, higher education and workplace training. ▪ Website: moodle.org ▪ Cost: Free. Open-source ▪ Availability: Download
EdPuzzle	Edpuzzle lets you take any video off the web, edit it, add notes and questions for students and create virtual classrooms where you can monitor student work. ▪ Website: edpuzzle.com ▪ Cost: Free. ▪ Availability: Online
Kahoot	Kahoot is a game-based learning platform for business and education. ▪ Website: getkahoot.com ▪ Cost: Free and premium plans ▪ Availability: Online

Tool	Discription
Mentimeter	Mentimeter is a tool that lets you engage and interact with your audience in real-time. ▪ Website: mentimeter.com ▪ Cost: Free and Premium versions ▪ Availability: Online
WhatsApp	Not just a personal messaging app, it's broadcasting and group functionalities make it a valuable communication tool ▪ Website: whatsapp.com ▪ Cost: Free ▪ Availability: Download app
Telegram	Telegram is a cloud-based mobile and desktop messaging app with a focus on security and speed. ▪ Website: telegram.org ▪ Cost: Free ▪ Availability: Download
Google Docs & Drive	Google Docs is used to create documents, Google Sheets for spreadsheets, and Google Slides for slide sets – individually or collaboratively. Google Drive is the cloud storage service, where you can also up host other files. ▪ Website: google.com/docs ▪ Cost: Free ▪ Availability: Online
Wikipedia	Wikipedia is a key resource for quickly finding out about a topic, and then for delving into primary resources for deeper information. ▪ Website: wikipedia.org ▪ Cost: Free ▪ Availability: Online
Google Forms	With Google Forms, you can create and analyze surveys online. ▪ Website: google.com/forms/ ▪ Cost: Free

Tool	Discription
	▪ Availability: Online
Google Translate	Google Translate is a free online service for instantly translating text and web pages. ▪ Website: google.com/translate ▪ Cost: Free. ▪ Availability: Online
Mural	A digital workspace for visual collaboration ▪ Website: www.mural.co ▪ Cost: Paid plans ▪ Availability: Online
Padlet	Padlet is an online noticeboard, which means it can be used for personal note-keeping as well as collaborative brainstorming. ▪ Website: padlet.com ▪ Cost: Free ▪ Availability: Online
PowerPoint	PowerPoint is Microsoft's versatile presentation tool ▪ Website: microsoft.com/powerpoint ▪ Cost: Commercial. Free trial ▪ Availability: Download. Online at Office365
Camtasia	Techsmith's Camtasia is a tool to record, edit and enhance on-screen activity in the form of screencasts. ▪ Website: techsmith.com/camtasia.html ▪ Cost: Commercial. Free trial ▪ Availability: Download
Google Search	This powerful web search engine is often described as the only e-learning tool you'll ever need! ▪ Website: google.com ▪ Cost: Free ▪ Availability: Online

Tool	Discription
Facebook	Primarily used by individuals for personal networking, it is also used in education for study groups. ▪ Website: facebook.com ▪ Cost: Free ▪ Availability: Online
Excel	Excel is a versatile spreadsheeting tool from Microsoft for personal, corporate and education use ▪ Website: microsoft.com/excel ▪ Cost: Commercial. Free Trial ▪ Availability: Download. Online at Office365
YouTube	This video platform is both a key learning resource as well as a place for anyone to share their video content. ▪ Website: youtube.com ▪ Cost: Free ▪ Availability: Online
Zoom	Zoom unifies cloud video conferencing, simple online meetings, and cross-platform group chat into one easy-to-use platform. ▪ Website: zoom.us ▪ Cost: Free and Premium versions ▪ Availability: Online
Google Meet	Previous known as Google Hangouts Meet, it is now known as Google Meet. It is a place to hold impromptu video meetings as well as scheduled virtual training classes around the world ▪ Websites: meet.google.com ▪ Cost: Free. ▪ Availability: Online
Google Chrome	Flipgrid is a video discussion platform in education around the world. Owned by Microsoft ▪ Website: flipgrid.com ▪ Cost: Free and Premium plans ▪ Availability: Online

Tool	Discription
Google Chrome	Chrome is a web browser that can be used across multiple platforms. There are now many plugins and extensions available to extend its functionality. ▪ Website: google.com/chrome ▪ Cost: Free ▪ Availability: Download

Module 7: Project task on topic Digitalization supporting Customer-centric Innovations

Case study solution and group work

Case study: Dr. S. Chandrasekar - Dr. C. Vethirajan: A study on digital marketing- a case study with special reference to AMAZON.COM

Studies in India Name Places (UCG Care Listed Journal), ISSN: 2394-3114, Vol. 40, Issue 12 February 2020
https://www.researchgate.net/publication/340811469_A_STUDY_ON_DIGITAL_MARKETING-A_CASE_STUDY_WITH_SPECIAL_REFERENCE_TO_AMAZONCOM

Abstract:
In this world of digitization, digital marketing is a vogue that is sweeping across the whole world. The trend of digital marketing is growing day by day with the concepts of Internet marketing that is turning into an important platform of digital marketing along with the electronic gadgets like the digital billboards, mobile, tablets and smart phones, gaming consoles, and many such gadgets that help in digital marketing. Amazon with its innovative digital marketing has created a niche market in online stores competing with the conventional stores showing the power of online marketing. The case study analyses how Amazon.com has brought in an array digital and online marketing strategies to succeed and make it big in the digital marketing sector. The case also discusses how Amazon has had a huge success in the online marketing sector as they brought in new insights into the digital marketing field. And few years from now it will be eventually seen that the conventional marketing being replaced by digital marketing. Digital marketing is going to be top on the agenda of many marketers, and they might be looking for innovative ways to market online, reduce cost per lead, increase click-through-rates and conversion rates, and discover what's hot in digital marketing.

Key words: Digital marketing, Amazon.com, business model, insights

Introduction to digital marketing:

Digital marketing is a broad term that refers to various and different promotional techniques deployed to reach customers via digital technologies. It is embodied by an extensive selection of service, product and brand marketing tactics, which mainly use the Internet as a core promotional medium, in addition to mobile and traditional TV and radio. Digital marketing is also known as Internet marketing, but their actual processes differ, as digital marketing is considered more targeted, measurable and interactive. Digital marketing includes a raft of Internet marketing techniques, such as search engine optimization (SEO), search engine marketing (SEM) and link building. It also extends to non-Internet channels that provide digital media, such as short messaging service (SMS), multimedia messaging service (MMS), callback and on-hold mobile ring tones, e–books, optical disks and games.

A key digital marketing objective is engaging customers and allowing them to interact with the brand through servicing and delivery of digital media. This is achieved by designing digital media in such a way that it requires some type of end user action to view or receive the motive behind that media's creation. For example, to receive a free e-book, a customer might be required to register or fill out a form, benefiting the advertiser with a valuable customer or lead. Digital marketing communications can be distributed at a faster rate and broader reach than traditional marketing communications. While this idea is undoubtedly true, reaching a mass audience quickly by using digital technolgy does not constitute Digital Marketing. In fact, reaching a more targeted audience iteratively is a more clear definition of Digital Marketing

Marketing executive are most supportive of Digital Marketing because of the ability to easily track and measure results of the marketing communication. Because of the use digital technology, the results of a digital marketing effort can be tracked by reach, views, clicks, visits, response rates, purchases made and so on. I will explore the details and importance of these types of measurement techniques in thecoming weeks, but for now understand that Digital Marketing requires the ability to measure the results of a digital marketing campaign. The use of digital technologies to create an integrated, targeted and measurable communications which help to acquire and retain customers while building deeper relationships with them is digital marketing. It must be digital because of the technology. It is targeted because of the value in the technology allows it to be. It must establish relationships because marketing using digital technology generally requires input from potential consumers. It must be measurable because measurability is inherent in the use of digital technology andinherentintheuseofmarketing.

India has around 13.5 crore internet users today whereas the number of homes with Cable and Satellite (C&S) television is 10.5 crore. The expected internet users will reach a figure of 30 crore by 2015 and C&S homesare expectedto be 14 croreby 2015. Thus, India has a tremendous internet growth and with the customers getting accustomed to e-commerce, the future of e-commerce sector is definitely rosy. An approximated 25 lakh people have transacted online this year, the number is all set to increase with time. Also, to mention most of the Amazon customers use internet from PC's/Laptops to order goods. The use of mobile internet is very less at the moment,

but with the advent of smart phones the use of mobile internet for e-commerce transactions will soar with time. India has 8 crore mobile net users at the moment, the number is expected to swell to 22.5 crore by 2015.

Case study of Amazon.com:

Amazon was founded by Jeff Bezos in Bellevue, Washington, in July 1994. The company initially started as an online marketplace for books but later expanded to sell electronics, software, video games, apparel, furniture, food, toys, and jewelry. In 2015, Amazon surpassed Walmart as the most valuable retailer in the United States by market capitalization In 2017, Amazon acquired Whole Foods Market for US$13.4 billion, which vastly increased Amazon's presence as a brick- and-mortar retailer.[20] In 2018, Bezos announced that its two-day delivery service, Amazon Prime, had surpassed 100 million subscribers worldwide Amazon.com is an Indian e commerce company headquartered in Bangalore. Amazon.com, India's largest e-commerce player for physical goods started with books in 2007 and entered the consumer electronics category with the launch of mobile phones, in September 2010. Since then, it has grown rapidlywiththe introduction of innovative features like Cash on Delivery (CoD), 30 day replacement guarantee and its own delivery network. Today, their portfolio is spread across 12 categories – from books to music, mobiles, computers, cameras, home & kitchen appliances, TV & home theatre systems, personal and healthcare products and the newly launched stationery items. In addition to these, Amazon has also made a foray into the emerging digital content market with the recent launch of Flyte, the digital music store. The founders of Amazon have probably conquered their dreams with the amazing success of Amazon. Amazon is something which has really opened up the Indian e- commerce market and that also in a big way.

Amazon was born with an initial investment of 4 lakh. It was never going to be easy since India has had bad past experiences with e-commerce trading. It was not an easy segment to break into, people were very particular in paying money for something which they had not seen and received. The trust was missing in the Indian customers. So, what Amazon had to do was to instill trust and faith in their customers. Amazon began with selling books, since books are easy to procure, target market which reads books is in abundance, books provide more margin, are easy to pack and deliver, do not get damaged in transit and most importantly books are not very expensive, so the amount of money a customer has to spend to try out one's service for one time is very minimal. Amazon sold only books for the first two years. Amazon started with the consignment model (procurement based on demand) i.e. they had ties with 2 distributors in Bangalore, whenever a customer ordered a book, they used to personally procure the book from the dealer, pack the book in their office and then courier the same. In the initial months the founder's personal cell numbers used to be the customer support numbers. So, in the start theytried their best to provide good service, focus on the website - easy to browse and order and hassle-free, and strove hard to resolve any customer issues. Since there were not any established players in the market, this allowed them a lot of space to grow, and they did in fact grew very rapidly.

The company started opening its own warehouses as it started getting more investments. The company opened its first warehouse in Bangalore and later on opened warehouses in Delhi, Kolkatta and Mumbai. Today the company works with more than 500 suppliers. As on date more than 80% orders of Amazon are handled via warehouses which help in quick and efficient service.

Amazon derives around 50% of its revenue from selling books online. Amazon is the Indian market leader in selling books both offline and online, it enjoys an online share of around 80%. Amazon ships around 40000+ items on a daily basis. The average daily revenue is about INR 2.5 crore. 15+ million Titles are available on Amazon books. There are 2.6 million registered users on Amazon.4500 employees working in Amazon at the moment. Apart from this Amazon have 1.5 + million fans on facebook and about 67000 followers on twitter which shows its vast reach in social media. Social Media Marketing is used to the hilt, by Amazon.com In its social media initiatives, Amazon.com aims at facilitating an easier conversation channel for customers and users. Conversations are to the point and are targeted at specific issues, thoughts and ideas. Amazon.com began activities to make its presence felt on Facebook and Twitter about a year ago. The company has also used LinkedIn to connect with people. The popularity of the site has grown through recommendations i.e., people recommending the site to their family, friends and co-workers. And what better platform than social media to leverage 'word-of-mouth'! Amazon.com recognized that using social media is about being human.

