

WORK BASED 

MANAGEMENT TRAINING KIT

FOR THE TRANSITION TO INDUSTRY 4.0

Transversal Competence Analysis and Catalogue

Short Report on Summary of Interviews -Field Study



2019-HU01- KA202-061224

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O1.A2. SUMMARY OF THE FIELD STUDY

ABSTRACT

Introduction

The **Field Study through focus group interviews**¹ was carried out within the ERASMUS+ project No 2019-HU01- KA202061224 “**TransIT - Work-based management training kit for the transition to Industry 4.0**” as part of IO1-2: Field Study through focus group interviews and opinion poll/online questionnaires.

In the present document you could find the summary abstract of the most important findings and outcomes of the focus group and individual interviews taken by all the project partners from 6 countries: Bulgaria (17 p.), Greece (15 p.), Hungary (24 p.), Ireland (17 p.), Portugal (16 p.) and Slovenia (6 p.). The total person reached is 95.

Taking into account the complexity of **COVID-19** status all over Europe in this project period, the need for social distance and the introduced restrictive measures in the partnership’s countries, all the interviews were conducted online, with more than one company’s representative, where possible.

We placed emphasis on involving target group professionals (CEOs, CFOs, middle managers, i4.0 project managers/project coordinators, HR specialists/trainers, consultants, IT specialists and engineers involved in i4.0.

The survey seeks only interviewees’ personal opinion. Our goal was to reach at least 15 representatives per country, or 90 in total. As a final result, within this project stage we managed to reach in total 95

¹ The Field study template is available in Annex 1 to the complete version of the Field Study Summary

professionals², separated in 4 groups by the level of their current position in the company, as follows: Top level managers (32), Middle level managers (31), HR professionals (4) and Experts (28).

The 50 companies our focus group representatives are working in, represent various sectors, but all of them have been facing changes and challenges due to the digital revolution. We were very selective in this aspect since we believe it is fundamental to interview people with relevant practical insight into the topic.

Some companies' representatives requested anonymity both for to the companies and to themselves, therefore we won't share all the companies' names. This was something that some participants requested from us in order to speak openly about their internal issues. The list of all the companies, with industry/field of activity, short description and organisation size is available in Annex 3 to the complete version of the Field Study Summary.

As partners' aim was to show a greater scope of the survey in relation to the location of the companies, thus obtaining a wider range of opinions, the geographical coverage of the companies consists of 29 locations from 6 countries presented in the survey.

Concerning the distribution of companies by their size and country of operation, we reached 50 companies, 13 of them – Micro; 9 – Small; 11 – Medium-sized; and 17 -Large companies. Their distribution by country is: Bulgaria – 6; Greece – 12; Hungary – 11; Ireland – 8; Portugal – 8; and Slovenia – 5.

According to the industry the 50 companies are working in, in total 14 industries were covered, and the distribution is as follows: Agriculture (1); Associations / NGOs (4); Computer Industry (10); Construction (1); Education (5); Electronics (1); Food Industry (3); Hospitality Industry (1); Manufacturing (8); Mining Industry (1); Pharmaceutical Industry (2); R & D (2); Service sector (9); and Telecommunication (2).

For further analysis, all the national interviews are available in the project's documentation.

Feedback on Question 1

Q1: "Please take a few minutes to read and understand the competence map. It consists of global challenges typical to i4.0, as well as skills and competences which play key role in overcoming the challenges. - Does the

² The List of interviewees by occupation is available in Annex 2 to the complete version of the Field Study Summary

challenges and the competences look familiar/important to you, based on your work experiences? – Would you add or discard something?”

This question refers to the previously elaborated project outcome: **O1.A1 Desk research**, available on the project [site](#). All the challenges are listed on p. 20-25, and the competences and skills needed for Industry 4.0 transition are grouped in three sections, available on p. p. 27-28 and 45-53 of the document.

Our focus group representatives had to give their personal feedback on the listed challenges and sets of skills and competences. The answers to the first question are summarised as follows:

Feedback on challenges

All participants in the interviews agreed that the transition to Industry 4.0 for a company implies many challenges. The most important one, as identified by the participants, is the cost of transition, which includes costs for new technologies and also cost for educating the human resources of a company, in order to be able to apply the new technologies. Although technology is nowadays part of our lives, not all people are familiar on how to utilize it for their work. That is why, extensive education and information programmes should be deployed before a company decides to move on with to industry 4.0. **Investments in HR structures and implementation of education programmes** is the key, which will bring the companies to the future.

