

Digitalization and Human Capital

Curriculum and teaching materials, preliminary version

Satakunta University of Applied Sciences (SAMK), project partner number 2

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Introduction

During the era of computers, digitalization has changed the world piece by piece. Doing business is nowadays mostly communication with and via digital systems. The world of HR-management is changing too. Digitalized payment systems and registers of employers are not enough. As the world around us is changing rapidly due to globalization, budding trade wars, waves of immigrants and refugees and other contemporary phenomena, the old means to foresee, plan, manage and control the business are not valid, or at least they are not enough anymore. New tools are required. New tools have been and will be developed.

Terms like Big Data, Artificial Intelligence, machine learning and data analytics have already become known in many sectors of business management, like marketing, engineering and designing or optimizing e.g. transport routes. HR-departments have been more conservative when adopting the new technology, but within the past decade the situation has changed. Artificial Intelligence is used to select personnel in recruiting process, Big Data is utilized to forecast the requirements to be set for the personnel recruited within the next decade and the training needs of existing personnel are evaluated with data analytics, some examples to be given. However, the complete benefits of new possibilities can be gained only if the entrepreneurs and managers of companies have an overall view of technology, methods and opportunities they offer.

The aim of this course is to enable target groups to have such an overall view that they understand both benefits and risks of digitalization in HR, including the ethical aspects.

Course

This course has been designed to fulfill the needs described above. The training, which contains both theoretical lectures, group works and practical training will be set to EQF- levels 4 or 5.

Target groups

The target groups of this training are

- founders,
- owners,
- managers and
- employees

of SME companies. From the group of personnel, in particular those who deal with questions of personnel management are an important target group..

Objectives

The learning objectives of this course are set to serve SMEs in digitalization as well as possible. The concrete learning goal is that after attending the course the trainee has at least a sense of what digitalization can bring to his / her own business.

The learning objectives are

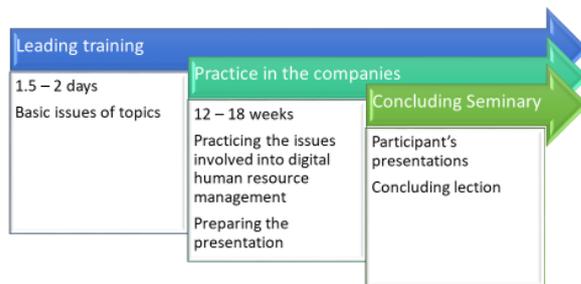
- Trainee understands the importance of digitalization
- Trainee knows the contemporary basic concepts of digitalization – the relevance of topics in this area should be ensured before each training session / course.
- Trainee knows at least three tools that a SME can utilize when digitalizing its HR-functions.
- Trainee has applied at least one of these tools during his / her practice period.

Schedule

This course is divided into three parts. The training begins with a 1.5 – 2 days theoretical part, during which the basic issues of each topic will be clarified by presentations and group work. This part will be followed

by 12 – 18 weeks practice period in the company, during which the participant gets acquainted with the topics of the course in point of view of this company. During the practice period the participant will also prepare a presentation concerning the findings and ideas he or she gained during that period in the company. After the practice period is completed, a seminary of 1.5 – 2 days will be hold. In this seminary the participants will present their findings, discuss their experiences and ideas, and finally, everything will be concluded with a lecture concerning the relationship between business management and HR-management.

Schedule of the course



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Part I: First Workshop

Content of course

1,5 - 2 days training

Goals and tasks of the first workshop are to

- enable knowledge transfer about the KAIN-method, embedded in the contents of HR-policy and workplace innovation,
- create a common basis of knowledge among the training participants concerning the management of change processes and employee participation,
- encourage the exchange of experience about successful projects for work design and exploration of beneficial and hindering influencing factors and to
- form a preliminary orientation on topics for a change process in the own company.

During this 1.5 to 2-days workshop the participants get to know (usually science-based) models and instruments from project-related research for structuring and solving problems and learn to apply them (mentally). This is intended to create a common conceptual basis for the further procedure in the training.