Amazon has recently added a string of electronic items like calculators, water purifiers, microwave ovens, washing machines, dish washers, vacuum cleaners etc. Amazon has opened a music store which sells CD's and DVD's of movies' music releases and music albums. Amazon has also acquired Bollywood movie content from Chakpak. Since digital media in going to rise in near future, Amazon is geared up for the same. Soon it will start offering digital content like movies and songs online, as in the customers can pay and stream online digital content. Amazon will also provide e- books very soon. Amazon had a revenue of 4 crore in FY 2008 - 2009, 20 crore in FY 2009 - 2010, 75 crore in FY 2010 - 2011, expecting in FY2015 Rs 4500-5000 Crores.

An Analysis of Amazon.com's Business Model:

1. They always provide great customer service. Amazon customers are happier than with some of their competitors like Tradus.in, Indiaplaza.com.
2. Their website is great, easy to use, easy to browse through the products, add products to wish list or to a cart, get product reviews and opinions, pre-order products, make payments using different methods, in short hassle- free and convenient.
3. A very important point is that they introduced the option of cash on delivery and card on delivery. This way people demonstrated more confidence in buying products. An interesting fact, today Amazon sells 20 products/min and has a massive customer base; still more than 60% of the Amazon's customers use Cash on Delivery and card on delivery methods. This is because of two reasons, one is many people do not know how to make payments online. And secondly people do not have immense trust in e- commerce in India. Amazon also provides a 30 day replacement guarantee on its products and EMI options to its customers for making payments.
4. Amazon's reason of success is that it has a great customer retention rate, it has around 15 lakh individual customers and more than 70% customers are repeat customers i.e. they shop various times each year. The company targets to have a customer base of 1 crore by 2015.
5. The investment in social media has been in terms of time and effort. Almost everyone at Amazon monitors social platforms.

The digital marketing strategy of Amazon:

Amazon has been using digital for both building the brand and acquiring consumers. Amazon has been mostly marketed by word-of-mouth advertising. Customer satisfaction has been the best marketing medium for them. Amazon very wisely used SEO (Search Engine Optimization) and Google Ad-words as the marketing tools to have a far reach in the online world. Amazon.com official Facebook page has close to 10 lack 'likes'. Amazon recently launched a series of 3 ads with the tag line - "No Kidding No worries". Kids were used to create the adverts to send out the message - if a kid can do it, you can also do it. From a brand preference point of view, if the message is complex, the traditional medium works better as there are some restrictions in terms of innovation on digital. But that doesn't really mean that traditional media is imperative and is a must for building a brand. Social media has guaranteed a large reach for the companies. Today, one of the primary reasons that people are coming on to internet is Facebook. The objective on social media is to build a deeper engagement with the audience on these platforms.

The company has built a great brand name, they just have to maintain and enhance the same. It needs to keep introducing more products, adapting to the changing needs of the customer with time. Theen try of Amazon.com in 2012 in the Indian e-commerce space has been cited as a big challenge to Amazon. However, Amazon is a respected Brand name in India and should be able to compete with Amazon. Amazon being a very big company can bring in serious competition to Amazon, since Amazon can bear more losses in the beginning to gain customer base. But again, Indian market is growing at a rapid pace as access to internet increases and people become more aware of e-commerce sites and start trusting the same; hence Indian market is sufficiently big at-least for these two giants to co-exist beneficially. The company is currently valued at around 1 billion dollars i.e. 5000 crore. More importantly Amazon has ushered in the e-commerce era in India. This has generated massive interest in e- commerce sector; people are opening websites to sell anything from shoes to apparels to jewels to baby care products etc. This has helped in creating a lot of job opportunities and thus helps the Indian Inc. growth story as well.

The future of digital marketing based on the study:

Amazon CEOSachinBansal'smantrastoallthebuddingentrepreneursvyingtobuildaproduct company:

1. Be very focused on consumers.
2. Build amazing experiences for the customers.
3. Continuously innovate the product.

1. Shift from Tactical SEO to SEO Strategy

Last year, with the launch of hummingbird update from Google, search engine behavior changed and search engine algorithm improved for better. Therefore, SEO has to evolve now from tactical approach to long term SEO strategy. SEO strategy is the basically to

- define the target audience,
- focus on keywords that are relevant to the audience not search
- enhance quality of the content
- improve the presentation of search engine listings with mark ups
- reach the audience wherever they're online

- engage audience and help boost user generated content
- integrate SEO with complete digital strategy
- Concentrate on all organic such as organic SEO, organic link building etc.

2. Rise of Social Media Marketing in India

At 82 million monthly active users, India is the second largest audience base for Facebook in the world and it may possibly dethrone US on Facebook soon. India is positioned second for user population of LinkedIn at 20 million users, while for YouTube and Twitter user population from India goes up to 52 million and 42 million. There is easier and cost-effective access to middle class to upper middle-class people in India, that are mostly young and capable to spend large amounts, and they're target audience to almost all brands. Interestingly, local businesses are using social media especially Facebook to sell online in India. Hence, we can expect an unprecedented growth in social media users in India that will help social media marketing to experiment and become more popular tool for branding, online selling and customer engagement among businesses/brands.

3. Content Marketing

Content Marketing will be throughout in limelight. In India, people are extensively searching, researching and consuming content – text, audio (not that popular), image and video. Largely, social media networks are pushing for improved, meaningful and creative content marketing. Text is the foremost tool in SEO that will easily help you acquire higher ranks, reach targeted audience, engage your audience and convert them. It's at the top of all the game that you maybe planning. Images are usually subordinate to text and complement it, and they are highly popular among Indians. Images are known to trigger imagination and help in building trust. India has 54 million viewers that are spending uncountable hours to watch 3.7 billion videos per month. Brands in India are now realizing the power of video marketing and now developing creative and innovative video marketing campaigns to build their brand identity. All – text, image and video – constitute your content marketing. And more and more brands, businesses and organizations in India will understand its importance and will use it optimally in coming years.

4. Key Performance Indicators and Return on Investments

Brands and businesses were only investing without caring much for the returns on digital marketing. The 'conversion rate', 'key performance indicators' and 'return on investments will catch in trend across all sections of digital marketing in India. With the availability of deep analytics and increasing awareness of clients in India, the marketers will have to explain digital marketing ROI. Furthermore, Indian digital marketing consultants will use KPIs and ROI to improve their conversion rate, enhance customer experience and brand reputation. Today to convince an aware Indian client, its necessary to elaborate the possible cost-per-lead, each digital spend, return on each spend, and key performance indicators.

5. Viral Video Marketing

With up to 250 million Internet users in India, it's easy to go viral with something awesome. Brands and businesses will be planning to use viral video marketing with the help of social media networks

more effectively to reach large audience in India. Essentially, with video marketing in India it has become easier to build brand identity, improve brand storytelling and engage audience, and enhance brand loyalty. Viral video marketing will increasingly find many takers in India, given many advantages. At present, big brands, Indian cinema, Indian music, government of India, political parties, Indian educational organizations, and many others are successfully using video to entertain, educate and emotionalize audience in India.

6. Responsive/Mobile Marketing

Firstly, the easy availability of smartphones, tablets, phablets, and touchpads that is redefining mobility in India. Secondly, there is large audience (approx 130 million users according to IAMAI and IMRB) in India accessing Internet through mobile devices. Thirdly, Gartner says India to have 72 per cent mobile penetration by the year 2016. Fourthly, India's mobile video consumption has doubled and more than 65 per cent of Indians are sharing videos on mobile. Lastly, according to Facebook, there are 62 million Indians accessing Facebook through mobile. Mobile is the way forward in India, to reach Indians across India. In 2014, mobile applications, mobile advertising, mobile video marketing, and marketing on popular mobile networking apps such as WeChat, Line, Whatsapp, Vine, Snapchat, Instagram and others will increase exponentially. Return on mobile marketing investment will remain an issue that may disturb marketers. However, with m-commerce, mobile payments, and innovations by Google India, Amazon and many other market leaders, some breakthrough could be seen that would increase ROI on mobile marketing.

7. Localization

In India, localization has become endemic. It will gain further ground with the help of Google India search engine, Google Maps, online classifieds (e.g. Quicker), local online search engines (e.g. Just Dial), local listing websites (e.g. Grotal), vertical search engines (e.g. Zomato and ThinkVidya) and others. Moreover, websites will increasingly localize as well. In digital marketing industry, localization will increase among brands/businesses. Many local joints, bars, clinics, super stores, shops, restaurants, clubs, pubs, companies, organizations etc. will also invest in digital marketing to reach their audience online and specifically on mobile. In localization – timing, limited budget, content strategy, mobile marketing and advertising – will be great challenges that may disturb marketers.

8. Personalization

Personalization will evolve overtime in to much larger. However, there are privacy issues attached with it, but despite that, there are many takers for personalization to improve customer experience and delight. Google acquired NEST labs for US$ 3.2 billion. NEST labs manufacture smart home thermostat. Google uses NEST to know more about its customer for better customer experience. The point is personalization will not expand world, but also in India at much higher speed especially in e- commerce industry. As all are trying to enhance customer experience to push sales, by providing them more personalized services.

For effective personalization, businesses have to deeply understand their customer behavior and clickstream, and analytics will help them a lot to understand this. Variety of analytics and testing

will be used in further years such as heatmaps, deep analytics, customer journey, A/B testing etc. in order to know what their customers' wants, needs, and requirements in any particular time, season and moment.

9. Online and Social Customer Relationship Management

Many Indian e-commerce websites, portals and others do not have effective online customer-relationship management systems. Moreover, many customers are now comfortable on chat, email, mobile chat and social media. Therefore, companies are expanding its outreach to improve their CRM systems and enhance customer delight. Social CRM would be strategic of all, as many Indians are comfortable in using social CRM on the go.

10. Conversion Rate Optimization and Testing

Recently, conversion rate optimization and testing in digital marketing industry of India is picking upfast due to e-commerce boom in India. Conversion rate optimization and testing will be strategic to improve digital strategy, enhance outcomes and sales, and perk up customer delight. In India, many SEOs and digital marketers tend to ignore analytics, but in future, analytics will regain its due importance in digital strategy. Moreover, deeper analytics is bound to take place as Google has improved Google Analytics for deeper understanding of customer online behavior and background. In addition, analytics will largely drive CRO and testing in India. The CRO in mobile in India might also take place, as we know it increasingly in India users are purchasing through mobile apps on their smartphones and tablets. The biggest challenge for CRO and Testing will be the limited budget and ignorance.

11. Innovations in Online Payment System

There are lots of innovations in online payment system with new launches expected this year and boost in Indian e-commerce industry. Just recently, Visa and MasterCard launched new mobile payment services. With this technology, you can make payment through KitKat OS and NFC powered Smartphone. It uses Host Card Emulation feature of Android to save card details remotely in encrypted form and can be disabled remotely if phone is lost. In 2013, Amazon launched 'PayZippy', which is an online payment system made for Indian e-commerce websites. Similarly, PayU India also emerged as prominent contender, which is increasingly becoming popular among small/niche vendors. PayPal will have to optimize its system according to Indian situation and needs. For digital marketing industry, all these happenings will help them increase conversion rate of e- commerce websites and improve customer delight. Because most of the time in India, the cart abandonments take place because of the limitations in the online payment systems.

12. Ad Micro Targeting and Re-Targeting/Re-Marketing

In India, online advertising is set to reach INR 7,000 crore by 2015, according to Indian e-Retail report. This growth will be further fueled by improvements in ad targeting and re-targeting.
In social media, Facebook has introduced promoted posts, customization in audience, whereas Twitter, improved interest, device selection, geo-targeting and others of promoted post, and while LinkedIn, also improved targeting. More customization, micro-targeting and re-targeting features and tools can be expected from these popular social media networks. Google also have improved

its re- marketing/re- targeting capabilities, and many special and exciting updates can be expected in future. At present, e-commerce industry in India is extensively using re-marketing and micro targeting online. In India, businesses are spending huge in advertising, therefore, there would be rise of many startups offering innovative solutions in advertising itself.

13. Ever-Evolving UX and Web Designs

In the world of digital marketing, user experience and web design are ever evolving, where interactivity, rich content and speed are essential components. There are some innovations in user experience and web designing. Mostly, e-commerce websites in India will drive these innovations, and more will jump into the bandwagon. In CRO and testing, user experience and web designing are strategic, which directly enhance incredibly conversion rates with simple and innovative changes and improvements. In India, news sites and e-commerce have been experimenting with web and user experience designing.