Keeping pace with the never-ending evolution of technology has brought the need for change in the companies' structures and the way they operate. But along with technology, **people need to adapt**. They need to learn constantly new things, learn to embrace technology and **collaborate** more with others. To handle all this rapid change, companies need to become more **flexible** and **adapt faster** to the new realities, since there is always something new that we need to learn from the beginning.

Another challenge is the need for **innovation** and **analysis of big data**. Cloud services and procedures need to be implemented and new technologies are needed to process these data. Digitalisation, artificial intelligence and cloud computing imply the use of centralised monitoring systems, which generate new information. *New knowledge is required in order to process them.* But older employees are more resistant to change and are reluctant to learn about technology. On the other hand, younger employees can handle technology and can learn more quickly, but at the same time they are reluctant to collaborate and work in teams. What is needed in this situation is **better communication**.

Companies need to assist their employees not only to obtain technical skills but also soft skills, which will help them better communicate with their team members.

Lastly, an important challenge identified by the interviewees concerns the labour force. Digitalization has brought a new reality for workers, making a large number of them redundant. The biggest challenge regarding the transition to industry 4.0 is to find a solution to reduce the percentage of workers who are being laid off. Another challenge connected to industry 4.0 is that technical expertise of today is deficient and new specialisations are required. *People over the age of 45 are considered a problem and are also called “blockers” of technology.*

The general feedback is the challenges are realistic and well known in all the countries, where the most influencing are:

- **Ageing of the population** (Bulgaria and Portugal) provokes generation conflicts: The older generations want to keep active, work, they don't want to be passive, but they have a very difficult situation on the job market. Their knowledge and experience shouldn't be left to get lost; it is still a workforce with potential. The management has to bridge over such conflicts as well.
- It should also be noted that due to the ageing of the population, there is a *deterioration in the average indicator of the desire to learn throughout life.*

All countries' representatives agreed that digitalisation is affecting businesses on a high level.

Examples of the main challenges, presented by the interviewees:

- To provide employee support
- Lack of social competences - intercultural skills, networking skills
- Continuous re-training of staffs
- Finding a skilled workforce
- Managing diverse teams with a skill gap
- Lack of digital expertise of staffs
- Lack of interpersonal skills of staffs
- Managing conflicts

- Building trust in a virtual environment
- Until the management understands the essence of innovation, it will be useless, as they cannot properly motivate the people and engineers who develop it.
- Delegation of decision-making responsibilities is not typical of industry.
- A lot depends on the organizational structure in terms of innovation. The organizational structure mostly does not support innovation as they operate strongly in a hierarchy system.
- Many people believe that having unique knowledge makes their work and role in the life of the company valuable. This can only be sustained for a while as they put too much burden on their own necks of workers.
- The transfer of knowledge is a matter of will rather than lack of ability. In the case of very small companies, the founders and managers are sorry to pass this on, they are distrustful of the employees in the field.
- Critical and innovative thinking is important because in the case of Hungarian companies (smaller family businesses) there is no transition between the generations: they don't really introduce innovation, they do their processes the way they have so far (*"so far has it been good, why change?"*) and fears that businesses that are doing well now will not be able to remain marketable as a result.
- Resistance to change is an existing difficulty, mostly rooted in generations.
- In house agility as a challenge
- Improved/maintained corporate culture is a challenge
- Innovation methodologies must be developed
- **Adaptation, Independence, Perseverance, Sustainability, Rivalry and Coping strategies** are missing challenges
- All the processes and tasks need to be organised and documented. Changing regulations present us with tasks and require our efforts continuously.
- Eagerness to please, and lack of independence
- The "job hopper" phenomenon of young workers
- Fear of change, and performance related wages
- How to nurture new leaders, and embracing diversity

New things learned from the interviewees:

- Background diversity, education background, close acquaintance with members, task variety and task identity all affect **virtual project performance**.

*Having appropriate **communication technology** to connect and support staffs in ways that develop trust is a must.*

- The right balance of **interpersonal** and **technical skills** is necessary during team selection to make the team productive.
 - **Understanding, responsibility, complimenting, and rapport building** is needed to improve team morale.
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The conflicts between opposing views can be a better route to adaptation and renewal than order and equilibrium.