The models and instruments presented as examples and design recommendations for practical use, ideally form a common framework in which, in particular, the existing experiences of the participants are to be integrated in order to pursue the training objectives. The experience of the participants should serve to supplement or modify the proposals for structuring and solving problems given by the research.

Thus, at an early stage of the training, a necessary adaptation of the proposed models and instruments to the individual needs and characteristics of the participants on site, usually with different frameworks and conditions, should take place.

Before the first workshop, a trainer / consultant designing the course should select and modify the models, instruments and other material applicable to just this country, area, branch and companies in question. The material presented in this curriculum consists of common examples and works as models and stimulus for trainers.

The role of the trainers

It is a task of the trainers / consultants to take into account the individual needs and particularities of the participants on site in a face-to-face training. This requires a high degree of knowledge and experience with

the use of interactive and participant-centered didactic methods on the part of the trainers. A further focus of the first part of the training is to introduce the participants with the planning, implementation and critical evaluation of their own project work they are involved in the second part of the training. Thus, another central goal of this part of the training is to give the participants important impulses for the implementation of the presented models and instruments in their own project. The application and implementation of the presented models and instruments by the participants "at home" is, so to speak, the focus of the second part of the training concept.

First day

Note: Two shorter pauses (with coffee) and one longer pause (lunch) will be held during the day.

Note 2: The material presented below is examples and stimulus, which should be applied and modified according to the country, area, background, level and needs of trainees, and also according to knowledge areas of trainer. The times are suggestions and may vary depending to the weighting of topics (see above).

- 1) Welcome, registration and material 0,5h
- 2) Motivation - why these topics are important 2 h

Introduction to topics: Video from An Introduction to DigitaliseSME	
SMEs need to see the digitalization as an opportunity (video inside the article)	
The strategy of the European Union: Digital economy and society	
The Policy of European Union: Digital transformation	
Subareas of the policy	
Organisation: European digital SME-alliance	
Changing environment The business environment is changing rapidly and the speed is just increasing	 DIGITALEUROPE---O ur-Call-to-Action-for-/
Changing workforce People are changing the workplace. Lifetime in the same work does not attract any more. The skills required are changing too – and fast.	 DI_New-division-of-la bor.pdf  changing-nature-of-w ork-in-the-digital-era.i
Changing work – changing world The content of work is changing rapidly and the speed is just increasing due to technical development. More digitalization capabilities are needed. The work is changing more and more digitized and digitalized. Mobile applications enable the work done to be booked and invoiced immediately: Adminet , Sympa HR , Tamigo , 	 ClimateKICWhitepape rFinalDigital_compres:  Ricerca_Digital economy and workpla  The_digital_workplace .pdf  gerten_e26680.pdf
SME:s need assistance	 smeunited-digital-br ochure.pdf

Changing business models: [The impact of digitalization on business models](#)

