



DC4WORK
Digital Competence 4.0



GUIDELINE for the training of “Digital Competence Promoters”

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Content

1. Introduction	2
2. Training concept	4
3. Guideline for the training	8
3.1 Structure and content overview	8
3.2 Training methods, abbreviations and legend	9
4. Implementation of the training	10
4.1 Work-based learning in the digital age and the companies' role	12
4.2 Assessing digital competences in my company	16
4.3 Methods to improve digital competence in my company	20
4.4 Basics for the development of digital competences in SMEs (cross sectors)	24
4.5 Basics for the development of digital competences in touristic SMEs	29
4.6 Basics for the development of digital competences in commercial SMEs	33
5. Training toolbox	36

1. Introduction

The DC4Work project focuses on the necessary digital skills that a workplace 4.0 needs. A digitally well-set company is supported by employees who have professional specific digital knowledge and competences. The aim of each company should therefore be the promotion of digital competences to improve employability and therein the competitiveness of the company.

Alongside technical infrastructure and a digital strategy, the digital competences of employees are the prerequisites to manage the shift towards a digitally savvy company. Within the framework of the project DC4Work, an online survey addressed to SMEs in the tourism and retail sectors as well as interviews with experts from research, administration and practice were carried out. Their aim was to understand the awareness and practices existent in SMEs concerning measurement, promotion and development of employees' digital competences at their workplace. In detail, the study contributed to the identification of:

- key digital competences required by SMEs of tourism and commerce/trade sectors;
- mismatches between the employees' qualifications/competences and the SMEs' needs (in these sectors) and
- flagship initiatives of practices existent in SMEs that are suitable to be used as a benchmark.

The results of the aforementioned study served to create the present guideline. The identified demands and requirements of the companies are the essential basis for the development of the present document. It addresses the so-called "Digital Competence Promoter" in SME's and serves as a guideline to facilitate the development towards this assignment.

The "Digital Competence Promoter" takes on an interface function between education/training and the world of work. Their task is to enable colleagues/staff members to become aware of their improvement potential regarding digital competences and translate it into action. Thus, they need to be equipped with content-related information as well as methodological knowledge.

Although the project places an emphasis on the tourism and commerce sectors, the guideline can also be used to train promoters in companies of other sectors or scope (see modules 1 - 4).



2. Training concept

The motivation to develop this guideline arises from the growing necessity of digital literacy and the significance of digital development in companies. The ability of executives to identify their employees' needs in terms of digital skills and to appropriately support their development is of growing importance for a company's performance and success. The task of serving as an innovator and mentor of digital knowledge at the workplace should be taken over by the "Digital Competences Promoter" of the company.

The guideline is created to provide a training curriculum for the vocational education and training of such an in-company "Digital Competence Promoter". This promoter should obtain basic digital knowledge in general and sector specific digital knowledge. The focus within the project are the sectors of tourism or retail.

The target group are employees in leading positions who want to consolidate and further develop digitization in their company and to be available as coaches for the digital training of their employees. The qualifications required of future promoters are openness to the topic and motivation for the digitally supported renewal and further development of the own company. They should take into account that the task will demand a certain amount of time and capacity, depending - among other things - on the size and the status quo of the company. We assume that the target group has at least one degree on EQF level 4 - 5 (graduation, apprenticeship) in vocational profession. The additional qualification for employees as "Digital Competence Promoter" corresponds to EQF level 5.

Regarding the tourism sector, the training concept is addressed to owners and junior managers of small and medium sized hotels, guesthouses and restaurants, and focuses on covering the digitalization of all areas, including reception, service, facility management, kitchen and animation (wellness and outdoor). In this context, a profound knowledge of ICT is essential and must be part of marketing, customer service, revenue management, etc.

In respect of the retail sector, the training concept is addressed to retail shop owners or managers of different kinds of sales areas such as clothes, shoes, sportswear, cosmetics, toys, electronic devices, etc.

Digital competence and digitally savvy companies

The concept of digital competence is perceived differently, depending on the context and fields of application. In this present guideline we refer to digital competence as a set of knowledge, skills, attitudes (including abilities, strategies, values, and awareness) that are required when using ICT and digital media

- to perform tasks;
- solve problems;
- communicate;
- manage information;
- collaborate;
- create and share content; and
- build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socializing, consuming, and empowerment.¹

The development, implementation and control of data-driven processes and business models with the inclusion of ICT and digital technologies furthermore requires extended competences of the employees. New interdisciplinary skills are gaining importance due to the digitalization of our world and are mostly not connected to the specializations of the employees. The increasing degree of networking also requires professional competences such as system and process knowledge, self-organization and communicative skills.

To build a digitally savvy company it is also necessary – especially in SMEs – to focus on the "cognitive agility" of the own employees, the willingness to engage with new developments, and to adapt one's behavior to the current circumstances. Within this process, the differentiation of humans from machines is crucial. Creativity, flexibility, categorical and conceptual thinking and critical reflection distinguish humans from machines.

¹ See also: http://jiscdesignstudio.pbworks.com/w/file/attach/55823162/FinalCSRReport_PDFPARAWEB.pdf
pag. 3-4

Nevertheless, the sensitization and training of employees in terms of “working digitally” regarding work organization and time management is highly recommended.

Hence, the following questions are relevant:

- How can we use technology in order to work more efficiently?
- How can we learn to stay focused and concentrated despite digital distraction at work? “Digital Stress Management” as a new issue?

In summary, it is highly recommended for companies to implement the following steps:

- creation of digital competence assessments for the employees
- design of tailor-made digital education activities
- development of motivating working conditions for workplace learning (“digital workplaces”) to support experience-based learning and to offer more learning time
- development of a “digital culture” to enable effective digitalization by opening the minds of the employees

The present guideline focuses on these competences by approaching the topic from different points of view. Firstly, the enterprise needs to be understood as learning organization, with leaders or managers empowering their staff to grow in and for the digital (working) world. Secondly, it is suggested for a company to build up digital in-house competence, which can be translated into setting up the assignment of the so-called “Digital Competence Promoters”.