14. Humanization of Digital Marketing

Digital marketing will humanize further, where brands/businesses will understand the importance of conversations and engagements. Moreover, Google ranks higher only those contents that have higher likes, shares, comments and other customer engagement signals. Companies will try to connect and converse more through digital marketing with their target audience. And we can expect, this will only increase customer retention, brand loyalty and word-of-mouth. Digital strategies in future will be based on co-creation and collaboration concept, where humanization of business, interactivity and engagement will help in delivering value.

15. Multi-Channel/ Integrated Marketing

In India, multi-channel/integrated marketing will grow in popularity and effectiveness. As many brands/businesses in India are increasingly embracing this concept to attract and engage customers on all online and offline platforms. All businesses/brands in India, will try to integrate their marketing efforts, especially their digital marketing with offline marketing. In India, brands are realizing of importance integrated marketing communications, in which conveying single message across all platforms helping them to improve brand experience, brand loyalty, keep brand top-of-the- mind, and increase sales. However, there are challenges such as mobile and disintegrated marketing teams, which are plaguing the effectiveness of integrated marketing leading to no credible business value generation. Nevertheless, given advantages of multi- channel marketing/integrated marketing, large number of businesses in India will embrace it.

Conclusion:

In a recent research, digital marketing shows that in India businesses are getting serious about digital marketing and investing in it heavily. In the current scenario, internet is pretty small right now and the larger share of the target market is still available offline. However, going forward, in the next two to three years, digital consumption and spends will go up in India and, for this to happen, both quality and quantity of content needs to grow in India. Once that is achieved, the overall industry spends on digital standing at around 15 to 20 per cent in the next two to three years. Currently the digital medium has its constraints with the number of people accessing and

spending time on this. It has to become a large enough medium in terms of consumption to compete with TV. Though people are buying online, a large proportion of their time is still spent offline. Having said that, today, the target group for most online companies is people living in the metros and slowly it is becoming important for a brand to be built online also. And we can see that in other business segments as well.

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Work Package 4 Activity 3

III. Implementation Report

Trial of the Train the Trainer program Consulting & Qualification Digitization in Kolding

Prepared by:

Hanse Parlament

Hamburg , 2022

Hanse-Parlament

TABLE OF CONTENTS

Introduction

Many SMEs have so far made only very limited use of digital technologies to generate and realize customer-centric innovations. They are not sufficiently familiar with the technologies, do not know how to use them for such innovations, and lack the competencies for successful application. SMEs therefore need comprehensive qualifications and advice on the use of digital technologies for the realization of customer-centric innovations.

The Train the Trainer program "A Consulting & Qualification Digitization" was developed based on the fact that also many SME teachers and consultants do not have sufficient knowledge, skills and experience on the teaching of various digital technologies to generate, process and realize customer-centric innovations. Teachers and advisors need to acquire digital competencies and need to be trained in the use and delivery of digital customer innovation technologies to ensure high quality teaching.

A concept, curriculum and teaching materials for this Train the Trainer program were developed by PP8 MU in collaboration with all partners using the results from Intellectual Output 1 and Intellectual Output 2. The testing of the Train the Trainer was evaluated by PP5 HI and the results of the evaluation are summed up in an evaluation report. Based on the implementation and evaluation report, Intellectual Output 3 will be revised and finalised by PP8 MU. Finally, the Train the Trainer "A Consulting & Qualification Digitization" will be transferred to the Hanse Parlament network and beyond for future implementation.

While the Train the Trainer curriculum is composed for three to four days, the testing took place in a condensed form in Kolding at IBC University on November 10th, 11th and 12th 2021. Due to the ongoing COVID-19 pandemic, two partners participated online via MS Teams.

The testing of the Train the Trainer program is summarized in the following implementation report with the aim to identify what works well and what needs to be adjusted as well as what kind of implementation advice can be provided for future implementations.

Target group/participants

The target groups for the Train the Trainer program "A Consulting & Qualification Digitization" are mainly teachers and consultants from chambers and other institutions of continuing vocational education and training as well as colleges and universities, who have several years of experience in conducting further training and consulting for SMEs and their employees.

During the testing of the Train the Trainer program in Kolding on November 10th-12th 2021 nine people from the different project partner institutions attended and two additional people attended online (see participant list: Attachment I). While some participants were teachers and trainers themselves, most of the participants were project coordinators.

Organisation of the Train the Trainer testing

The Train the Trainer program "A Consulting & Qualification Digitization" was tested at IBC University on November 10th, 11th and 12th 2021 in Kolding, Denmark. This specific location was chosen because the IBC campus has the perfect facilities when it comes to digitalization and innovation topics with the technologies needed as well as experienced lecturers of PP6 IBC who contributed to the testing of the training.

Agenda

Wednesday, 10.11.2021 **at IBC Innovationsfabrikken, Birkemosevej 1, 6000 Kolding**		
08:30	Transfer from Hotel Kolding to IBC Innovationsfabrikken	
09:00 – 10:30	Welcome and ice breaker activity	Kirsten Jensen, PP6 IBC Max Hogeforster, PP1 HP
10:30 – 12:00	Project Workshop 1. Project Update 2. Interim report due 15.03.2021 (01.09.2020 to 28.02.2022) 3. Financial management 4. Dissemination 5. Online meeting January to discuss Digitalization Training 6. Testing of Trainings (timeframe, implementation report, evaluation)	Melanie Henke, PP1 HP
12:00 – 12:45	Lunch at IBC Innovationsfabrikken	
12:45 – 13:15	A little innovation challenge: 9 dots	Michael Christiansen, PP6 IBC
Train the Trainer Workshop		
13:15 – 14:15	**Theme 1:** Overview of training "Digital skills for implementing customer-centric innovations in SMEs"	Michael Christiansen, PP6 IBC
15 Minute Coffee break		
14:30 – 15:00	Digital Customer based innovation in real life	Danish company owner
15:00 – 16:00	**Theme 2:** Results from IO1 1. Study and toolbox of applied instruments, methods and procedures	Melanie Mesloh, PP2 HWWI

	2. Application notes and recommendations for SMEs, consultants and teachers 3. Survey and best practices results 4. Application notes and recommendations for SMEs, consultants and teachers	Ágnes Horváth, PP8 MU
16:00 – 18:00	**Theme 3:** Diving into the topic Digitalisation and Innovation 1. Mapping successful training programs 2. The importance of the topic „Digitalization skills for SMEs" 3. Features of Generation X, Y, Z Discussion, exchange of experience	PP8 MU All
18:30	St. Martin Dinner at IBC Innovationsfabrikken	
20:30	Transfer from IBC Innovationsfabrikken to Hotel Kolding	

Thursday, 11.11.2021		
08:30	Transfer from Hotel Kolding to IBC Innovationsfabrikken	
09:00 – 09:30	Reflection of day 1 and a little innovation challenge	Michael Christiansen, PP6 IBC
09:30 – 12:00	**Theme 4:** Introduction to a digital tool	Michael Christiansen, PP6 IBC
12:00 – 12:45	Lunch at IBC Innovationsfabrikken	
12:45 – 14:45	**Theme 5:** Modern teaching methodologies	PP8 MU
15 Minute Coffee break		
15:10	Departure for excursion in Kolding	
19:00	Project dinner at Admiralen , Toldbodgade 14, 6000 Kolding	

Friday, 12.11.2021		
08:30	Transfer from Hotel Kolding to IBC Innovationsfabrikken	
09:00 – 10:30	**Theme 6:** How to win SMEs for the trainings	Michael Christiansen, PP6 IBC
10:30 – 11:30	**Theme 7:** Coaching during the training program - KAIN method	Max Hogeforster, PP1 HP
11:30 – 12:00	Summary and conclusion of the training, evaluation and next steps	Max Hogeforster, PP1 HP
12:00	Lunch at IBC Innovationsfabrikken and departure	

At the end of the Train the Trainer the participants received a certificate of attendance signed by the lead partner (see Attachment II).

Findings and Conclusions

The testing of the Train the Trainer program in Kolding in November 2021 happened to be the first face-to-face meeting of the project consortium due to the COVID pandemic. Hence, the Train the Trainer also served to generally get deeper into the project content and outputs.

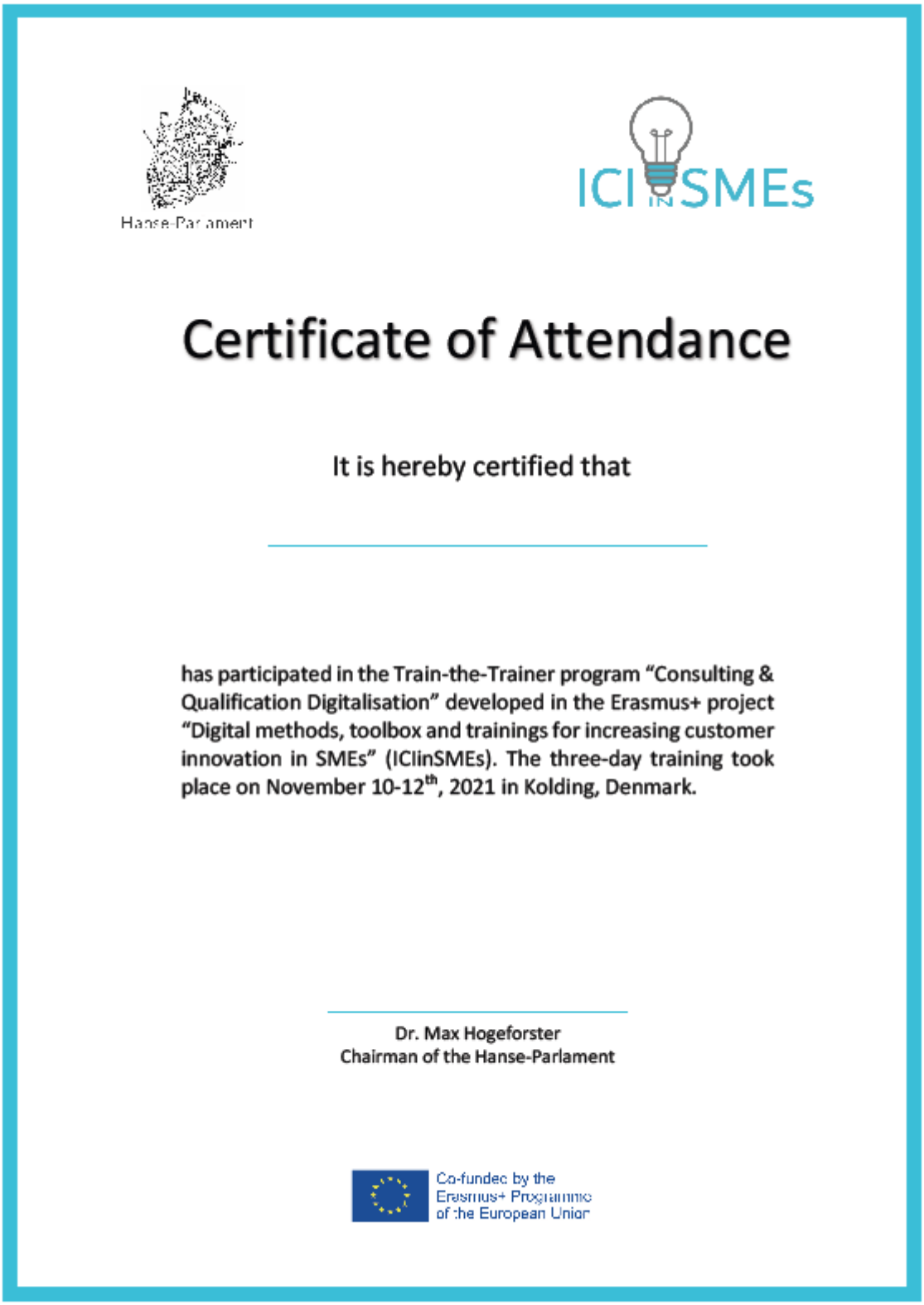
One of the key findings during these days were that the Train the Trainer both on Digitalisation as well as Innovation should take into account the existing knowledge of the participants (for example by conducting a self-assessment beforehand). Additionally, the Train the Trainer programs as well as further training programs should be modular so that depending on the existing knowledge and skills topics can be added or dismissed.

Attachments

Attachment I: List of teaching materials and presentations

1. Concept and teachers' materials
2. Digitalisation and Innovation
3. Master idea
4. Modern teaching methodologies
5. IBC booklet
6. Study of applied instruments, methods and procedures for the integration of customer-based innovation in SMEs

Attachment II: Certificate template



Hanse-Parlament

ICI IN SMEs

Certificate of Attendance

It is hereby certified that

has participated in the Train-the-Trainer program "Consulting & Qualification Digitalisation" developed in the Erasmus+ project "Digital methods, toolbox and trainings for increasing customer innovation in SMEs" (IClinSMEs). The three-day training took place on November 10-12th, 2021 in Kolding, Denmark.