- **Lack of recognition and rewards** towards employees and the **lack of communication** about this can be a problem.
- To **manage emotional reactions** appropriately, enabling cooperation and teamwork is challenging, mainly when it comes to inter-departmental, inter-age groups, and international differences.
- The “I’m the boss, do what I say” line-up does not always work anymore.
- A dedicated employee can work more efficiently because he or she feels things are his or her own. It is important to adapt our thinking to the situation.
- It is important to work with diverse people, the ideas of experienced, older colleagues and innovative, younger colleagues can be good things if they are all open to each other in working together.
- *Don’t agree that mentoring improves personal and work efficiency* — such as coaching and leadership training — the more you mentor someone, the more they lose their self-thinking and apply the formulas they learn, the more problem-solving they lose.
- **Atypical employment** is one of the most necessary things.
- Accelerated decision-making and the involvement of artificial intelligence are not yet part of everyday life for SMEs, although it would be good. They do not yet trust these technologies; human validation is always required.
- **Emotional intelligence** is extremely important to achieve the right quality of **communication**. This is closely related to **motivation**, as everyone needs to be motivated differently to work effectively.

*It is not the well-trained colleagues that need to be further developed, but the weakest link needs to be developed to the minimum level of knowledge with which they can already be involved in the processes, they can interpret them. To do this, it is important to determine what is the **minimum level of knowledge** with which to enter Industry 4.0.*

- **Understanding processes, dare to question things, and growth-oriented mindset** (growth represents an increasing demand for regulating flexibility) are valued, as well as **Agility, Flexibility and Effective communication**. Excessive flexibility may lead to disorganisation though. *Care must be taken to maintain the right balance.*
 - Tolerance, Delegation of tasks/**responsibilities, Trust building and Trust culture** are very important.
 - **Intergenerational sensitisation, learning and development needs** were emphasised as key competences.
 - **Authorisation, Commitment and Coping strategies** to be foreseen in the Managerial skills.
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Digital literacy, organisational culture, and leadership issues are posing great challenges, in general for all of the interview participants.

Feedback on skills and competences

The list is well organised and structured, and presents differentiated as internal characteristics and content set of competences, and in their entirety exhausts the scope in the present, as well as in the near future – that is the general feedback of all the interviewees. The most important remarks and observations are summarised as follows:

- All of them are known by the organizations, and to a large extent by their clients. The interviewees are quite intuitively aware of this categorisation, and given the nature of their work, they have been offered as part of the trainings they organise (internal or to their clients).
- Unconsciously or consciously, the above listed competences are also sought after by job seekers, searching for job in their organisations. Particularly important for them are individual/personal skills (critical thinking, innovation, flexibility, compatibility), then technical, especially ICT related.
- As a conclusion, the listed skills and competences are sufficiently comprehensive and exhaustive, and generally framed to allow the survival of any legal entity.

About the set on page 45 – this is a universal framework from which, depending on the business, different groups of competences can be derived (to be scaled to different businesses and activities).

Comments and remarks on the List of competences

- This competences set is more appropriate for the **team/company leader** and a **dream goal** for the experts.
- The interviewed teams from the micro companies confirmed the importance of the three sets of competences and skills, but having in mind the specificity of their activities, most important are the **technical** and **social competences**.
- According to the interviewees, all the key management skills are very important and necessary for the daily work-life, besides the *lean management*, as being based on the Toyota production cycle, it is oriented mainly towards the production industry and for the services sector it is not applicable.
- For the managerial competences, according to the studies and the forecasts, the i4.0 professionals will be individuals with a **variety of skills** that will dynamically upgrade to catch up the staff troubles created by the technology's fast development. In this group of competences, the interviewees agreed on that **knowledge of various languages** is not very relevant in the IT sector – there is already an established tradition to communicate in English only – this is the new Esperanto for them.
- Concerning the **employee skills** – they are also OK, except the *ability to share the space and work with robots*, that is also specific for the manufacturing industries.
- According to the team from the construction sector, looking at all the competences related to innovation and creativity, their business is classified as Art, but on the other hand designers must take into account the capabilities of machines as the equipment has no understanding of beauty, but needs proper programming. So, for exactly this business the match between **Creativity** and **IT skills** is very appreciated.
- The interviewees also would divide the three groups the way they are presented, but they believe that depending on the age, the competences are presenting or missing in the workers. For instance, the **technical skills, needed for I4.0, are missing in the older populations**. When it comes to managerial skills, for the needed transition to I4.0, the most important is **the vision** in the general management. The problem is that the managers without such vision are still a majority and they stop/interrupt their teams' logical acceptance of the technological or industrial changes. It is evident that such lack of vision will lead to losses for those companies in a natural market driven way. The problem is with the public budget funded organisations, where this problem leads to restrictions and slower (if any) transition for the next generations to come.