Role of the Digital Competence Promoter

Digital Competence Promoters have the ability to oversee the recent digital status of a company alongside with future digital changes. By doing so, the promoter can apply assessments of employees, which is the basis for staff empowering to promote digitally savvy employees.

Digital promoters can be managers and employees in executive positions by appointment; thus they take up this function additionally to their usual tasks and responsibilities. A high personal interest in the topic and the motivation for internal further development of digital competences are required. The scope of the promoter’s activities

can be quite different depending on their assigned responsibility, the size of the company, technological changes, and the sector.

The “Digital Competence Promoter” in SMEs should know how explicit and implicit digital knowledge can be supported (keywords: digital fluency, digital dexterity, sovereignty) and how the intrinsic motivation to improve digital skills can be emphasized.

3. Guideline for the training

3.1 Structure and content overview

Module 1	Work-based learning in the digital age and the companies' role
1.1	The role of leaders for the development of digital competences
1.2	Setting up a learning organization
1.3	Integration of work-based learning 4.0 – empowering learners
Module 2	Assessing digital competences in my company
2.1	Why do we assess our staff?
2.2.	How to map digital knowledge, skills and competences
2.3	Providing feedback to foster learning motivation
Module 3	Methods to improve digital competences in my company
3.1	Self-directed informal learning
3.2	Collaborative facilitating methods for competence development
3.3	Collaboration with educational institutions
3.4	Open badges for successful digital competence development
Module 4	Basics for the development of digital competences in SMEs (cross sectors)
4.1.	Hardware skills and digital infrastructure
4.2.	Software skills and data literacy
4.3.	Internal and external use of communication and information tools
4.4.	Creation and transformation of digital content
4.5.	Safety principles and legal regulations
Module 5	Basics for the development of digital competences in touristic SMEs
5.1	Website generation and search engine optimization
5.2	Management of databases and data processing
5.3	Online reputation and successful digital marketing
5.4	Influence and organizational impact of new technologies
Module 6	Basics for the development of digital competences in commercial SMEs
6.1	Digital marketing
6.2	Customer understanding in the digital age
6.3	Managing customer data

3.2 Training methods, abbreviations and legend

Throughout the guideline, different training methods are suggested for the implementation of the digital promoters' training. In the following table, you can find a short overview of methods applied in the curriculum with their abbreviations used in the module description and a short explanation. This list is not exhaustive; please feel free to include any other training method you think is suitable².

Method	Abbreviation	Explanation
Brainstorming	Brain	Creative activity to solidify suitable ideas from a pool of many different initial ideas (of a group of people): to suggest numerous ideas for a future activity or a problem solution very quickly before considering any of them more carefully.
Presentation	PT	A talk giving information about a certain topic.
Exercise	EXE	An action or task with repeating character to improve skills, often aiming to practice explicit knowledge gained before.
Discussion	DISC	An activity in which learners talk about a topic and tell each other their ideas or opinions.
Case study	CAS	Studying cases that can be used as an example to pick up general principles or to practice knowledge/skills.
Group work	GrW	Managing tasks in a group, in comparison to individual work.
Peer learning	PeL	Learners on the same level share knowledge, teaching each other what they know without an instructor or another person of authority.
Project work	PW	An educational method in which learners solve a practical problem over a period of several days or weeks.
Role play	ROP	A method where learners are asked to pretend to be someone else, especially as part of learning a new skill.
Self-study	SELF	Studying something by oneself, as through digital material, records, etc. without direct supervision or class attendance.
Online research	ONLINE	Searching for relevant information online, preferably being aware of the quality and reliability of online sources.

² Method descriptions based on <https://dictionary.cambridge.org/>, retrieved December 17, 2018

Another important term in the curriculum is “learning outcomes”. These are statements of what a learner knows, understands, and is able to do after completion of learning (Cedefop, 2009). These statements can be designed and used for educational planning and curriculum development, or for different types of accountability such as legal or professional accountability (Prøitz, 2010).

4. Implementation of the training

This document combines six modules containing different learning units that provide informational input as well as external links and learning apps concerning digital competences for companies.

The idea of the document is to enable companies to promote digital competences of their employees (through digital competence promoters) by providing information and self-study applications for central topics about digitalization and digitization of companies and workplaces.

New research studies show that around 70 % of learning happens due to challenging work processes, 20 % by interaction with others and only 10 % in the context of standard learning processes like courses or workshops. Considering this while creating this document, the digital promoter should obtain an overview of the necessary competences of the employees and how to achieve them. The promoter should be enabled to gain competences himself and have external resources for the acquisition of skills at hand. Therefore, the following chapters provide information that can be directly used by the promoter to develop training assessments for other employees concerning the acquired topics as well as integrated training apps and ideas for workplace related training methods.

The development of training and competences is always related to assessment as part of the feedback loop on how progress is being made. In this context, there are three aspects that need to be considered when talking about assessment:

- Firstly, the Digital Competence Promoter will acquire certain knowledge and skills throughout the process of getting trained or self-studying the presented material

and tools in the DC4Work online toolbox. Thus, each training module provides a quiz at the end for a self-review of the learning result.

- Secondly, one of the promoters' tasks will also be assessing the other employees' improvement of digital competences, as the promoter is the one guiding them through the upskilling process with the help of the present guideline.
- Thirdly, assessment appears as a topic in Module 2 of this guideline. Assessment is perceived as important prerequisite for the employees' development of competences, following the principle "before you go, you first have to know where you are". Assessment can be done in different ways: self-assessment, peer-to-peer assessment as one type of external assessment, feedback talks, etc. On the other hand, assessment is also important for a continuous and final evaluation of the learning progress. For further details, we recommend to study Module 2.