Dr. Max Hogeforster
Chairman of the Hanse-Parlament

Co-funded by the Erasmus+ Programme of the European Union

Work Package 4: Train-the-Trainer Program A "Digitalisation"

Activity 4: Quality assurance as well as evaluation of the trial

IV. Evaluation Concept

Prepared by: Dr Monika Zajkowska

Hanseatic Institute for Support of SMEs

TABLE OF CONTENTS

1. Definition of training evaluation

Training is the foundation of a modern organization. Properly selected and carried out, individual team members and the entire organization increase the effectiveness of operations step by step. Nevertheless, a lot depends on the quality of the training itself, so:

- skilful selection of the subject matter to the needs of employees,
- effective teaching methods used to conduct them,
- a well-thought-out training plan tailored to the employee's career path,
- reasonable organization of training in terms of logistics and technology.

And how to assess whether the implemented training solutions are effective? This is what their evaluation is for. It consists in verifying whether the training policy in the company is effective - and therefore whether it allows to achieve the company's development goals.

The evaluation is the final step of the training management cycle (diagram 1). A training management cycle can be divided into three major steps: Step 1: Planning; Step 2: Implementation; and Step 3: Evaluation. The results of the training evaluation are reflected in the next phase of training planning to improve future training programs.

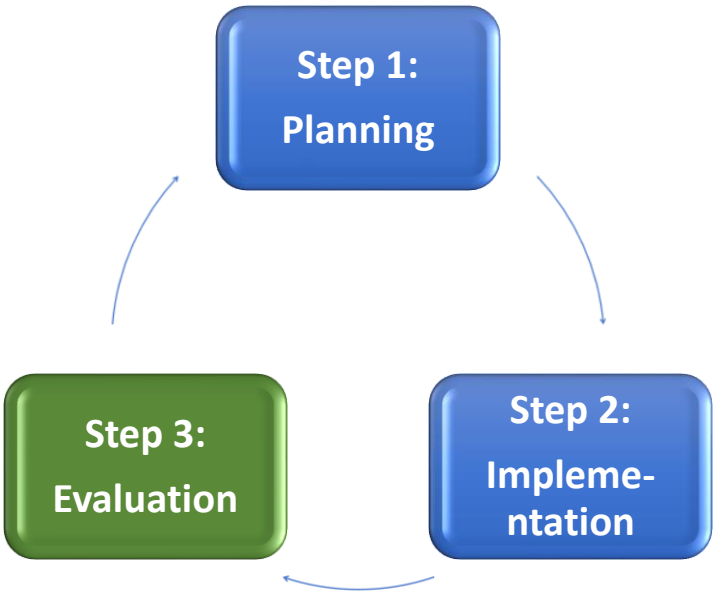


Diagram 1. Training Management Cycle

Evaluation of training is one of the main components of a training programme. It will not only provide the trainer with useful information in order to further improve the training course, but also creates an impression of completeness.

An evaluation is the systematic and objective assessment of an ongoing or completed project, program or policy, its design, implementation and results. The aim is to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability.[1] The program evaluation is the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about the program, improve program effectiveness, and/or inform decisions about future programming.[2]

Evaluation of courses including gained results and found problems is essential to be able to develop further the existing training programs as well as to consider the experiences gathered from these programs when building new curricula. The evaluation process has been designed hand in hand with the courses themselves. This concept presents an overview of evaluation process and questionnaire.

2. Types of evaluation

There are many different types of evaluations depending on the object being evaluated and the purpose of the evaluation. Perhaps the most important basic distinction in evaluation types is that between *formative* and *summative* evaluation. Formative evaluations strengthen or improve the object being evaluated -- they help form it by examining the delivery of the program or technology, the quality of its implementation, and the assessment of the organizational context, personnel, procedures, inputs, and so on. Summative evaluations, in contrast, examine the effects or outcomes of some object -- they summarize it by describing what happens subsequent to delivery of the program or technology; assessing whether the object can be said to have caused the outcome; determining the overall impact of the causal factor beyond only the immediate target outcomes; and, estimating the relative costs associated with the object.

Formative evaluation includes several evaluation types:

- *needs assessment* determines who needs the program, how great the need is, and what might work to meet the need
- *evaluability assessment* determines whether an evaluation is feasible and how stakeholders can help shape its usefulness

[1] *Glossary of Key Terms in Evaluation and Results Based Management*

[2] *Patton, M.Q. (1997). Utilization-focused Evaluation: The New Century Text (3rd ed.). Thousand Oaks, CA: Sage.*

- *structured conceptualization* helps stakeholders define the program or technology, the target population, and the possible outcomes
- *implementation evaluation* monitors the fidelity of the program or technology delivery
- *process evaluation* investigates the process of delivering the program or technology, including alternative delivery procedures

Summative evaluation can also be subdivided:

- *outcome evaluations investigate whether the program or technology caused demonstrable effects on specifically defined target outcomes*
- *impact evaluation is broader and assesses the overall or net effects -- intended or unintended -- of the program or technology as a whole*
- *cost-effectiveness and cost-benefit analysis address questions of efficiency by standardizing outcomes in terms of their dollar costs and values secondary analysis reexamines existing data to address new questions or use methods not previously employed*
- *meta-analysis integrates the outcome estimates from multiple studies to arrive at an overall or summary judgement on an evaluation question*

3. Steps of training evaluation

The processes of training evaluation can be divided into five steps: identify purposes of evaluation; select evaluation methods; design evaluation tools, collect data; and analyze and report results.

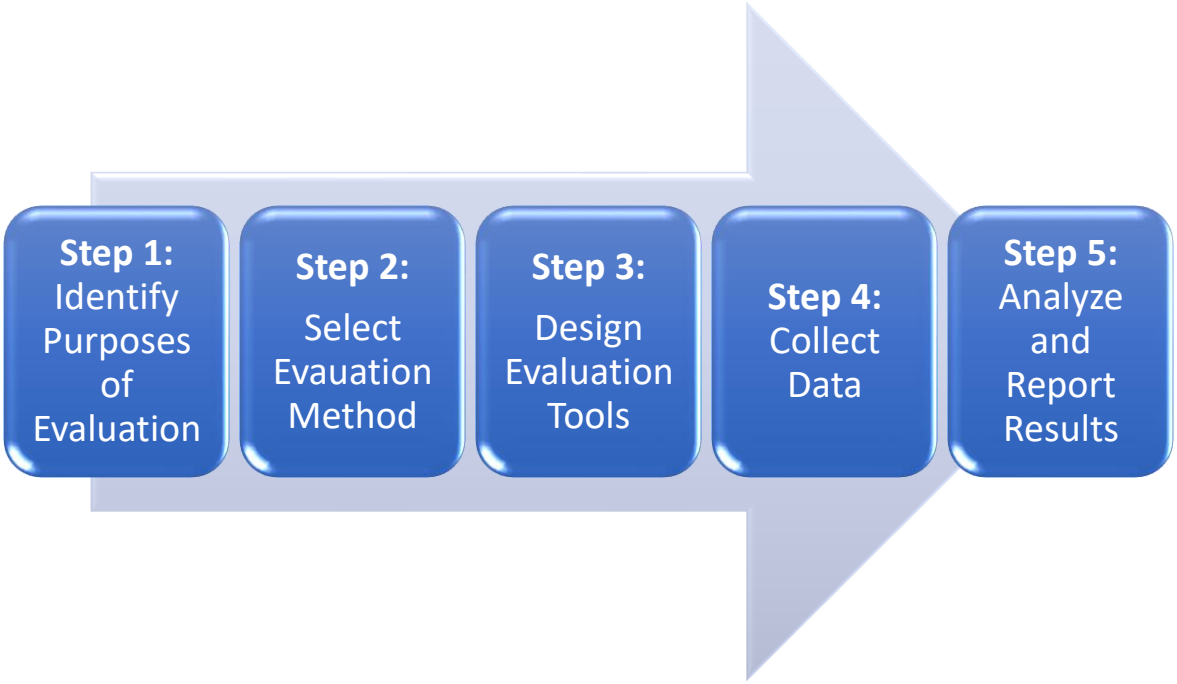


Diagram 2. Steps of training evaluation

Step 1: Identify the Purposes of Evaluation

- Before developing evaluation systems, the purposes of evaluation must be determined.
- Why do we want to evaluate training programs?

Step 2: Select Evaluation Method

- Kirkpatrick's four levels of evaluating training programs
- Reaction, learning, behavior, and result

Step 3: Design Evaluation Tools

- Questionnaire
- Pre/Post Test
- Impact Survey

Step 4: Collect Data

- Who, when, how to collect data?

Step 5: Analyze and Report Results

- Evaluation data analysis
- Reporting

Step 1: Identify Purposes of Evaluation

Before developing evaluation systems, the purposes of evaluation must be determined. These will affect the types of data and the data collection methods.

Purposes identified by the GDLA Task Force

The GDLA Task Force has identified the following as the purposes of evaluating training programs planned and implemented by the Task Force for public officials in charge of local administration:

- To determine whether the objectives of the training were achieved.
- To see how the knowledge and skills learned in the training are put into practice.
- To assess the results and impacts of the training programs.
- To assess the effectiveness of the training programs.
- To assess whether the training programs were properly implemented.
- To identify the strengths and weaknesses of the training programs.
- To assess whether the training programs were suitable in terms of the training contents, timing, participants and other aspects.
- To find problems of the training programs and solutions for improvement.

Step 2: Select Evaluation Method

One of the most commonly used methods for evaluating training programs is the four levels of evaluation by D. L. Kirkpatrick. According to his concept, capacity development is realized by the four sequential steps: Reaction; Learning; Behavior; and Results.

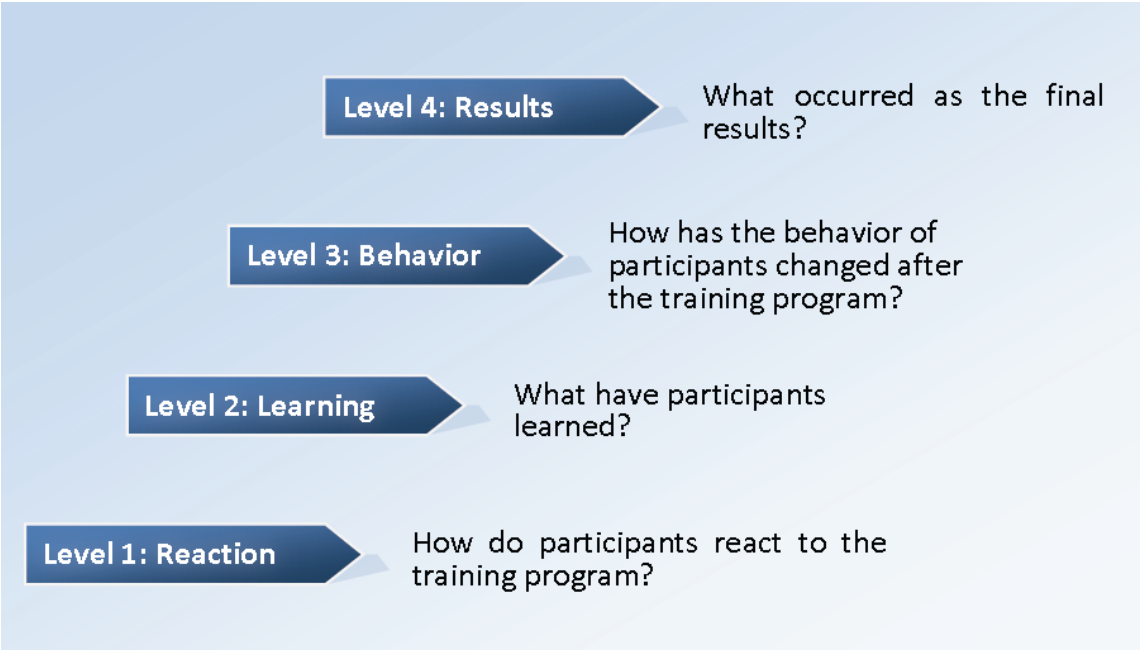


Figure 1. Four levels of evaluation by D. L. Kirkpatrick

Level 1: Reaction

Evaluation on this level measures how participants react to the training program. It is important to get a positive reaction. Although a positive reaction may not ensure learning, if participants do not react favorably, they probably will not be motivated to learn.