- The interviewed team stressed on the importance of specific **competence combination** such as **Creativity** and **Problem solving** – very powerful combination in stressful situations.

The challenges and competences look familiar and important to the interviewees. Both sets are pertinent and wouldn't add/discard anything. A revised competence map is suggested in Annex 4 to the complete version of the Field Study Summary. The interviewees' own challenges, comments and suggestions are summarised below:

- Management of the changing mind-set that academic education is not a 100% requirement in this changing environment and we need more focus on **transversal skill**;
- New plans required for funding supports to set up home office in current environment;
- Lack of training for the educators on new transversal skills;
- Change in large organisation is very difficult and slow meaning we are behind the curve all the time. The inability to hire key promoters such as CEO / Business Development / Business operations manager / COO as difficulty to locate and secure then as all in hired by the multinational corporation.

A more practical approach to teaching and mentoring either student or companies is required with more problem solving, change management, new learning methodologies being the norm.

- **Innovation challenges:** **Collaborating internally and externally, with users** (both existing and potential) throughout the supply line, including competitors and industry experts, as well as **Continuous Evaluation/Re-Defining of Business Model** and **Alignment with Organisational Strategy**;
- **Technology challenges:** **Demonstrated cost/performance benefit to users** (both existing and potential). They would propose to move **Resistance to change & Workforce strategy...** to **Motivational Management** challenges as they would consider both to be **Change Management**. They would also add **Big Data** as a key component of industry 4.0, the challenge being the management and interpretation of data.
- Skills & Competences/Innovation: **Adaptive-Agile Organisation** is suggested
- Skills & Competences/Technology: suggestion to add in **Data Science Competency**
- Some would not discard any of the listed options. However, they would consider adding **Realistic goal setting / reward** in the motivational management section. Target setting gives you something to work towards as long as the targets are achievable and realistic.

- **Cultural challenges** have to be emphasised more, as in some interviewees' experience it has a huge impact on applied methods, mentality of learning and attitude to change in general.
- **Motivational management –lack of vision and culture** is a major challenge in motivational management – if these are right, a sense of purpose follows, which motivates.
- Another challenge might be the pressure that the business owner-manager is under, particularly in micro sized companies. As they are the everything and wear many hats (owner, manager, HR, sales, marketing, deliveries, food safety, health & safety, quality etc.) the business hours are very long and from their experience many areas/requirements are not met. A start is often made on things but completion of tasks can be very difficult.

Time is an issue with regard to growth and development of companies. Some businesses divide the year up into production months and sales months e.g. a micro sized cheese business produce Spring & Summer and actively sells and develops the business in the Autumn and Winter.

- Red tape (bureaucracy) in the form of legislation is another issue for businesses, particularly food businesses. There are so many regulations to adhere to, and management systems must be in place to demonstrate compliance. Time and resources needed are not always available.

*The two challenges that would be most important to some are **Increasing need for innovation and Continuous learning, internal training culture**, as the need for innovation combined with continuous learning is an essential part of the daily work.*

The competence matrix seemed interesting and good for the interviewees and was approved by them. Here are they remarks:

- Management challenge - **Need for targeted services / specification**: – the available solutions/tools should be listed and well described, what do they know and for what can be used.
- Desired management competence (**suggested**) – *ability to select people who are open for innovation.*

- Technology related challenge – **resistance to change / specification** – Lower level engineers and workers get frustrated since automatization can replace the work that they are doing now. Repetitive things most of all. Maybe newcomer managers don't oversee soon what are these processes, but the experienced professionals know it well. Managers often approach automatization only from the „saving and cost reduction” point of view, but they shouldn't forget, without people there is no innovation. Jobs could/should be redefined, new competences could be gained.