4.1 Work-based learning in the digital age and the companies' role

Module 1	Work-based learning in the digital age and the companies' role	
Chapter 1.1	The role of leaders for the development of digital competences	
<p>Brief description: This chapter gives an overview about leadership in relation to digital change. You will learn about a leadership style that facilitates the development of digital competences among staff. You will also find out how to use leadership skills to promote a Leadership 4.0 culture in your organization. Finally, the question how you can empower colleagues and your company as a whole by promoting digital competences and competitiveness will be raised.</p>		
Learning objectives	Content & Learning outcomes The learner is able to...	Methods
Role of leaders in promoting digitalization, raising awareness for changes and sensitizing workers for digitalization	<ul style="list-style-type: none"> - increase their own self-awareness - understand the impact of leaders on others - understand leaders as role models for the use of new technologies and mind sets - draw on leadership approaches promoting digital change (participative leadership, managing autonomous workers etc.) - give and receive feedback - work collectively to achieve results 	BRAIN PT CAS
Role of leaders for employees' development and the acquisition of competences	<ul style="list-style-type: none"> - understand the role of a skilful digital leader who acts as the head of the project - make themselves familiar with necessary competences of digital leaders such as digital competence or literacy, but also various "softer" skills - build digital competence requirements across the employee talent life cycle - train people to become lifelong learners with skills and attitudes to close the digital competence gap 	PT GrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - identify who has leading functions in the company and analyze their impact on employees - deal with self-awareness questions on their own leadership style (if the promoter is the company's manager) - discuss in teams real (or fictional) cases of win-win negotiation tactics to promote the need for the training of digital competencies in their organization/company - create a mind map showing how the development of digital competences fits in the global digital strategy of the company 	



Module 1	Work-based learning in the digital age and the companies' role	
Chapter 1.2.	Setting up a learning organization	
<p>Brief description: In the time of knowledge-based economy and continuous digital transformation, only learning organizations may be competitive. Knowledge creation, acquisition and transfer, however, require a supportive and open environment. This chapter presents the importance of a supportive learning environment and introduces the idea of a “learning organization”. It also gives some examples of learning styles as a basis for the further designing of individual/personal learning paths.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Idea of a learning organization and role of technology	<ul style="list-style-type: none"> - characterize learning organizations - understand the basic roles and functionalities of modern technology in a learning organization: enabler of creating a supportive environment, allowing for flexibility and autonomy as well as collaboration, knowledge capturing, peer learning and assessment, co-creation, etc. 	BRAIN PT CAS
Role of a supportive working and learning environment to promote the acquisition of digital competences	<ul style="list-style-type: none"> - explain social aspects of supportive environment: motivation, trust, etc. - explain technical aspects of a supportive environment: mobile devices, software, etc. - keep concepts of flexibility in time and space and autonomous learning in mind - resort to ways of promoting workers: integration in projects related to technology, etc. - understand aspects of communication: apply a positive approach instead of speaking about a lack of skills 	PT GrW PW
Learners preferred learning styles at the workplace (collaborative and self-directed learning)	<ul style="list-style-type: none"> - explain the characteristics of different learning styles: <ul style="list-style-type: none"> o in the workflow: as part of their daily workplace activities o continuously: through the constant flow of workplace information o immediately: through solving problems to get the job done o socially: through learning from others and working collaboratively o autonomously: as self-directed learners - understand the advantages of collaborative and self-regulated learning (learning by playing, learning by exploring, learning by creating, learning by doing, etc.) 	PT GrW DISC
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - suggest building teams of experienced and new employees so that they can learn from each other (company history and culture, good and bad experiences, successes and failures) - promote teams of mixed age employees who can help each other in applying digital tools for work - install systems to capture knowledge with the help of digital technology tools while learning new skills, new functionalities of the equipment used and how this can help the company develop in practice - observe and survey colleagues about their motivation and their preferred style of learning - train teams and/or executives to give constructive feedback (criticism) 	



	<ul style="list-style-type: none">- discuss possible incentive programs with the management while presenting cases/ good practice of other organizations
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Module 1	Work-based learning in the digital age and the companies' role	
Chapter 1.3	Integration of work-based learning 4.0 - empowering learners	
<p>Brief description: The work processes as well as the instruction of new employees or upskilling of adult employees to adapt to the modern digital environment are increasing the need for the integration of working and learning. In this context, digital technologies need to be pooled to obtain and boost the employees' digital skills and enable the creation of work environments with new opportunities to purposefully facilitate learning new tasks.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Models of WBL and examples of WBL using digital technologies	<ul style="list-style-type: none"> - present advantages and disadvantages of WBL for the learners and employers, for the company (organization) and the society - easily identify WBL models and the possible combination of models tailored to the individual's needs and style of learning - gain expertise in different kinds of WBL based on digital technologies: <ul style="list-style-type: none"> ● internet research for specialist information ● webinars at the workplace ● web-based trainings ● co-worker training (use information for on-the-job training here) ● peer-to-peer learning (using social networks) 	BRAIN PT PW PT; ROP; ONLINE; EXE
Integration of learning in daily work processes (LLL)	<ul style="list-style-type: none"> - motivate staff to learn directly at work and translate advantages of work-integrated learning - explain the concept of lifelong learning - describe good conditions for work-integrated learning in terms of flexibility, time and space - explain the advantages of on-the-job training i.e. by co-workers 	DISC PW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - draft a real (or fictional) action plan for integrating a WBL training program in their organizations -> provide comments and agree or disagree upon the proposed plan - apply joint work evaluation - discuss the lifelong learning path of experienced colleagues and identify important milestones of learning as good practice 	