Level 2: Learning

Evaluation on this level measures the extent to which participants change attitudes, improve knowledge, and/or increase skills as a result of attending the training program. One or more of these changes must take place if a change in behavior is to happen.

Level 3: Behavior

Evaluation on this level measures the extent to which change in participants' behavior has occurred because of attending the training program. In order for change to take place, four conditions are necessary:

- The person must have a desire to change.
- The person must know what to do and how to do it.
- The person must work in the right climate.
- The person must be rewarded for changing.

Level 4: Results

Evaluation on this level measures the final results that occurred because the participants attended the training program. Examples of the final results include increased production, improved quality and decreased costs. It is important to recognize that these results are the reason for having some training programs.

When evaluating course, the goals and real results should be compared. This is not always possible or fair and just. The evaluation should be targeted only to such measurable issues on which the designer, teacher, facilitator or student himself has an impact. Evaluating the impacts of training programs against the presented main goals would require large societal researches including the recording of the initial situation before starting the programs and the long-term follow-up research in which the conducted interventions and actions (In this case new forms of training and education) and their impacts on change of variables is followed. The final conclusions can be drawn just after some years or after decades. In this project this is not possible and the whole evaluation process must be rethought and simplified.

The most important variables, on point of view of achieving the goals set, are the motivation of student, the support he gets, the relevance of issues in curricula, the quality material and training and the ability of facilities to support training and learning. Although most of the variables presented above are so called soft variables, which can't be measured directly by targeting the measurement tool to some point or phase in the process, they can be assessed indirectly by assessing the feelings and comments of participants and other stakeholders.

Step 3: Design Evaluation Tools

Various evaluation tools can be selected depending on the purposes and methods of evaluation.

- **Questionnaires**
- **Surveys**
- **Tests**
- **Interviews**
- **Focus group discussions**
- **Observations**
- **Performance records**

For the Train-the-Trainer training evaluation the questionnaire will be used.

The questionnaire is probably the most common form of evaluating training programs. Questionnaires to evaluate the reactions of training participants.

The first step of questionnaire design is to determine the information we would like to know.
The following are some information we wanted to ask participants.

Contents: Was the content appropriate?
Materials: Were the materials useful?
Teaching method: Was the teaching method appropriate?
Trainer/Facilitator: Was the trainer/facilitator effective?
Motivation to learn: Were you motivated to learn the contents?
Program relevance: Was the program relevant to your needs?
Level of understanding: Did you understand the contents?
Time: Was the time and length of program appropriate?
Length: Was the program length appropriate?
Facilities: Were the training facilities appropriate?
Overall evaluation: What is your overall rating of the program?
Planned improvements: How will you apply what you have learned?

The second step in questionnaire design is to select the types of questions. Questions that might be asked in a questionnaire can be classified into two major categories: open-ended and close-ended.

In the questionnaire of Train the Trainer training both categories of questions will be used.

The third step in questionnaire design was to develop the questions based on the types of questions planned and the types of information needed.
The fourth step in questionnaire design was to test the questions. They were tested on a group of people at approximately the same job level as the participants.

The following were some of the points to be checked when pre-testing the questionnaire.
Does he/she understand all the questions?
Does he/she have any difficulty in answering
the questions?
Do all close-ended questions have an answer
applicable to each respondent?
Are the skip patterns followed correctly?
Does any part of the questionnaire suggest bias on your part?
Does the questionnaire create a positive impression to motivate people
to respond?

Based on the result of pretest in Step 4, the questionnaire forms were finalized.

Step 4: Collect Data

To improve the effectiveness of questionnaire data collection were recommended following:

- *Keep responses anonymous*
- *Distribute questionnaire forms in advance*
- *Explain the purpose of the questionnaire and how the information will be used*
- *Allow enough time for completing the questionnaire*

Step 5: Analyze and Report Results

An evaluation of the Train-the-Trainer is essential to identify problems and the quality of the training in order to be able to develop further the existing training programs as well as to consider the experiences gathered from these programs when building new curricula. The evaluation process of each course has been designed hand in hand with the course itself.

Before summarizing and analyzing the questionnaire, the data need to be entered into a computer. Many statistical software programs are available for such data. There are many ways to analyze data, but the analysis should be as simple as possible and limited to what is necessary to draw the required conclusions from the data.

The next step is to consider what forms of communication will be most effective to present evaluation findings to the primary users. The following questions may be used as guidance to choose appropriate forms of communication.

- To what extent and in what specific ways is the information *relevant* to the user's real and compelling problems?
- To what extent is the information *practical* from the user's perspective?
- To what extent is the information *useful* and immediately applicable in the user's situation?
- What information will the user consider *credible* and what reporting practices will support that credibility?

After knowing what kind of information will be relevant and useful to the primary users, the last step in evaluation process is to develop an evaluation report.

4. The concept of Train-the-Trainer "digitalisation" evaluation

4.1. The aim of the Train-the-Trainer

The results of a three-day train the trainer programme for teachers and consultants of SMEs who want to acquire knowledge, skills, pedagogy etc. to:

a) to train employees of SMEs to successfully use digital technologies in the acquisition, processing and implementation of customer innovations (Output O2).

b) to transfer digital technologies to SMEs and provide sound advice on implementation.

The Train the Trainer programme is based on Output O1 "Best Practice customer-centred innovation & digitisation" and includes in particular the results of A1 Best Practices of using digital technologies (IO1, A1) and A3 Digital technologies for the realisation of customer innovations (IO1, A3).

In addition, the Train the Trainer programme provides detailed information on the concept, curriculum, etc. of the SME specific training programme "Digital Competences" and intensively trains the integrated coaching (IO2 further education programme digital competences).

The Train the Trainer program includes the following elements:

a) Presentation, consulting and mediation aspects of the content of the SME specific training programme "Digital Skills" (see IO2)

b) presentation, advice and mediation aspects of the various digital technologies, namely

- Best practices in the use of digital technologies (see IO1, A1)
- Digital technologies for the realization of customer innovations (see IO1, A3)

c) Presentation, consulting and training of the coaching process

d) Pedagogical issues

The training programme consists of a combination of presentations, consultations and discussions in plenary, work in small groups and role-plays.

The conclusions of the evaluation research will contribute to improve the quality, and especially the effectiveness of training, show the limitations of the training model and indicate the direction for further activities.

4.2. Evaluation concept

The objective of the evaluation is to determine whether the goals of the program will be achieved in the implementations evaluated, and how the program has impact on student's career and opportunities.

The evaluation process will be as follows:

1. The participants of the Train-the-Trainer will receive an online Semi-structured questionnaire at the end of the training (Appendix A).
2. Time for the survey (approx. 10 minutes) will be allocated in the end of the course.
3. The facilitator of the training informs the participants about the evaluation and its importance for further development actions. The purpose of the questionnaire and how the data will be used should be explained clearly to the participants. This will help to improve the response rate and encourage the participants to make comments that can be useful to improve future programs.

4. The questionnaires are being filled in online and submitted automatically and anonymously to the evaluator of the training.
5. The evaluator analyses all feedback surveys and summarizes them in a written analysis. Based on that, recommendations for the adjustment and future use of the curriculum result.

The evaluation approach will be based on a combination of qualitative and quantitative methods. The Microsoft Excel package will be used to transcribe the feedbacks and interviews. Open questions will be categorized, and qualitative analysis of the groups will be done.

The final evaluation report will discuss the following issues:

- Did the curriculum reach the targets?
- How well was the knowledge creation and sharing realized?
- Did the participants assimilate knowledge and tools?
- Was the venue and equipment appropriate for the training course?
- What kind of further development will be needed, if any?

Schedule of the evaluations

The schedule of the evaluation should be matched to the phases of the curriculum. There is no sense to evaluate the course before the students have a true and fair view of the course, its phases and contents. A closer schedule of each evaluation will be agreed later.

Appendix A: Questionnaire for Participants of the Train-the-Trainer Course

ICIinSMEs Train-the-Trainer "Consulting & Qualification Digitalisation" feedback survey

Dear Train-the-Trainer participant,

Thank you for taking time to fill out this feedback form on the "Consulting & Qualification Digitalisation" Train-the-trainer (TTT) workshop, that was developed by PP 6 International Business College (IBC) in Kolding, Denmark on 10-12 November 2021 as part of the Erasmus+ project "ICIinSMEs" Y=This survey is anonymous and will take approx. 5-10 minutes.

Please circle the scale that applies to your opinion on the following aspects of the education you participated.

Q1 How did you participate in the Train-the-Trainer		on site at IBC in Kolding		online	
	absolutely agree	somewhat agree	neither agree nor disagree	somewhat disagree	absolutely disagree
Q2 General Assessment					
The TTT met my expectations.					
The TTT was useful for my work.					
I would recommend this training course.					
Q3 Content and Methods					
The content of the TTT was interesting and informative.					
The methods of the TTT were suitable.					

The training contents were relevant to my needs.					
I expect to use the knowledge and skills gained from this training.					
Q4 Lecturers/Trainers					
The lecturers/trainers were communicate, friendly and approachable.					
The lecturers/trainers were goal- and result-oriented.					
The lecturers/trainers were competent and well prepared.					
The lecturers/trainers responded well to questions and queries from the participants.					
Q5 Organization					
The overall organization was good.					
The overall atmosphere of the train-the-trainer was good.					
The training venue and environment was comfortable and conducive to the learning process.					
The duration of the training was appropriate.					
Overall, I am very satisfied with the training and would recommend it to other counsellors.					
Q6 What kind of changes, in your opinion, should be included in a future train-the-trainer of this type?					

Q7 Is there anything else you would like to share?	

Work Package 4: Train-the-Trainer Program A "Digitalisation"

Activity 4: Quality assurance as well as evaluation of the trial

V. Evaluation Report

Prepared by: Dr Monika Zajkowska

Hanseatic Institute for Support of SMEs

TABLE OF CONTENTS

1. Introduction to the Train-the-Trainer "Digitalisation"

Project goal - IClinSMEs

The project pursues on a broad regional basis the objective of enabling and supporting SMEs to exploit their customer innovation potential and thus to strengthen the productivity and competitiveness of SMEs, to secure existing jobs and to create new ones. A focus is put on the digital customer innovation tools and methodologies and hence, the digital skills qualifications of SME workers and managers. The following main activities will be carried out to achieve the objectives.

Purpose in Kolding – Train-the-Trainer

The purpose of the training is to train digital skills to teachers and consultants, to qualify them and to enable them to provide sound training and advice to SME workers and managers with regard to the application of digital technologies for customer-centric innovation.

Results of Train-the-Trainer in Kolding

A tested train the trainer program in form of a written curriculum with teaching materials that can be continuously implemented by other universities so that in the future, well-qualified teachers and consultants will be constantly available to implement the training course for SMEspecific digital skills. The purpose of the training is to train digital skills to SME workers or managers that can be used for customer-centric innovations. Purpose of Digitalisation Training (to be tested in Poland by PP3 IPRL, in Hungary by PP7 IPOSZ and in Denmark by PP6 IBC with 15 SME workers or managers)

Training structure

a) Several (at least two) blocks with face-to-face teaching in the respective educational institution (PP3 IPRL Poland, PP7 IPOSZ Hungary, PP6 IBC Denmark)
b) Between the blocks with face-to-face teaching, longer phases of on-the-job learning in the SMEs. During this on-the-job learning coaching by trainers.
c) Realization of at least one development project chosen by the SME itself to implement customer-centric innovation with digital tool.
d) Presentation of project results in face-to-face closing workshop and examination and certification.

Results

a) Concept, curricula and teaching material for a SME-specific digitalisation training by PP6 IBC
b) Coaching program for the trainers by PP1 HP
c) Examination regulations by PP1 HP
d) Implementation reports by PP3, PP6 and PP7
e) Evaluation report by PP5 HI

2. Agenda of the Train-the-trainer

The Train-the-Trainer training took place on November 10-12, 2021 in Kolding, Denmark and was organized by IBC Partner No. 6 International Business College (IBC), Denmark.