„Automatization is your slave, it works for you free of charge, thus you win more time. It depends only on the management if this time will be well invested. E.g. in learning, giving more holidays – let people charge.”

- **Legal framework, transparency.** In the case of the bank sector there are different regulations and legal directives in each country. E.g. in Portugal the Primavera software is used for bookkeeping in this area, which already „knows” the Portuguese reality, specifications and rules. In case a bank or a financial institution buys another, for example foreign company, which uses a different book keeping than the whole system will have to be customized and adapt it to the local conditions. E.g. how many numbers compose a tax number in one country and in the other. E.g. a German company buys up a Portuguese, a Slovenian or a Hungarian subsidiary. SAP is quite good in this sense already, but with many other, less evolutionary software the owners will have a customization issue. It will be a question of time (urgency) and money. A company in expansion/scaling has to count with this complication and expense.
- **The need for innovation** is constant: It is tangible and realistic, they have to ensure better and safer access to water to the citizens – cleaning the drain system, bacteria control, prevent contamination, fix occurring problems asap - no one should remain without water for long, supporting information system, etc. Positive innovation goals.
- **Creativity is not enough**; it has to go together with understanding the big picture and the key points
- **Working under pressure** - instead of this stress management /stress resistance would be better – good time management is essential too
- **Accepting job rotation** is an important competence
- **Research skills** - Language skills and knowing the professional vocabulary is essential too
- **Advanced IT user skills**, managing tools (e.g. databases, presentations, document editing, picture editing)

- **Understanding processes** - it is important but not enough, analytic thinking is also important, to understand things in depth. We have to be able to take processes to pieces, analyse them then mount them again.
- **High work and innovation ethics** have also key importance.
- **Mentoring** is very important.
- **Additional competence needed:** quickly and realistically overviewing things - even complex situations - and being able to identify and name the core problem.
- **Competence correction:** change **and** transformation management ability
- **Innovation urge- without innovation ethics it is harmful.**
- **Resilience - stress management** - this should be upgraded to “conscious way of living”? which embraces recognising and following healthy eating habits, appropriate training of the body (adapted to the age), regular maintenance of the psychological wellbeing (e.g. relaxation, meditation), and emotional intelligence. Managers have to cope with such a massive amount of stress that it needs a completely healthy and balanced person to be able to fulfil this task well and to make good decisions.
- **Competence suggestion:** *motivation of the executive level*, ability to understand their problems
- **Advanced synthesizing ability**, keeping in mind what is good for the whole company. i4.0 brings along a risk that we lose track of this, and we focus on the details and some units, instead of the good of the whole community.

*According to the launch control director/board member of one of the biggest car companies of the world: “The training kit should be more comprehensive in wide scope and state of the art ways of working. Industry 4.0 is kind of wide and unprecedented. I think young people should be trained in **Management 3.0, servant leadership, autonomy and dealing with flexibility as new stability**. Those things are core in digitization, which is the main spin of Industry 4.0.”*

The interviewees were from different sectors and from different sizes of companies. Their function in the company was also different, which also means that their familiarity with Industry 4.0 distinguished. **All, however, agreed that the competences listed on the project list were important, regardless of Industry 4.0.** All companies agreed that e.g. **innovation** and **motivation**, as well as the **ability to think critically** and **creativity** are qualities that they look for in their employees or see as part of their qualities.

Their answers could be summarised in the following points:

- The 4th industrial revolution is not mature enough in some countries;

- It is important to learn, understand, design and implement the transformation process;
- It is necessary to generate a road map for digitising the workflow - agile use of applications and services;
- Technological changes are rapid as well as market demands, so a transformation in companies is a must;
- Everyone sees a great need to participate in different segments of the company, the company must operate as an organic whole;
- Rapid **adaptation to change** is a necessity, as has been demonstrated in the case of the COVID-19 pandemic;
- The **interdisciplinarity of individuals** will be valued even more in the future, as they are expected to be able to perform several different tasks in the company;
- The importance of **making the right and timely decisions** (quick decision making) and **cooperation** (work in groups, stakeholder networking and cooperation) was emphasised.

Connectivity of everything in the whole business process and inevitable changes in business organisations are expected to become challenge in the near future.