4.2 Assessing digital competences in my company

Module 2	Assessing digital competences in my company	
Chapter 2.1	Why do we assess our staff?	
<p>Brief description: It is advisable for companies and organizations to continually invest in the progress of their employees by assessing their strengths and weaknesses. By doing so, employers are more able to match employee qualifications to job assignments. This chapter concentrates on employee assessment revealing strengths and weaknesses of individual employees as well as the collective talents of a team or department.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Importance of qualified assessment at the workplace	<ul style="list-style-type: none"> - understand employee evaluation as an instrument for determining whether an employee's skill set is appropriately matched to their job - promote the evaluation of outcomes and processes on a regular basis and supported by measurement - understand skills management as an ongoing process, with individuals assessing and updating their recorded skill sets regularly - create a formative learning experience with challenges and performance-based tests by providing feedback based on the answers received - give explanations for the interpretation of test results (e. g. meaning of "weak competence") 	BRAIN PT CAS
Assessment goals	<ul style="list-style-type: none"> - identify a person's strengths and areas for improvement and set a learning agenda - compare their own digital competence profile with that of other employees in the company/labor market - guide users towards further learning opportunities based on assessment results 	Brain PT EXE ONLINE
Effectiveness of work-based assessment	<ul style="list-style-type: none"> - set expectations by clarifying learning intentions and criteria for success - assess authentic performance by focusing on practice in the work environment - provide evidence of learning in terms of performance and progression - encourage skill development, particularly self-directed learning - involve management into the discussion about assessment - check which assessment procedures are already in place - decide on assessment goals and procedures together with the management - scale assessment procedures according to the company's size and needs 	Brain PT PW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - carry out a performance appraisal of an employee's job performance over a specific period of time - work with a portfolio that demonstrates the journey of a learner towards attaining professional competence - discuss the advantages and disadvantages of work-based assessments in workshops with employees 	



Module 2	Assessing digital competences in my company	
Chapter 2.2	How to map digital knowledge, skills and competences?	
<p>Brief description: Digital competence improvement should be based on a clear foundation. In this module, you will make yourself familiar with recording and assessing digital skills. Which methods and instruments exist to carry out this task? Which concepts should you have heard of? Which digital competences need to be assessed? This knowledge will enable you to suggest means for digital upskilling in your company.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Necessary digital competences for a specific job profile (= desired state)	<ul style="list-style-type: none"> - draw on reference points for orientation, such as operational requirements: which business processes require digital skills and which skills will be necessary in the future - examine relationships to customers and partners to gain valuable information about new technologies or tools already being tested and used in other areas, changing applications and how communication with customers or guests can be designed differently - consider existing competence catalogues, i.e. DigComp framework of the EU and other 	CAS BRAIN, DISC INDW, Research
Reference framework "DigComp" as general basis for formal digital skills assessment	<ul style="list-style-type: none"> - explain and apply the DigComp framework to staff - draw up job descriptions including DigComp aspects - apply the framework to define learning requirements and use it as a source for internal learning plans 	Brain PT EXE ONLINE
Recording and assessing existing digital knowledge, skills and competences (= actual state)	<ul style="list-style-type: none"> - communicate reasoning for assessment: inform employees exactly about the benefits they gain from the move, how it will result in positive changes to their job and how the new knowledge will make their tasks simpler - distinct between formally and informally acquired digital skills - recognize the importance of attitude towards technology and digital applications – role of positive mind-set - apply methods to recognize existing potential of employees (often coming along as informally acquired digital skills and attitudes) such as observations, annual staff appraisal, self-assessment of employees, etc. 	GrW, PT ROP, EXE GrW -> each group researches one method and presents it to the other party CAS Video
Comparison of actual and desired state (skills matching)	<ul style="list-style-type: none"> - update the job description or task area for a specific job profile - identify the need to catch up with certain digital skills and the extent to which this needs to be done - choose the appropriate level of systematization: from informal settings to documented job descriptions and goal agreement systems 	Exemplary discussion using a case study



	<ul style="list-style-type: none">- plan, implement and review the regular dynamic process of up-skilling
<p>Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter</p>	<ul style="list-style-type: none">- include employees in the assessment process by explaining goals and pointing out positive effects- evaluate (assess) digital competence of your employees with the help of the self-assessment grid DIGCOMP- test planned assessment procedures with smaller pilots- spot competence improvements, for example by actual (live) practice, i.e. products produced as a consequence of practice (e.g. web-site)- discuss in a responsible team how job descriptions need to be rewritten to meet future tasks of and expectations on employees



Module 2	Assessing digital competences in my company	
Chapter 2.3	Providing feedback to foster learning motivation	
<p>Brief description: Frequent employee feedback is one of the best practices for tracking employee progress (assessment) and improving it. In this chapter, you will learn more about the practice of feedback helping the employees and the entire enterprise or organization to increase their productivity. To put feedback into practice it is worth finding out more about the criteria of effective feedback, feedback methods and an encouraging environment.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Interpretation of skills assessment and formulate feedback in a supportive manner	<ul style="list-style-type: none"> - adapt teaching and assessment practices based on the feedback collected - provide personal feedback and offer differentiated support to learners - enable learners to evaluate and interpret the results of formative, summative, self- and peer-assessments - assist learners in identifying areas for improvement and jointly develop learning plans to address these areas 	BRAIN PT CAS
Criteria of effective employee feedback	<ul style="list-style-type: none"> - apply criteria of effective employee feedback, e.g. considering specific information, communication mode, structure of feedback talk or how to address employees individually 	Brain PT DISC ROP
Methods and instruments to provide feedback	<ul style="list-style-type: none"> - describe different feedback methods such as: <ul style="list-style-type: none"> o staff evaluation forms for employee self-assessment compared to the supervisors' performance appraisals of their employees o 360-degree feedback o peer evaluation o focus groups 	Brain PW ONLINE
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - invite experts to hold workshops on feedback and motivation (in particular for executives) - sit in on feedback talks of colleagues/management if possible to learn more about feedback methods already applied - discuss actual and desired feedback culture with management and employees - show videos of how not to provide feedback 	