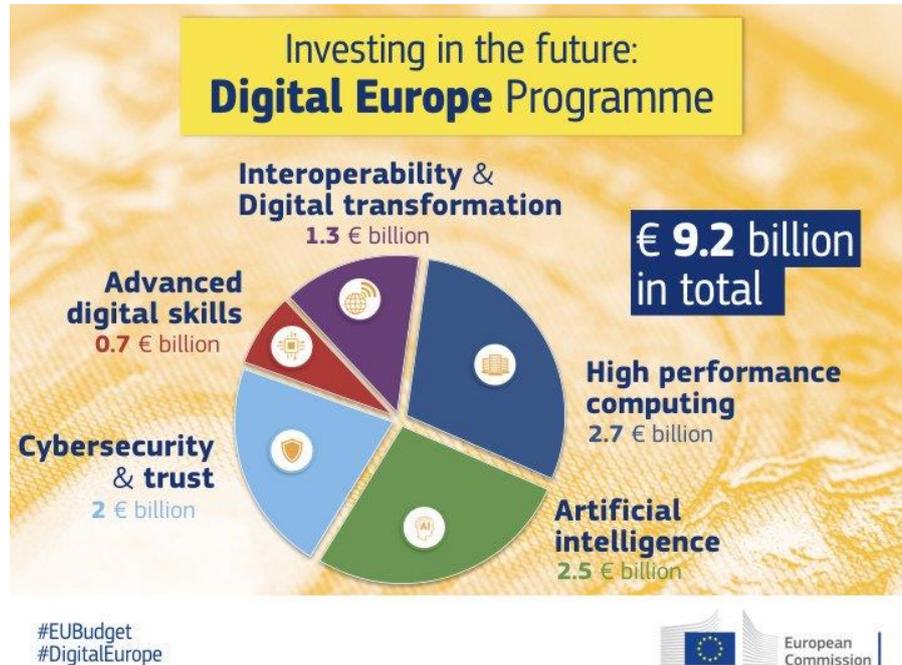


sustainability-11-0220
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Into_the_Clouds_web_
1011.pdf

Big money in question



Source: https://ec.europa.eu/isa2/news/european-commission-has-announced-investment-%E2%82%AC92-billion-align-next-long-term-eubudget-2021_en

Case stories

[Ireland](#) [Austria](#) [Greek](#) [Building and Construction](#)

- 3) Workshops (2 hours work, 2 hours reporting and discussion): What data is critical to run your organization / business efficiently; is the data consistent and reliable; is it easily found and used; is the data usable; how is it handled at the moment; How could a digitization / digitalization help you.

End of first day (length 6-7 hours + pauses)

Second day

Note: Two shorter pauses (with coffee) and one longer pause (lunch) will be held during the day.

- 4) Basic concepts that a student should know before practice (2 hours)

<p>Digitalization VS Digitization There are many definitions trying to explain the difference between these two concepts, for example: "Digitalization is the integration of digital technologies into everyday life by the digitization of everything that can be digitized" (Mohamed EL-Shimy)</p>	 - Quora.pdf  Digitization, Digitalization, And Diç  Digitization, digitalization and digi
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<p>Big Data Big Data refers to a collection of both structured and unstructured data, created and used in business on daily basis. It is not the amount of data that makes it big, but what organizations do – or could do – with the data e.g. in HR purposes. (European big data value association)</p>	 SMEs-Brochure-2017.pdf  Are SMEs ready for big data_.pdf  08346368.pdf
<p>(Data) Analytics Data analytics refers to methods to analyze raw data to be able to make conclusions about that information. Automated analyzing processes and algorithms that process the raw data usable for decision making are important part of big data technology.</p>	 1de6c6a7-en.pdf  1-s2.0-S1877042816315452-main.pdf
<p>AI (Artificial Intelligence) Artificial intelligence aims to solve cognitive problems commonly associated with human intelligence. AI enables machines to learn like humans and perform tasks such as learning, problem-solving, reasoning, and language processing. In HR AI is used to automatize recruiting, competence assessment, risk evaluation etc. But Artificial Intelligence causes also ethical questions.</p>	 AI- The Preferred Direction of Modern S  AI for SMEs – MIT Technology Review In  Council Post_ Four Ways Artificial Intellige  Is Artificial Intelligence for Small I  Infographic---Ethics-in-AI.pdf  AI-in-Ethics_Web.pdf

5) Why it is important (1 hour)

We need better tools to be able to manage the workforce with means like planning (predictive), optimization (ongoing) or to be able to see the impacts of future development on e.g. finance, efficiency and profitability. We also need to have better processes to manage the competence and skills of our employees. We should be able to have an access to all the knowledge in our company, including the contemporary tacit knowledge. Furthermore, we should be able to forecast our future needs, not only in the number of employees but also and before all, in skills and knowledge the personnel should have in the future. However, there are both enablers and barriers impacting digitalizing HR-management services. We should be able to recognize both enablers (to be able to utilize them) and barriers (to be able to override them). Tools should be based on the business strategy and support it. In the figure one example of strategic vision concerning the HR functions of a company is presented.