Suggestions on the List of competences

Regarding the competences that are required by managers and employees, which will help the smooth transition of the company into Industry 4.0, the interviewees agreed that the most important ones are:

- | | |
|------------------------------|-------------------------|
| • Communication | • Understanding |
| • Collaboration | • Leadership |
| • Team management | • Transmissibility |
| • Problem Solving | • Negotiation |
| • Change management | • Taking the initiative |
| • Innovation | • Conflict resolution |
| • Flexibility | • Persuasion |
| • Empathy | • Tolerance |
| • Collaborative intelligence | • Mentorship |
| • Creativity | |

A **new competence** identified by some of the participants is *project management*, which was considered as a soft skill. Project management includes the organisation of time and resources for the successful completion of a project.

Nevertheless, all participants agreed that all competences are equally important and a person who is responsible for the transition to Industry 4.0, should possess a combination of the above skills.

The interviewee organisations have all mentioned that they had to become familiar with the competences and skills over the past few years. They had to realise the importance of these and the impact they have on business operation and human resources. Most of them were clear about the skill gap their staffs were having, and specific training programs have already been on course to improve that.

Some interviewees have had trainings where they familiarised themselves with many competences and skills. In general, they have not encountered any challenge or necessary competence on the map that could be considered unfamiliar or unimportant. Yet, the relevance of these challenges and competences are sector and business specific. It has been suggested that *the impact of change will be much greater than previously thought, even in industries not directly affected by Industry 4.0* (i.e., accountants should not only be able to understand or use IT changes -they should also be aware to a certain extent of technological changes affecting businesses.)

Feedback on Question 2

The second question we were seeking real examples of the daily work of our interviewees, was “**Please, think of concrete problem situations in your daily work-life, relating to the competences and challenges listed on the map.**”

As there are so many valuable answers and solutions to the challenges the focus group provided, the partnership agreed on listing them all as examples (cases) and to be used in the Training Guidebook to be elaborated within our project.

We evaluate the shared experience as the most important asset of this survey and present it the way it was shared with us, adding the titles suggested by the interviewees. Some represent a combination of challenge / skills and competences described below by themselves.

All the real business examples are listed alphabetically in the Annex 5 to the complete version of the Field Study Summary.

Feedback on Question 3

The third question our interviewees had to answer, was: **“Could you notice the difference between the skill/competence level of the different generations? E.g. in case a specific skill Gen Z shows more expertise than the older generations, or right the opposite? In case of which competences? Could you mention concrete examples?”**

The concrete examples provided by our focus group are listed in Annex 6 to the complete version of the Field Study Summary, as they represent personal perception of different generation representative’s behaviour and could serve as source for further analysis or training materials. They are listed by country, as cultural differences and national characteristics have a significant impact on our Attention, Expectations, and Motivation.

The other answers and observations are summarised below:

Younger generations:

- In general, the youngest are easily adapting to the new devices and software, but they lack focus, cannot read with comprehension, and as a major weakness – they do not have the functional literacy.

When it comes to younger entrepreneurs, most of them know their final goal, but are impatient. For them, learning the social competencies should be emphasised, whilst for the eldest – more focus on the technical skills related to the new technologies.

- A common remark is that the youngest cannot formulate well ideas or concepts (Millennials) and even they work faster, they need someone to check, correct or even rephrase a document.

- Young people have an advantage in terms of technical tasks if there is something related to ICT, new technologies to study or use. From the point of view of reading the data and drawing conclusions, as well as proposing preventive actions, the older ones are the ones who are more skilled.
- Are more informed about soft skills and why they are important, so they have invested more in developing them.
- See new knowledge and technology as a challenge, they integrate more easily and can also transmit this new knowledge to employees belonging to older generations.
- Are more confident with technology. They are not frightened to use it and also, they are more informed about its impact and effect.
- Learn faster and can assimilate information more quickly.
- Do not have the necessary work experience
- They are lacking a refined coping strategy, and humility at work;
- For young people, everything is natural, everything goes;
- Young people lack the sophistication to complete tasks (after repeated mistakes they do not finish the document the client is waiting for because „it’s already after hours”);
- Young people expect ready-made solutions, they are less thorough, they do not have the patience (or need) to do thorough research;
- Young people take a different view on life: they live their lives and see work as a means to create the opportunity to do so;
- Young people find it difficult to take on long-term tasks and they want to avoid failure. They expect regular feedback, even for the tiniest subtasks;
- More open minded than older generation members;
- Difficult to evoke long-term commitment, it is a challenge to motivate and retain them;
- Young people are keen on facing challenges (most typically, Generation Z);
- Workload makes them develop, but they typically stay with a company for 2 years only;
- Giving them trust and challenges, they will perform better. (As training managers, for example, they will mobilise all acquaintances and social media interfaces to get the necessary number of applicants, so that trainings can start. All this is supported by performance-based remuneration);
- They consider work as kind of a contest with results as prizes;
- Weaker skills in critical analysis (Market research, obtaining market information - the Chief Executive can hardly understand how young people get the necessary information at all – however, they have difficulties in filtering out false information).