4.3 Methods to improve digital competence in my company

Module 3	Methods to improve digital competence in my company	
Chapter 3.1	Self-directed informal learning	
<p>Brief description: When developing digital competence at work, self-directed learning is an economic necessity. New knowledge accumulates quickly and industries change rapidly, so that many traditional education paths cannot keep pace. By learning more about self-directed learning, you will understand how individuals can take the initiative regarding their learning needs, identify available resources and choose appropriate learning strategies.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Awareness of efficient self-learning strategies and capability to plan personal learning process	<ul style="list-style-type: none"> - understand the idea of self-directed learning and recognize efficient self-learning strategies - set personal learning goals and choose personal strategies for learning - implement self-directed learning strategies in their personal learning environment 	SELF PeL GrW
Awareness of open learning resources available for self-learning in their personal working and learning environment	<ul style="list-style-type: none"> - recognize open learning resources available in their working and learning environment - utilize open learning resources available in their working and learning environment for their personal learning - understand self-learning strategies as instruments for continuous, life-long learning at work - promote self-learning strategies as a regular basis of learning at work 	SELF PeL GrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<p>Employees are not always aware of free, convenient ways and self-learning strategies they can use to update their skills and knowledge at work. Making the strategies explicit and discussing them openly supports employees to recognize and find several open resources and opportunities for learning in their own working environment. This is important in supporting the employees' life-long learning and learning at work as well as for the incorporation of cost-efficient methods for up-to-date skills development at work.</p> <ul style="list-style-type: none"> - involve the management into the discussion about self-learning strategies at work - list self-learning strategies and opportunities for learning at the work place - brainstorm open learning resources and make them explicit at the work place - plan the encouragement of employees to self-learn at work 	



Module 3	Methods to improve digital competence in my company	
Chapter 3.2	Collaborative facilitation methods for the development of digital competence	
<p>Brief description: Considering the existent diverse learning needs and preferences, a range of collaborative facilitation methods support the development of digital competence in companies. This chapter informs about collaborative methods that are effective for accelerating work-based learning and sharing knowledge. The methods are context-sensitive and support the participants' engagement and motivation to learn at work.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Awareness of collaborative facilitation methods to plan and support knowledge sharing and collective learning at work	<ul style="list-style-type: none"> - understand the idea of collaborative facilitation methods - list several efficient facilitation methods like Learning Café, Gallery Walk, Backcasting 	SELF PeL GrW
Capability to implement collaborative facilitation methods in learning digital competences at work	<ul style="list-style-type: none"> - plan, implement and assess the use of collaborative facilitation methods at work - plan the support of collaborative facilitation methods by technologies, e.g. free back channel applications 	SELF PeL GrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	Collaborative facilitation methods offer efficient and cost-free ways to support the employees' knowledge sharing and new knowledge building. After getting familiar with collaborative facilitation methods, employees make a plan of digital competences that need to be improved in the company and how to use collaborative facilitation methods in the promotion of the employees' skills.	



Module 3	Methods to improve digital competence in my company	
Chapter 3.3	Collaboration with educational institutions	
<p>Brief description: Collaboration with educational institutions offers new and innovative methods for a company's digital competence development. Vocational training institutes as well as students from vocational and higher education institutions solve companies' digital challenges and offer digital tutoring for employees as well as co-innovative new digital working practices with employees.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Awareness of several approaches for the collaboration with educational institutions in digital competence development	<ul style="list-style-type: none"> - apprehend several approaches for collaboration with education institutions such as the case examples Amazing Business Train, CSchool and HAMK5 - reflect and assess the possibilities and benefits of collaboration with educational institutions in digital competence development 	SELF PeL GrW
Capability to plan, implement and assess collaboration with educational institutions in digital competence development	<ul style="list-style-type: none"> - plan, implement and assess a practical experiment with a local educational institution for the company's digital competence development 	SELF PeL GrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	Collaboration with educational institutions offer new, innovative and cost-efficient possibilities for companies to develop their employees' digital competence. It is resource-efficient to network with local educational institutions for mutual benefit. The companies get new resources, ideas and energy from students to meet their challenges and the students, in turn, have the possibility to become familiar with the world of work. The employees map the local educational institutions, establish connections and start brainstorming for an experiment of collaboration.	



Module 3	Methods to improve digital competence in my company	
Chapter 3.4	Open Badges for the successful development of digital competence	
<p>Brief description: The Open Badges concept is an efficient, fun and cost-saving method for digital competence development in SMEs. Open Badges make digital competence development visible, explicit and easy to monitor and assess. Companies can create their own Open Badges for competences that are crucial for their own business or branch.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Awareness of the Open Badges concept and how to operate with it in general	- apprehend the Open Badges concept and compose criteria for the company's own Open Badges	SELF PeL GrW
Capability to plan, implement and assess Open Badges implementation in a company's digital competence development	- plan, implement and assess Open Badges implementation in a company's digital competence development	SELF PeL GrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<p>The Open Badges concept is an efficient, fun and cost-saving method for digital competence development in companies. After getting familiar with the concept of Open Badges, employees start planning the company-based Open Badge constellation (topics, learning objectives, assessment criteria, how to make competence visible). The planning also includes an analysis and mapping of the most important development needs that can be supported by Open Badges. Further parts of the planning process are the assessment of different platforms available for Open Badges (e.g. Open Badge Factory, OERCommons, Badgr, BadgeOS) and choosing a suitable platform for the company use.</p>	

4.4 Basics for the development of digital competences in SMEs (cross sectors)

Module 4	Basics for the development of digital competences in SMEs (cross sectors)	
Chapter 4.1	Hardware skills and digital infrastructure	
<p>Brief description: This chapter gives an overview of the most important hardware components and their functions as well as basic network technology. It enables the user to solve simple problems concerning hardware and network technology.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Basic principles on hardware	<ul style="list-style-type: none"> - name and localize the main hardware components of workstations and mobile devices - understand the main network components and peripherals (printer, scanner, sound system, multimedia system, Alexa, ...) - handle terminology and definitions of computer hardware (hard drive, motherboard, graphics board, ...) - diagnose and analyze hardware malfunctions - substitute hardware components 	BRAIN PT visual aids unscrew a PC
Basics of networking technology, EDP and troubleshooting	<ul style="list-style-type: none"> - use telephone systems and VOIP - set up wireless networks - diagnose and analyze network transmission errors - prevent hazards and adverse events ("Hands off! topics") - diagnose the most common problems concerning network problems and basic troubleshooting 	BRAIN PT EXE
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - images of different hardware components - presentation of troubleshooting guidelines - solve a hardware or network problem and perform a basic troubleshooting scenario - watch a video about hardware and network setup - project work about network setup 	