The training Agenda was as follows:

10th November - Wednesday
8:30 Departure hotel – Bus

9:00 Welcome by Kirsten Jensen and Max Hogeforster
- A welcome challenge

10:30 - 12:00 General project organization tasks, PP1
- Dialogue about the report

12:00 Lunch

12:45 A little innovation challenge – name tag – PP6, Michael Christiansen

13:15 - 14:15 Theme 1 – Start of the train-the-trainer workshop
Overview of training "Digital skills for implementing customer-centric innovations in SMEs" by PP 6, Michael Christiansen, IBC
- Dialogue about Theme 1

14:15 Coffee / The

14:30 – 15:00 Digital Customers based innovation in real live. (I will try to find a Danish company who "do the talk")

15:00 – 15:30 Theme 2 - Results from IO 1 – Survey, best practices and toolbox; Presentation by PP2 HWWI, PP5 HI
- Dialogue about Theme 2
15:30 – 16:00 Presentation of the reports and survey (Best praxis), PP 8

16:00 – 18:00 Theme 3 - Diving into the topic Digitalisation and Innovation. PP8
What makes a training program good?
The importance of the topic „Digitalization skills for SMEs"
Features of Generation X, Y, Z
- Dialogue about Theme 3

18:30 Dinner and social relation at Innovation-factory (IBC)
- Evening of St. Martin

22:00 End and bus back to hotel

11th November - Thursday
8:30 Departure hotel – Bus

9:00 Learnings output from day 1, PP6 – Michael Christiansen
- A little innovation challenge – 9 dots

9:30 – 12:00 Theme 4 – Introduction to a digital tool. PP 6 – Michael / Kvanto
- Dialogue about Theme 4

12:00 Lunch

12:45 Theme 5 – Modern teaching methodologies in general. PP 8
Problem-based learning, Case study method, Gamification, Presentation skills, Project-Based Learning, Flipped Classroom, Cooperative Learning, Design Thinking, Thinking-Based Learning, Competency-Based Learning, Inquiry-Based Learning, Interactive tools, Learning games.
- Dialogue about theme 5

14:50 Coffee / The

15:10 Departure bus to Kolding Castle

15:30 – 17:00 Visit Kolding Castle

17:00 – 19:00 Time on your own

19:00 Dinner, social relation and entertainment (Restaurant; Adminralen)

End and walk back to hotel

12th November - Friday
8:30 Departure hotel – Bus

9:00 – 10:30 Theme 6 – How can we marketing this product/software and the first contact to 15 SMEs (from develop of concept – and a dialogue about – what are we going to do with the project after "the last project day / 2022").

PP 6 – Michael Christiansen
- Dialogue about theme 6

10:30 – 12:00 Theme 7 – Coaching during the period (KEAN), PP1, and
Finalise the training and present the feedback survey.

- Dialogue about theme 7

12:00 Summing up, next step and thank you – and have a nice trip home.

12:15 Lunch and goodbye

3. Steps of training evaluation

The processes of training evaluation can be divided into five steps: identify purposes of evaluation; select evaluation methods; design evaluation tools, collect data; and analyze and report results. This report concentrate on the step 5: Analyze and report results.

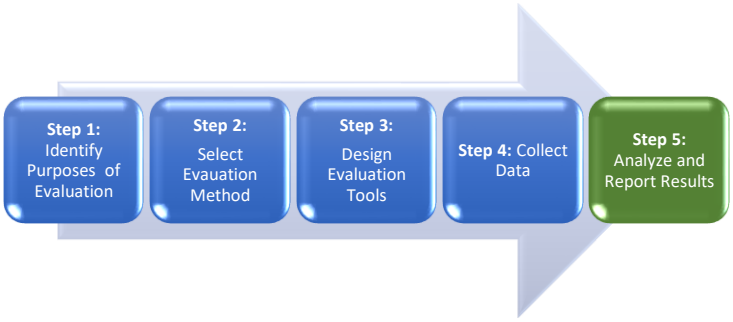


Diagram 2. Steps of training evaluation

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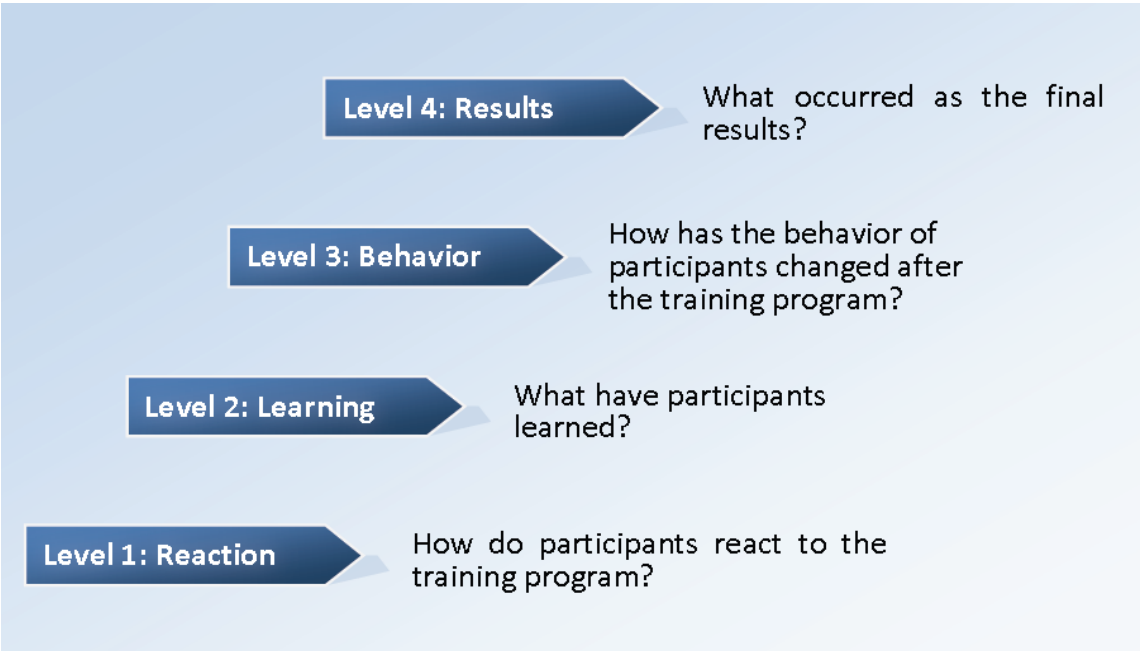

Figure 1. Four levels of evaluation by D. L. Kirkpatrick

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Various evaluation tools can be selected depending on the purposes and methods of evaluation.

- **Questionnaires**
- **Surveys**
- **Tests**
- **Interviews**
- **Focus group discussions**
- **Observations**
- **Performance records**

For the Train-the-Trainer training evaluation the questionnaire will be used.

The questionnaire is probably the most common form of evaluating training programs. Questionnaires to evaluate the reactions of training participants.

The first step of questionnaire design is to determine the information we would like to know.

The following are some information we wanted to ask participants.

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Teaching method: Was the teaching method appropriate?
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Program relevance: Was the program relevant to your needs?
Level of understanding: Did you understand the contents?
Time: Was the time and length of program appropriate?
Length: Was the program length appropriate?
Facilities: Were the training facilities appropriate?
Overall evaluation: What is your overall rating of the program?
Planned improvements: How will you apply what you have learned?

The second step in questionnaire design is to select the types of questions. Questions that might be asked in a questionnaire can be classified into two major categories: open-ended and close-ended.

In the questionnaire of Train the Trainer training both categories of questions will be used.

The third step in questionnaire design was to develop the questions based on the types of questions planned and the types of information needed.
The fourth step in questionnaire design was to test the questions. They were tested on a group of people at approximately the same job level as the participants.

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Are the skip patterns followed correctly?
Does any part of the questionnaire suggest bias on your part?

Does the questionnaire create a positive impression to motivate people to respond?

Based on the result of pretest in Step 4, the questionnaire forms were finalized.

Step 4: Collect Data

To improve the effectiveness of questionnaire data collection were recommended following:

- *Keep responses anonymous*
- *Distribute questionnaire forms in advance*
- *Explain the purpose of the questionnaire and how the information will be used*
- *Allow enough time for completing the questionnaire*

Step 5: Analyze and Report Results

An evaluation of the Train-the-Trainer is essential to identify problems and the quality of the training in order to be able to develop further the existing training programs as well as to consider the experiences gathered from these programs when building new curricula. The evaluation process of each course has been designed hand in hand with the course itself.
Before summarizing and analyzing the questionnaire, the data need to be entered into a computer. Many statistical software programs are available for such data. There are many ways to analyze data, but the analysis should be as simple as possible and limited to what is necessary to draw the required conclusions from the data.

The next step is to consider what forms of communication will be most effective to present evaluation findings to the primary users. The following questions may be used as guidance to choose appropriate forms of communication.

- To what extent and in what specific ways is the information *relevant* to the user's real and compelling problems?
- To what extent is the information *practical* from the user's perspective?
- To what extent is the information *useful* and immediately applicable in the user's situation?
- What information will the user consider *credible* and what reporting practices will support that credibility?

After knowing what kind of information will be relevant and useful to the primary users, the last step in evaluation process is to develop an evaluation report.

4. Methodology of evaluation

4.1 The aim of the evaluation

The evaluation has the following goals:
1.It has to provide objectified knowledge about the progress (quantity and quality) of processes.
2.It serves the control of such processes and helps capturing the strong and the weakpoints. Therefore, it is an instrument of quality assurance.
3.It serves the legitimization. In other words, a successful evaluation is evidence of competence of the person responsible for the process being evaluated.
4.Transparency, in order to make a dialogue possible.

In order to achieve these goals, the evaluation was performed in a process-related and summative manner: process-related (also formative, development-related) in order to evaluate the quality of the project progress and if necessary, to make changes. The summative evaluation or evaluation of results serves the evaluation of the specified objectives within the framework of the project, final evaluation of impact and efficiency of the project lecturers management, of cooperation and transfer.

The **general aim of the study** is to evaluate the effectiveness of training „Train-the-Trainer Digitalisation" realized within the Project "Digital methods, toolbox and trainings for increasing customer innovation in SMEs" (ICIinSMEs) carried out in Denmark. The conclusions of the evaluation research will contribute to improve the quality and especially the effectiveness of training, show the limitations of the training model and indicate the direction for further activities.

The results of a three-day train the trainer programme for teachers and consultants of SMEs who want to acquire knowledge, skills, pedagogy etc. to:

a) to train employees of SMEs to successfully use digital technologies in the acquisition, processing and implementation of customer innovations (Output O2).

b) to transfer digital technologies to SMEs and provide sound advice on implementation.

The Train the Trainer programme is based on Output O1 "Best Practice customer-centred innovation & digitisation" and includes in particular the results of A1 Best Practices of using digital technologies (IO1, A1) and A3 Digital technologies for the realisation of customer innovations (IO1, A3).

In addition, the Train the Trainer programme provides detailed information on the concept, curriculum, etc. of the SME specific training programme "Digital Competences" and intensively trains the integrated coaching (IO2 further education programme digital competences).

The Train the Trainer program includes the following elements:

a) Presentation, consulting and mediation aspects of the content of the SME specific training programme "Digital Skills" (see IO2)

b) presentation, advice and mediation aspects of the various digital technologies, namely

- Best practices in the use of digital technologies (see IO1, A1)
- Digital technologies for the realization of customer innovations (see IO1, A3)

c) Presentation, consulting and training of the coaching process

d) Pedagogical issues

The training programme consists of a combination of presentations, consultations and discussions in plenary, work in small groups and role-plays.

The conclusions of the evaluation research will contribute to improve the quality, and especially the effectiveness of training, show the limitations of the training model and indicate the direction for further activities.

4.2. Evaluation process

The evaluation process will be as follows:

2. The participants of the Train-the-Trainer will receive an online Semi-structured questionnaire at the end of the training (Appendix A).
3. Time for the survey (approx. 10 minutes) will be allocated in the end of the course.
4. The facilitator of the training informs the participants about the evaluation and its im-portance for further development actions. The purpose of the questionnaire and how the data will be used should be explained clearly to the participants. This will help to improve the response rate and encourage the participants to make comments that can be useful to improve future programs.
5. The questionnaires are being filled in online and submitted automatically and anony-mously to the evaluator of the training.
6. The evaluator analyses all feedback surveys and summarizes them in a written analysis. Based on that, recommendations for the adjustment and future use of the curriculum result.