Figure 1 Strategic vision of HR-functions (Source: <https://www.slideshare.net/MatthiasVallaey/big-data-in-human-resources>, Sl. 10)

6) Tools available (2 hour)

There are several tools available, from Word and Excel templates to HR-applications and ERP-packets. Many of these are either totally free or free for SMEs if the number of employees is not exceeding certain limits. The examples of these tools are presented below.

Templates – free: [HR-Forms](#) for Word

[Templates](#) for Excel; More [templates](#)

HRM – Software – Freeware [25 evaluated solutions](#) [More evaluations](#)

Examples of free applications:

[SimpleHRM](#) [OrangeHRM](#) [WayPointHR](#) [IceHRM](#) [Waypoint HRM](#) [Sentrifugo](#)

[Free knowledge management systems](#)

[Free office-suite](#) Includes word processing, spreadsheet, graphic, database.

[Free project management](#), Compatible with office suite above.

Note risks with free applications: Localization might be missing or poor, installing packages may contain spyware, viruses or other type of malware, and particularly with web / cloud-based applications the GDPR-compatibility may be poor or missing.

It is also worth remembering that no software does anything that you cannot do without it.

7) Group work (1-hour workshop, ½ hour reporting and discussing): What kind of common barriers and enablers in an organization might be found and identified?

8) Assignment and project setting:

Setting and explaining the assignment, 0,5 hour: During the practice period, observe e.g. what kind

of barriers and enablers do you find in your company, what kind of / which tools and applications would benefit the HR-functions of the company best, how would you transfer the tools and technology into the organization, what kind of benefits could they provide, or what kind of risks might they include. Write a brief report and prepare a presentation to be given in the concluding seminary [*Note to teachers: max length of a presentation depending to total number of presentations all should be presented within the time reserved for them. The time for project work presentations and discussion should not be forgotten*].

Setting and agreeing the project work and how to report it in trilateral composition (trainee, trainer/lecturer, representative of an enterprise, if trainee is not the entrepreneur him/herself) either during the first seminary or in the beginning of the learning at the project work. In this phase, the needs of the enterprise, competencies of trainee and goals of the training should be taken into account. This is the only way to guarantee the commitment and motivation of all three parties in each project. It must also be borne in mind, that the project work and / or its results are not necessary public, but may contain confidential business information. Thus, the form and content of publication, e.g. as a part of presentation in concluding seminary, must be agreed and defined individually.

End of day 2. Length of the day 6-7 hours + pauses.

Part II: Learning at the Work Place and Project Work

12 - 18 weeks self-study and practice in company

During the company specific practice students compile the assessments given during the training phase (#8) in the point of view of each company (general overview of HR, answering to the questions presented above describing the contemporary situation, what should be done, how, are there barriers and / or enablers, how to evaluate and how to develop the human resource management). The results will be briefly presented in the concluding seminary, separate or together with the project work presentation.

Goals and tasks of the self-study-phase are

1. Accompaniment and support of change processes in enterprises, from the formulation of objectives, description of measures, conception of implementation to impact analysis by training and process-oriented, if necessary also technical consulting,
2. Application and transfer of knowledge into the individual practice of the participants on site

In this part, the participants have the task of applying the knowledge acquired in the first part and the knowledge of how to shape their own practice in the sense of the training idea in their companies / organizations. For sustainable learning, it is necessary that they plan, implement, evaluate, critically reflect and document their own project or activities to improve a situation on site under their individual framework conditions in the "here and now".

This phase with the duration of approx. 12 – 18-weeks is accompanied and supported by professional advice and support given by the trainers / consultants. In principle, the participants should apply and implement the knowledge they have acquired in Part 1 themselves. As a rule, however, advice and support are often required in order to apply the process of adapting the knowledge acquired in Part 1 of the training appropriately under the real conditions on site and to lead one's own project to success.