Module 4	Basics for the development of digital competences in SMEs (cross sectors)	
Chapter 4.2	Software skills and data literacy	
<p>Brief description: Digitalization provides a variety of possibilities to rise efficiency and the effective outcome of a company by the use of digital sources such as search engines, free programs, etc. The aim of this chapter is to enable the digital promoter to use existing tools to effectively find, evaluate and use data, information and content.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Basics about software and storage media	<ul style="list-style-type: none"> - understand how information processing works - use storage devices to conserve data 	
Localization of digital content	<ul style="list-style-type: none"> - find data, information and content in a digital environment - articulate information needs and search for relevant data - develop and update personal search strategies 	Brain EXE OJT ONLINE
Data management basics	<ul style="list-style-type: none"> - organize, store and retrieve data in a structured environment - administer bookmarks 	EXE PrW
Critical evaluation of data	<ul style="list-style-type: none"> - analyze, compare and critically evaluate data sources and digital content 	PT EXE
Background knowledge about websites	<ul style="list-style-type: none"> - understand the basic structures of a website - distinguish between short codes, functions, Meta-information, templates, category-tagging, SEO parameters,... 	PT
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - exercises with different topics implementing the competences taught in this chapter - creating a blog following the instruction on the following website (http://www.23things.ed.ac.uk/) (the content of this blog should be related to the company's tasks in order to be useful and implementable) 	



Module 4	Basics for the development of digital competences in SMEs (cross sectors)	
Chapter 4.3	Internal and external use of communication and information tools	
<p>Brief description: This chapter gives a basic knowledge about digital communication and collaboration within the company and with potential customers. It introduces the competent use of social networks and communication platforms for exchange and marketing as well as useful digital communication tools. Different kinds of storage systems will be presented and discussed.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Online cooperation and virtual workplaces	<ul style="list-style-type: none"> - optimize workflows and information exchange - reduce space, equipment and paper load - ensure data access and local flexibility 	PT DISC
Online data storage systems and cloud computing	<ul style="list-style-type: none"> - work with different types of cloud storage systems - evaluate risks and benefits of cloud storage systems - create user accounts 	BRAIN PT Video (HP)
Social media and competent digital networking	<ul style="list-style-type: none"> - use existing social media to spread information - distinguish the existing media regarding user age, target group, coverage, ... - take cultural and generational diversity into account 	Brain ONLINE
Competent and coherent appearance in online media	<ul style="list-style-type: none"> - act according to behavioral norms of digital interaction - follow communication strategies - show sensibility towards cultural and generational diversity 	ONLINE PrW
Web based applications	<ul style="list-style-type: none"> - use office applications for text editing, email clients, spreadsheet calculations,... - evaluate differences between OneDrive and Google Drive - work with shared documents, shared calendars and to-do lists - set up a remote client and VPN network 	BRAIN PT
Mobile tools	<ul style="list-style-type: none"> - use smartphones and tablets as mobile tools for data collection and data transmission - name and evaluate existing service providers - use mobile tools according to the status quo of data protection 	PT EXE
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - presentation of different communication systems for internal and external use - implementation of useful systems (clouds, skype,...) in the company's everyday life - group works that can be implemented in the ongoing work traffic 	



Module 4	Basics for the development of digital competences in SMEs (cross sectors)	
Chapter 4.4	Creation and transformation of digital content	
<p>Brief description: The problem of managing content and information was not born with the internet, but has concerned humankind for centuries. With digitalization, the amount of accessible information has multiplied, which leads to a major storage problem. This chapter shall instruct the promoter on classification, evaluation and creation of digital content. The term content management system (CMS) will be introduced and explained.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Distinguish between different types of content	<ul style="list-style-type: none"> - explain the term digital content - classify digital content according to type - text, image, audio, video - classify digital content according to content - informative content, advisory content, educational content, entertainment content 	Brain PT
Understand CMS basics	<ul style="list-style-type: none"> - understand the term CMS and get an idea of the work of a content manager - evaluate and work with existing CMS programs 	PT
Creation and transformation of digital content	<ul style="list-style-type: none"> - create digital content (e.g. data, text, multimedia, etc.)? - improve and transform existing content - apply useful applications for mobile devices 	GrW PW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - examples of different digital content and content management systems - interview with a content manager - projects including the creation of company-specific digital content - presentation of different CMS tools 	



Module 4	Basics for the development of digital competences in SMEs (cross sectors)	
Chapter 4.5	Safety principles and legal regulations	
<p>Brief description: Safety and legal guidelines are two important aspects that have to be taken into account when entering the digital playground. In this chapter we will treat basic guidelines for safe internet use as well as the minimization of security gaps and basic legal instructions concerning data security.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Localization and awareness of security risks	<ul style="list-style-type: none"> - be aware of existing risks in a digitalized workplace and possible consequences for the company 	PT EXE
General safety measures and prevention	<ul style="list-style-type: none"> - apply safety tips when handling emails and passwords - implement computer virus protection for safe web use - identify account phishing (e.g. Amazon website) as well as malicious emails, spot phishing mails and fraudulent links to fake websites or documents - identify and verify addressors of emails in Microsoft Outlook - understand social engineering - distinguish trusted websites and encrypted email transmission 	PT GrW EXE
Protection of data and computer systems	<ul style="list-style-type: none"> - exercise computer storage backup strategies - understand the function of firewalls 	PT GrW
Regulatory requirements of European data protection / copyright and data use / data privacy protection	<ul style="list-style-type: none"> - prevent and handle data loss - summarize the main content of the European General Data Protection Regulation and its application on data security - use mobile tools safely and ensure data protection 	PT GrW PrW
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - presentation of safety guidelines for hard- and software - information about efficient assurance of digital data safety - examples of safety risks and case studies - introduction of internal safety measures 	