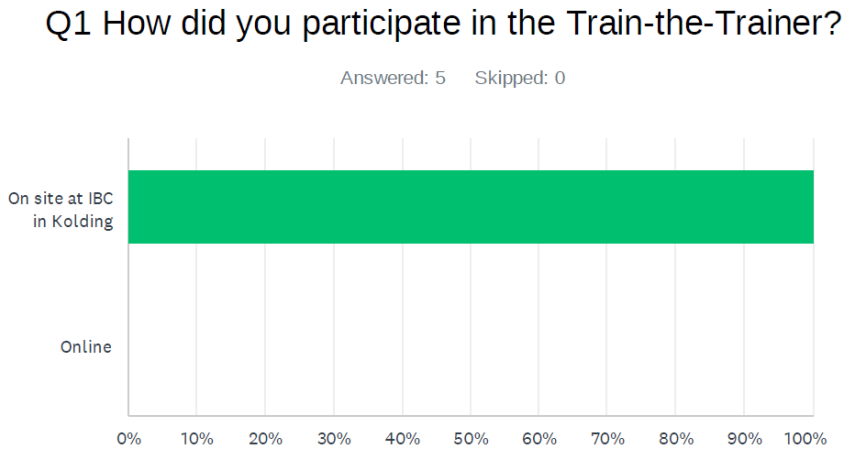
Research methods is written questionnaire as quantitative method.

Written surveys comprised closed-end and open-ended questions. The respondents had to answer to questions in five-point agreement scale including options: Absolutely disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Absolutely agree.

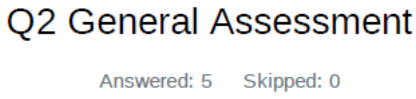
The evaluation approach will be based on a combination of qualitative and quantitative methods. The Microsoft Excel package will be used to transcribe the feedbacks and interviews. Open questions will be categorized, and qualitative analysis of the groups will be done.

5. Results and recommendation

At the beginning of the study, the manner of participation in the training was identified. All the participants of the Train-the-Trainer participate on site at IBC in Kolding.



ANSWER CHOICES	RESPONSES	
On site at IBC in Kolding	100.00%	5
Online	0.00%	0
TOTAL		5



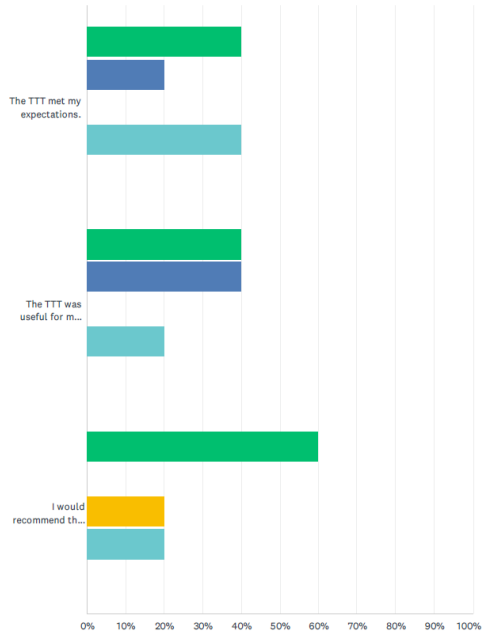
Another area that was analyzed was the overall assessment of the training. Responses in this area were varied. 40% of participants assessed that the training absolutely met their expectations. One participant indicated the answer "somewhat agree", while 40% of the respondents slightly disagreed with the statement that the TTT glazing met their expectations. Total results in this part of questionnaire indicate that TTT training met expectations of participants on average level (2,4). The answers to the question about the suitability of the training for their work were obtained in a similar distribution. 80% of participants assessed the training as "absolutely" (40%) and "somewhat" (40%) useful for their work. For 20% of the participants, the training is only slightly

useful in their work. Total results in this part of questionnaire indicate that TTT training was useful for participants in middle level (2.0).

	ABSOLUTELY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	ABSOLUTELY DISAGREE	TOTAL	WEIGHTED AVERAGE
The TTT met my expectations.	40.00% 2	20.00% 1	0.00% 0	40.00% 2	0.00% 0	5	2.40
The TTT was useful for my work.	40.00% 2	40.00% 2	0.00% 0	20.00% 1	0.00% 0	5	2.00
I would recommend this training course.	60.00% 3	0.00% 0	20.00% 1	20.00% 1	0.00% 0	5	2.00

Next, the participants of the training were asked if they would recommend this training. 60% of respondents indicated that they would absolutely recommend training others. 20% of participants did not have an opinion on this subject, while 20% would recommend this training to others only to a small extent. Total results in this part of questionnaire indicate that TTT training was useful for participants in middle level (2.0). Based on the results obtained, it can be concluded that the training did not fully meet the expectations of the participants (40% somewhat disagree), but the vast majority (80%) found the training useful in their professional work. This justifies the need to implement such training in the area of professional work performed by training participants. The legitimacy of such training is also indicated by the high percentage of respondents (60%) who would recommend the training to others.

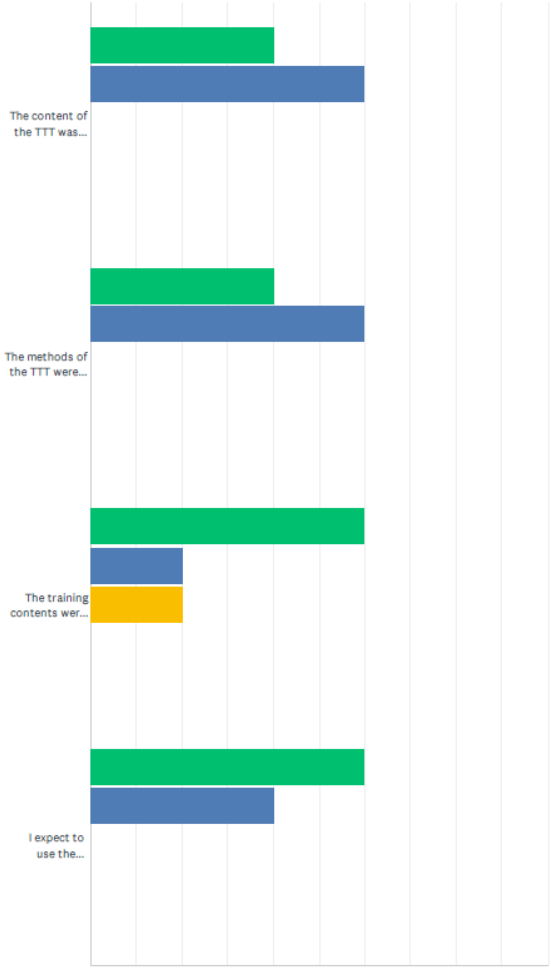
Recommendations: better identification of the needs and expectations of participants at the stage of preparation of the scope of the training and recognition of the professional profiles of training participants in order to increase the usefulness of the training for their professional work.

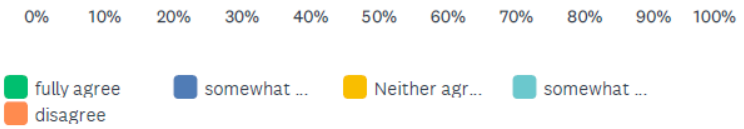


Q3 Content and Methods

Answered: 5 Skipped: 0

Another area that was analyzed in the evaluation was content and methods of training. Respondents were asked a number of questions to determine the correct selection of content and the methods used during the training.





	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The content of the TTT was interesting and informative.	40.00% 2	60.00% 3	0.00% 0	0.00% 0	0.00% 0	5	1.60
The methods of the TTT were suitable.	40.00% 2	60.00% 3	0.00% 0	0.00% 0	0.00% 0	5	1.60
The training contents were relevant to my needs.	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	5	1.60
I expect to use the knowledge and skills gained from this training.	60.00% 3	40.00% 2	0.00% 0	0.00% 0	0.00% 0	5	1.40

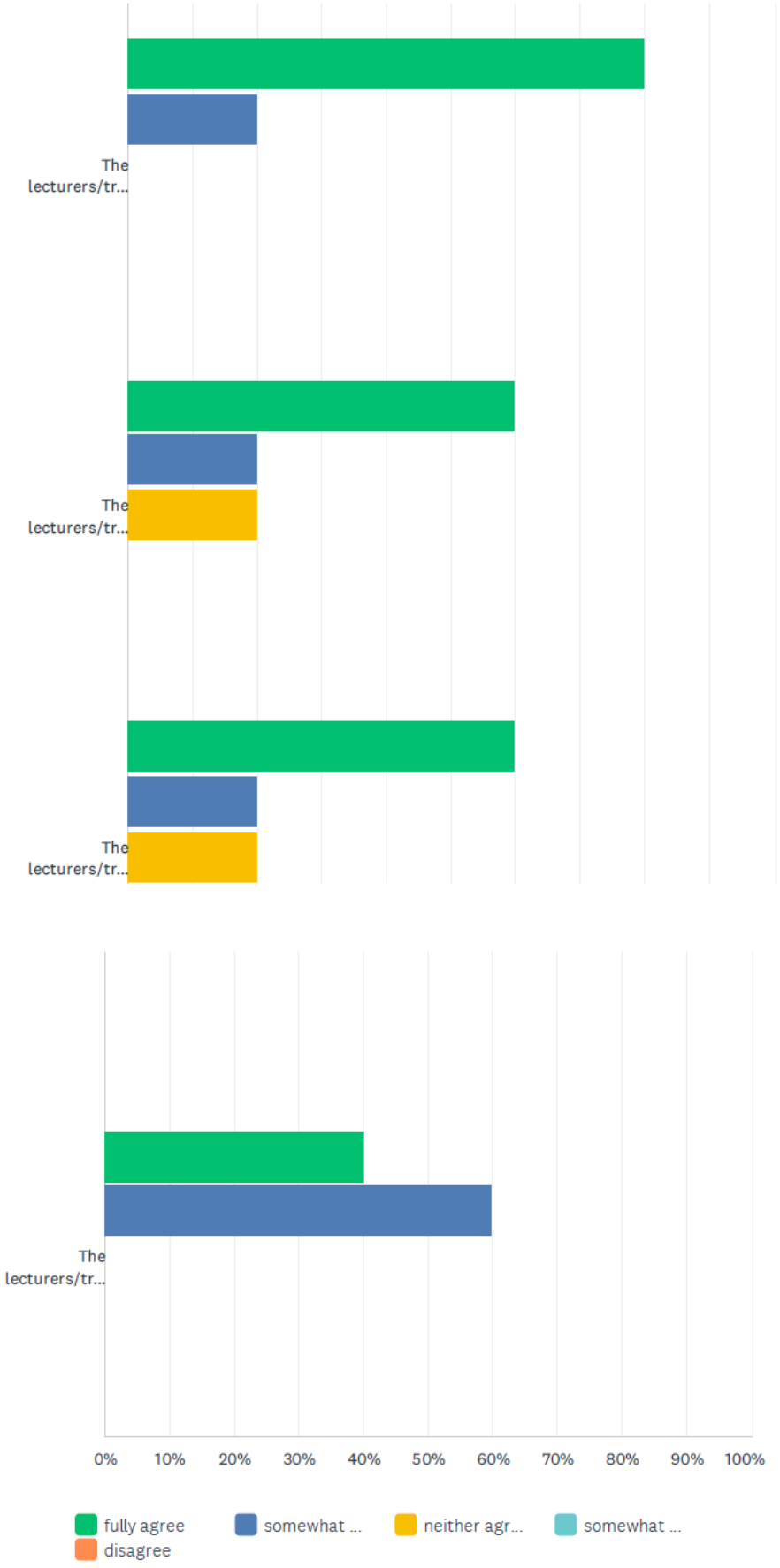
The assessment of the participants in this area of training is high. All training participants agreed with the statement that the content of the TTT was interesting and informative (40% absolutely agree, 60% somewhat agree). Similarly, in terms of the selection of training methods, the participants found that the training methods were properly selected for the scope of the training (40% absolutely agree, 60% somewhat agree). Regarding the assessment of the training content, 60% of respondents considered that the training contents were relevant to their needs (absolutely agree), 20% somewhat agree with this statement, and 20% do not have an opinion on this part of the evaluation. There was a positive response to the use of knowledge and skills gained from the training. 60% of respondents absolutely agree with this statement, while 40% somewhat agree, that they expect to use the knowledge and skills gained form this training.

Recommendations: a more detailed identification of the participants' needs and adapting the training content to their needs.

Q4 Lecturers/Trainers

Answered: 5 Skipped: 0

The next group of questions was based on the evaluation of the teachers and their competences sufficient to prepare the training. It was evaluated in different aspects: communication, friendliness, goal- and results -orientation, competences, preparation. Taking consideration into the aspects mentioned above, the following results were received and presented below.