The role of the trainers/consultants

The support given by the trainers can vary from a rather simple general consultation in the sense of passing on relevant information to an intensive accompaniment in the sense of coaching. In individual cases, it is usually necessary to find out, what kind of support it is needed to enable the individual participant to pursue his or her individual project goals.

In this phase, it is quite possible and even usual, that, when applying the models and instruments presented in the first phase in practice, the individual project proceeds differently than initially thought and

planned by the participant. Even in such situations, the trainers of the project team can provide valuable support in pursuing the "actual" project goals.

This second part of the training enables in particular the very welcome didactic aspect of working on concrete improvements in one's own company / at one's own workplace, which is associated with a high motivation to learn. In this learning process, the company management and other employees are usually intensively involved in what is actually done at the workplace, thus achieving joint learning and strong multiplication effects in the training.

Further advantages, i.e. what has been learnt, is directly implemented in everyday business life, or the innovations associated with project work are in the interest of company's management, quickly become visible and motivate managers to promote further training for the workforce and to use it as a strategic instrument of company management. The advantages also respond to the particular needs of small and medium-sized enterprises, which are constantly suffering from a lack of time as the biggest obstacle to training. In common, the KAIN Training Method eliminates absenteeism nearly totally.

Part III: Conclusion Workshop

1,5 – 2 days seminary

Goals and tasks of the conclusion workshop are to

- Reflect (evaluate) on the successes in the dimensions of individual, operational and structural changes and change processes,
- Identify supportive and obstructive conditions of change processes and
- derive "lessons learned" for further change processes

In the third part of the training, the participants will present and discuss the experiences and the insights gained (from assignment #8), as well as their individual projects. Both the participants and the trainers have as their particular task to review the projects and to reflect on whether, or respectively what, contribution they make to the sustainable pursuit of the overarching training idea to strengthen the capacity and ability for HR-policy and workplace innovation. The exchange between the participants can provide them with very valuable impulses on how to make their own project even more successful. In this context, an important goal can also be to show which major obstacles are responsible for "not-yet-successes" in order to work on this in the future.

The role of the trainers/consultants is to

- Enable constructive exchange between the participants,
- Focus on the common basis for the pursuit of (general) training objectives, and
- Moderate an instructional discussion on the identification of supportive and obstructive conditions of change processes and present contributions for a possible reduction of resistance in the tracking of individual projects.

Schedule of the workshop

Note: Two shorter pauses (with coffee) and one longer pause (lunch) will be held during each day

First day

- 1) Welcome, registration and material, 0,5 hour
- 2) Presentations of students, discussion and the feedback of the trainers – continues, if needed, in the second day

Second day

- 3) Management and HR – Concluding lecture including
 - Concept of Human capital
 - How the digitalization can help daily work

- How the digitalization can help HR management
- How the digitalization can help management
- How the digitalization can help strategy planning
- How the trainees can / should continue with their own project / company / business
- **Length 2-4 hours**, depending to the time allocated for student's presentations.

4) End of the course, diplomas, etc.

Material (Examples)

<https://www.slideshare.net/MatthiasVallaey/big-data-in-human-resources>

<https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/central-europe/ce-global-human-capital-trends.pdf>

https://ec.europa.eu/growth/smes_en



10.THE FUTURE OF
EMPLOYMENT - CHAI



Accenture-Digital-HR
-technology-comes-o



ProQuest Ebook
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big data
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<https://www.tuni.fi/en/study-with-us/computational-big-data-analytics>

<https://www.hrtechnologist.com/articles/digital-transformation/the-beginners-guide-to-ai-in-hr/>

<https://www.forbes.com/sites/jeannemeister/2019/01/08/ten-hr-trends-in-the-age-of-artificial-intelligence/#42c1e7123219>

<https://www.slideshare.net/TomHaak/artificial-intelligence-threat-or-opportunity-for-hr>

<https://www.aalto.fi/en/aalto-leaders-insight/2018/excellent-discussions-on-digitalization-and-the-ethics-of-ai>



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alia_2018.pdf



uusi-b18001_nordic-
hr-survey_final_finlan



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Key issues digi non
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