4.5 Basics for the development of digital competences in touristic SMEs

Module 5	Basics for the development of digital competences in touristic SMEs	
Chapter 5.1	Website generation and search engine optimization	
<p>Brief description: Knowledge about content management systems (CMS) and search engine optimization (SEO) is important for the creation and constant improvement of sector-specific websites. As finding new customers is far more expensive than investing in satisfying existing clients, customer relation management systems (CRMS) will also be introduced as an effective tool to systematically improve customer relations.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
CMS use in the tourism sector	<ul style="list-style-type: none"> - understand website creation - employ existing CMS products 	PT
Factors of search engine optimization (SEO)	<ul style="list-style-type: none"> - understand the factors of search engine optimization (SEO) and sector-specific keywords - use Google Analytics and Google Ads for the tourism sector - understand the influence of semantic technologies on customer behavior 	PT
Effective use of CRM tools	<ul style="list-style-type: none"> - understand CRM systems and their impact on a company's customer relations - evaluate differences between CRM systems 	PT DISC
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - SEO guidelines for a successful web appearance - projects to optimize the company's website - projects to design a website with different CRM tools - introduction of Google Analytics and Google Ads 	



Module 5	Basics for the development of digital competences in touristic SMEs	
Chapter 5.2	Management of databases and data processing	
<p>Brief description: An increasing number of customer databases are developed in order to collect and systemize information about potential clients. Knowledge about the creation and management of these databases is the foundation for successful database marketing and the understanding of customer behavior. Existing DBMS software simplifies the use of databases for a successful customer relation management and database marketing.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Database use	<ul style="list-style-type: none"> - handle online booking systems and integrate different external booking systems into one database (Booking, Expedia, HRS, Hotels.com) - extract customer data for the creation of newsletters - analyze data for market surveillance and pricing 	PT CAS
Creation and evaluation of databases	<ul style="list-style-type: none"> - set up a customer database - evaluate different database management systems with their pros and cons 	PT EXE DISC
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - presentation of a list of leading booking systems - tips and checklists on how to work with databases - projects and exercises to reinforce and apply new information - exercises about filtering customer data and market surveillance 	



Module 5	Basics for the development of digital competences in touristic SMEs	
Chapter 5.3	Online reputation and successful digital marketing	
<p>Brief description: This chapter contains information about flexible marketing and pricing strategies as well as good online reputation management. These aspects determine the long-term success of a company in the digital world, with transience being one of the main characteristics.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Online grading systems	<ul style="list-style-type: none"> - increase online reputation through online grading systems (e.g. Trip Advisor, Hotelcheck, etc.) - manage (positive and negative) customer comments - name legal aspects that have an influence on online reputation 	BRAIN, PT
Marketing strategies	<ul style="list-style-type: none"> - plan customer-specific online campaigns - plan market-specific online campaigns - analyze user behavior - apply successful strategies of digital content marketing - understand the status quo and aims of content marketing controlling 	BRAIN, PT
Pricing strategies	<ul style="list-style-type: none"> - understand pricing strategies using different online booking providers (Booking, Expedia, etc.) - evaluate booking behavior and accompany the customer through the booking process 	PT CAS, PW
Digital marketing tools	<ul style="list-style-type: none"> - name existing digital marketing tools and their implementation in tourism specific marketing strategies <ul style="list-style-type: none"> - websites and blogs - emails and newsletters - social networks - microblogging - wikis - communities and forums - videos and podcasts - mobile apps 	BRAIN, PT
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - guidelines for successful online campaigns and digital marketing - presentation of marketing tools that are used in the tourism sector - creation of a web campaign for the company (contest) 	



Module 5	Basics for the development of digital competences in touristic SMEs	
Chapter 5.4	Influence and organizational impact of new technologies	
<p>Brief description: Innovations and new technologies result in both challenges and new opportunities for the tourism sector. This chapter gives an overview of the existing and upcoming possibilities to increase customer satisfaction by applying new technologies. At the same time, it points out the upcoming changes for workplace organization and the accompanying challenges for employees.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Overview of the development of the last 60 years	<ul style="list-style-type: none"> - understand changes coming along with new digital developments - name milestones of digital development 	PT BRAIN
Digitalization as a mean to increase customer convenience	<ul style="list-style-type: none"> - name and eventually apply existing digital devices that help rising customer satisfaction: <ul style="list-style-type: none"> - chatbots - interactive touchscreens - virtual reality tools - webcams/ live cams - self-service cashiers - hotel key apps - smart luggage - tracking - e-tickets - understand the interaction between the digital and analogue world 	PT GrW PrW
Digitalization of workplaces	<ul style="list-style-type: none"> - understand the influence of digitalization on different working areas: <ul style="list-style-type: none"> - reception - kitchen - service - facility management - tourism associations 	PT CAS
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	<ul style="list-style-type: none"> - demonstration of existing tools that help rising customer satisfaction in the tourism sector - discussion about the pros and cons of the ongoing digitalization - hands-on projects with different tools - demonstration of workplace changes 	

4.6 Basics for the development of digital competences in commercial SMEs

Module 6	Basics for the development of digital competences in commercial SMEs	
Chapter 6.1	Digital marketing	
<p>Brief description: Digital marketing is part of everyday business. Whether marketing is about getting new customers, staying in touch with existing customers or managing the customer base, all these areas are increasingly digital. This module focuses on the need of developing digital marketing and options of digital marketing channels. It familiarizes SMEs with the key elements of digital marketing and introduces useful tools for the development of companies' marketing activities.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Awareness of the need to develop digital marketing	<ul style="list-style-type: none"> - understand how digitalization has affected marketing - recognize how digitalization has affected customer behavior - become familiar with different marketing approaches <ul style="list-style-type: none"> - Marketing the image - Marketing with expertise - Marketing as service 	SELF PeL GrW CAS
Identify different tools used in digital marketing	<ul style="list-style-type: none"> - become familiar with different marketing tools <ul style="list-style-type: none"> - web pages - Google AdWords - Facebook - Instagram - LinkedIn - blogs 	SELF PeL GrW CAS
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	After getting familiar with the concept of digital marketing, reflect on how digitalization has affected marketing in your company. Look for changes in customer behavior due to digitalization. Identify how your company could better respond to changes in customer behavior and which digital marketing tools need to be better utilized in the process.	