The lecturers/tr...
The lecturers/tr...
The lecturers/tr...
The lecturers/tr...
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
fully agree
somewhat ...
neither agr...
somewhat ...
disagree

	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The lecturers/trainers were communicative, friendly and approachable.	80.00% 4	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5	1.20
The lecturers/trainers were goal- and result-oriented.	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	5	1.60
The lecturers/trainers were competent and well prepared.	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	5	1.60
The lecturers/trainers responded well to questions and queries from the participants.	40.00% 2	60.00% 3	0.00% 0	0.00% 0	0.00% 0	5	1.60

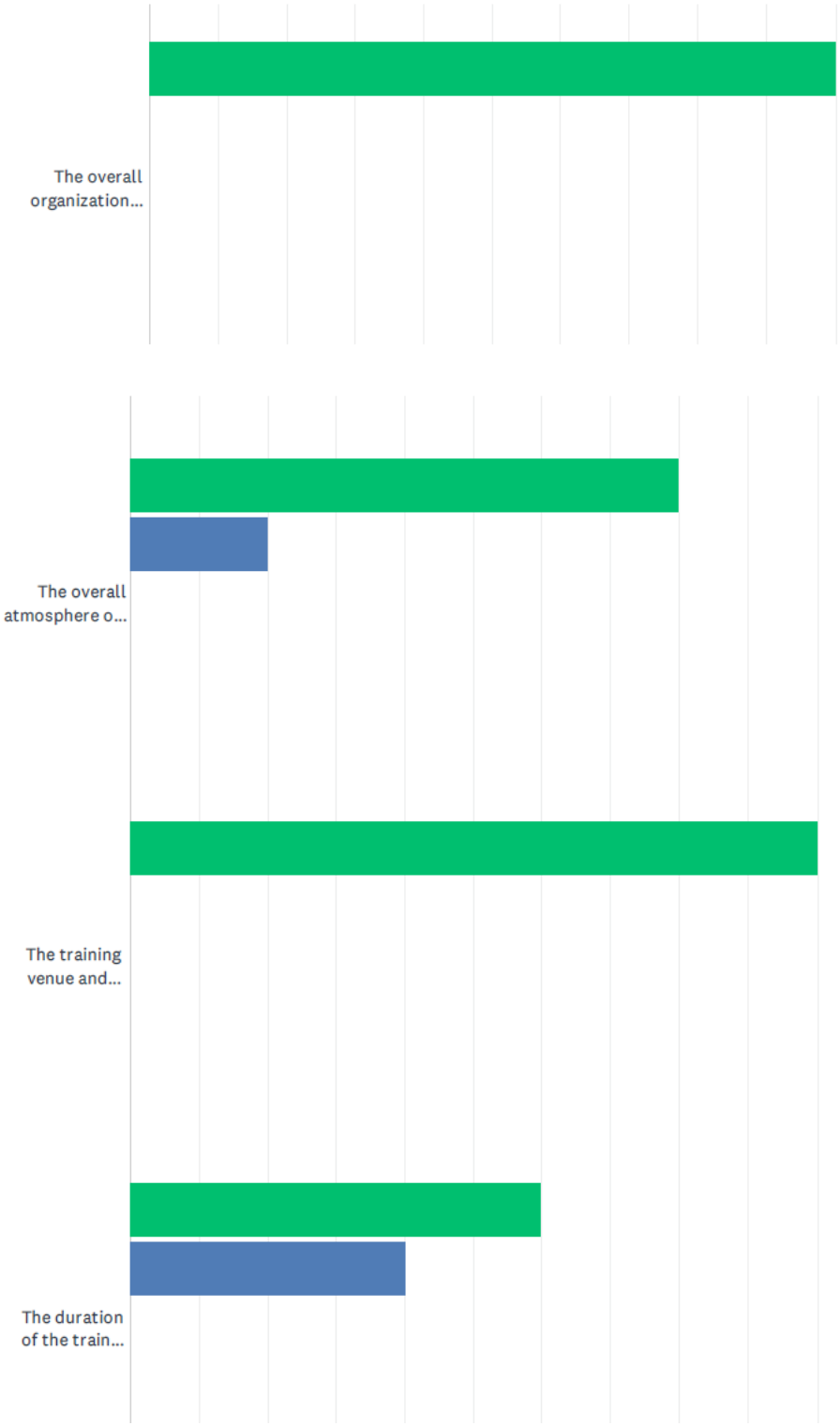
The lecturers / trainers were very high evaluated in the context of communication, friendliness and approach. All training participants assessed these areas positively (80% absolutely agree, 20% somewhat agree). The goal- and result-orientation of lecturers / trainers was likewise highly rated. 60% absolutely agreed with the statement that the lecturers.trainers were goal- and result-oriented, 20% of the participants somehat agreed with this statement, while the remaining 20% did not have an opinion in this regard. The same distribution of responses was obtained for the assessment of competences and the preparation of lecturers / trainers for the training (60% absolutely agree, 20% somewhat agree, 20% neither agree nor disagree). The final aspect in this part of the questionnaire was to assess whether the lecturers / trainers responded well to questions and queries from the participants. The participants assessed this area highly, indicating the answers absolutely agree 40% and somewhat agree 60%.

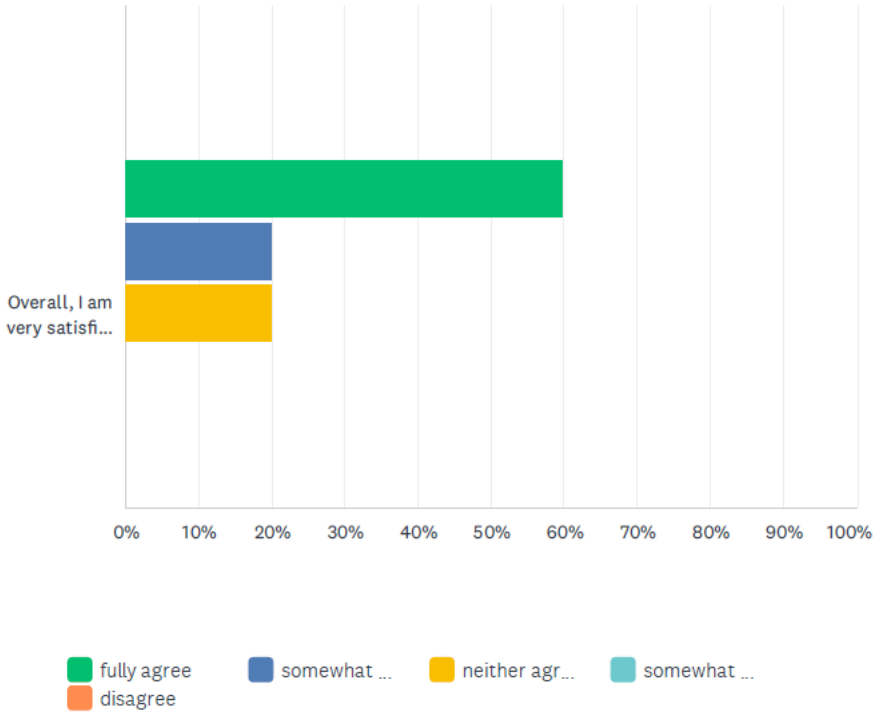
Recommendations: maintaining a high level of competence, preparation, kindness and activity of lecturers / trainers.

Q5 Organization

Answered: 5 Skipped: 0

The last element to be assessed in the training evaluation was the issue of training organization. "The ovarall organization was good" - absolutely all participants of the training agree with this statement (100% absolutely agree). The overall atmosphere of the train-the-trainer was likewise highly rated (80% absolutely agree, 20% somewhat agree).


The overall organization...
The overall atmosphere o...
The training venue and...
The duration of the train...



	FULLY AGREE	SOMEWHAT AGREE	NEITHER AGREE NOR DISAGREE	SOMEWHAT DISAGREE	DISAGREE	TOTAL	WEIGHTED AVERAGE
The overall organization was good.	100.00% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	1.00
The overall atmosphere of the train-the-trainer was good.	80.00% 4	20.00% 1	0.00% 0	0.00% 0	0.00% 0	5	1.20
The training venue and environment was comfortable and conducive to the learning process.	100.00% 5	0.00% 0	0.00% 0	0.00% 0	0.00% 0	5	1.00
The duration of the training was appropriate.	60.00% 3	40.00% 2	0.00% 0	0.00% 0	0.00% 0	5	1.40
Overall, I am very satisfied with the training and would recommend it to other counsellors.	60.00% 3	20.00% 1	20.00% 1	0.00% 0	0.00% 0	5	1.60

The evaluation of the training venue and environment was at the highest level by all training participants (100% absolutely agree). All participants of the training agreed that the training venue and environment was comfortable and conducive to the learning process. Regarding the assessment of the duration of the training, 60% of the participants absolutely agree that, the duration of the training was appropriate. 40% of the respondents samowhat agree that the duration of the training was appropriate. The overall assessment of the training was very good. 60% of overall participants are very satisfied with the training and would recommend it to other counsellors. 20% of respondents somewhat agree with this statement, while the remaining 20% do not have an opinion in this regard. The overall rating of this evaluation element was 1.60.

Recommendations: maintaining the level of training organization at the same level.

Q6 What kind of changes, in your opinion, should be included in a future train-the-trainer of this type?

Answered: 2 Skipped: 3

#	RESPONSES	DATE
1	More of a real training and less of an explorative exchange	11/17/2021 1:40 PM
2	The huge difference in basic understanding what digital innovation is - perhaps because the huge difference in the culture	11/16/2021 9:47 PM

The prepared questionnaire also includes open-ended questions that give the participants the opportunity to speak more broadly and to share other comments. The survey asked what kind of changes, in your opinion, should be included in a future train-the-trainer of this type. Two comments were made in response: more of a real training and less of an explorative exchange and the second that there is the huge difference in basic understanding what digital innovation is - perhaps because the huge difference in the culture. These are important considerations that will enable you to improve your training in the future.

Recommendations: In future training, more attention should be paid to the level of input knowledge to training in each country and a uniform understanding of the concepts by all participants. Before the main topic of the training, an introduction should be added with basic definitions of concepts that will be discussed in the main part of the training. In addition, the conditions and development of a given concept in each of the participants' countries should be analyzed in order to level the differences and adjust the level of training for all participants. It is also worth paying attention to adjusting the training methods in such a way that the participants have a sense of participation in real training, i.e. they gain knowledge that they will actually use in their professional work.

Q7 Is there anything else you would like to share?

Answered: 0 Skipped: 5

#	RESPONSES	DATE
	There are no responses.	

In response to the last open question, participants had nothing else to share.

Appendix A: Questionnaire for Participants of the Train-the-Trainer Course

ICIinSMEs Train-the-Trainer "Consulting & Qualification Digitalisation" feedback survey

Dear Train-the-Trainer participant,

Thank you for taking time to fill out this feedback form on the "Consulting & Qualification Digitalisation" Train-the-trainer (TTT) workshop, that was developed by PP 6 International Business College (IBC) in Kolding, Denmark on 10-12 November 2021 as part of the Erasmus+ project "ICIinSMEs" Y=This survey is anonymous and will take approx. 5-10 minutes.

Please circle the scale that applies to your opinion on the following aspects of the education you participated.

Q1 How did you participate in the Train-the-Trainer		on site at IBC in Kolding		online	
	absolutely agree	somewhat agree	neither agree nor disagree	somewhat disagree	absolutely disagree
Q2 General Assessment					
The TTT met my expectations.					
The TTT was useful for my work.					
I would recommend this training course.					
Q3 Content and Methods					
The content of the TTT was interesting and informative.					
The methods of the TTT were suitable.					
The training contents were relevant to my needs.					

I expect to use the knowledge and skills gained from this training.					
Q4 Lecturers/Trainers					
The lecturers/trainers were communicate, friendly and approachable.					
The lecturers/trainers were goal- and result-oriented.					
The lecturers/trainers were competent and well prepared.					
The lecturers/trainers responded well to questions and queries from the participants.					
Q5 Organization					
The overall organization was good.					
The overall atmosphere of the train-the-trainer was good.					
The training venue and environment was comfortable and conducive to the learning process.					
The duration of the training was appropriate.					
Overall, I am very satisfied with the training and would recommend it to other counsellors.					
Q6 What kind of changes, in your opinion, should be included in a future train-the-trainer of this type?					
Q7 Is there anything else you would like to share?					