Module 6	Basics for the development of digital competences in commercial SMEs	
Chapter 6.2	Customer understanding in the digital age	
<p>Brief description: Digitalization helps to create customer profiles as well as customer channels and to visualize the customer journey. Growing customer understanding leads SMEs to choose the right channels and tailor their message to serve their customers better.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Possibilities of digitalization in identifying different customer segments and channels	<ul style="list-style-type: none"> - understand the opportunities that digitalization offers in growing customer understanding - define different customer segments - choose the right channels 	SELF PeL GrW CAS
Awareness of customer journey and importance of connectivity in different phases	<ul style="list-style-type: none"> - visualize a customer journey - understand how to connect with customers in different phases of the journey 	SELF PeL GrW CAS
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	Digitalization has changed the way customers connect with companies. Draw a visual line of a customer journey based on the information you have. Identify the phases in which your company connects strongly with the customer. After that, identify the phases that need improvement of customer connection. Discuss about these findings with your team and look for ways to increase your connectivity throughout the customer journey.	



Module 6	Basics for the development of digital competences in commercial SMEs	
Chapter 6.3	Managing customer data	
<p>Brief description: Digitalization opens up new possibilities for managing and utilizing customer data. This module offers a brief introduction into customer data and some practices on data management. Deeper and more detailed customer information enables SMEs to better target their marketing efforts and to increase the return on their marketing investment.</p>		
Learning objectives	Content & Learning outcome The learner is able to...	Methods
Customer data management and security issues related to it	<ul style="list-style-type: none"> - understand what customer data is and how it can be used to benefit SMEs - utilize customer data analyses and enrichment - understand the importance of data protection 	SELF PeL GrW CAS
Tools for customer data management	<ul style="list-style-type: none"> - familiarize with some of the tools used in customer data management - use search engine optimization to increase visibility and sales 	SELF PeL GrW CAS
Learning opportunities at the workplace to facilitate competence development regarding the content of this chapter	After getting familiar with the concept of managing customer data, identify your company's main customer segments. Check how much customer information you have on these segments at the moment and if any important information is missing. Define how to better use customer data analyses and enrichment to collect this information. Also, discuss with your colleagues how you can improve customer data protection in your company.	



5. Training toolbox

The toolbox provides resources and tools to facilitate the Digital Competence Promoters' knowledge acquisition, as they need to inform themselves about certain digital topics and trainings before supporting colleagues. Furthermore, the toolbox will be the main instrument to fulfill their tasks from a practical point of view. The promoter will find different instruments and knowledge bits online in the form of videos, checklists, websites for reading practice, self-assessment tests, etc. The toolbox is organized as an Open Education Resource (OER) with a responsive design - open to all interested learners and usable with different digital devices.

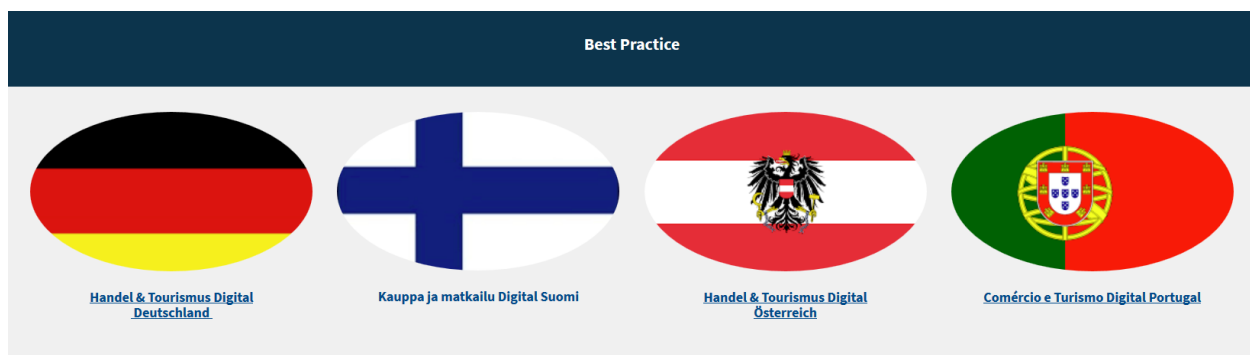
This toolbox contains 6 sections, starting with general aspects in the first row and continuing with specific information in the second. Each section follows the same structure: introduction, training material, further reading and a self-assessment quiz at the end. Users can choose any topic that they find interesting to start with. When entering the project website, the user gets a direct overview of the different topics connected to the development of digital competence in companies:



After clicking on one of the modules, the user will be guided by the following structure:

- Introduction to the module in form of texts and videos to address different learning needs (text-based, visual).
- Training resources divided into different sub-topics: There are external and internal materials listed and linked to information on content and usage. The resources can be used for self-study or by trainers to train Digital Competence Promoters. They consist of checklists, videos, reports, tools to try out, etc.
- Further reading links to acquire more background information when needed.
- Self-assessment quizzes for an individual review of the learning process.

In order to avoid limitation due to language barriers, the website provides training material and tools for Digital Competence Promoters in different national languages.



Everybody is welcome to suggest their own tools that turned out to be helpful for the daily work regarding the development of employees' digital competence. If you would like to do so, please contact us using the contact details on the website www.dc4work.eu.



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