Older generations:

- In general, the eldest population has common characteristics –calmness, stable manner of reaction, no panic - count to 25 before speaking.
- When it comes to the eldest, it is usual for them first to try solving a problem by themselves, and in case they have some unsolved issues, they are ready to seek help.
- Another general observation is that a person born in the 70s will use only the functions of a certain 3D design program that they need and does not consider learning other functionalities necessary, while the younger ones have a lot of fun with these opportunities and invest time in learning and then using these software opportunities.

Older generations find it harder to get out of their comfort zone, while young people have a lot of energy and enthusiasm to experiment, as long as they are not discouraged by previous experience and do not have much to risk.

- Sometimes older workers are very closed to new solutions or taking risks, while for the younger ones this is more typical.
- Have invested more on developing their hard skills.
- Have already established connections with their colleagues or customers, and thus have increased communication skills.
- Have advanced soft skills and experience.
- Are considered as “blockers” of innovation and have increased unemployment rates.
- They find it more difficult to adjust to new technologies.
- Are more conservative and prefer personal contact and write notes by hand.
- Are more competent in working in teams and find it easier to collaborate with their peers.
- Older people are more reliable, they appreciate good developments at the organisation more (after they may have “burned themselves” elsewhere);
- Older people tend to communicate less openly, they are prone to bitching and talking behind each other’s back;
- For older people, working is a high priority, they are committed to their tasks;
- They prefer predictability and consistency;
- Older employees are less keen on learning (they want to live off their former prestige);

- Older employees are characterised by professional jealousy and pride;
- Older employees are less prone to innovation (the company is developing an essentially innovative, state-of-the-art device at the moment);
- Older people form a closed group. Baby Boomers especially, but X Gens also are characterised by the “It’s good as it is” approach and find rapid changes difficult to adapt to;
- Older generations are usually able to focus more and work in a more intense manner.

There is also knowledge and skills that people lack, regardless of age - for example, with an innate lack of empathy, with a lack of personal priorities, when they look for faults in others, when they have too many personal stressors they cannot deal with.

General observations

Some participants noticed that different generations of employees have differences in skills development. In fact, different generations inside a company have different cultures and sometimes find it **hard to communicate**. *Top management needs to find new ways of communicating to each generation.*

As a pattern, the following skills were highlighted to be more difficult (therefore more challenging) for younger generations than of older generations:

1. *Conflict solving*
2. Communication skills
3. Ability to transfer knowledge
4. Leadership skills
5. Ability to work in teams

Older generations find it much more difficult than younger generations to adapt, learn and use technology. The interviewees think this was a bigger issue in the past but one that should be addressed by the current climate where change has been forced upon us in this crisis. Therefore, whatever the level of skillset you will need to upskill or will not be able to function in the new emerging environment. **Upskilling** is critical and programmes are out there to help and should be financially support for employees.

They also think there should be a mechanism of voluntary redundancy supported to enable the people who do not want to change, or do not want to be in the working environment any longer and employees should encourage and support this financially to make way to new employees getting started.

Ultimately, a mix of generations structured appropriately within an organisation is beneficial to keeping pace with technology while maintaining commitment in meeting organisational goals.

Bridges and gaps

Differences: generations search for information in a different way. Younger generations will use CTRL F, while the older ones check the table of content of a document. The young people are more aggressive, goal oriented.

The team leaders are usually younger people, while the team members are older people. The young team leaders face a serious challenge: they have less professional experience, than the elders, yet have to lead and motivate. They work hard to earn the respect of their teams. The co-workers support them to get better in communication and to establish their position.

Owning success and acknowledging the others - The management/project team came across a difficult and urging problem. They have been looking for solutions but it wasn't easy to resolve the situation. Finally, a young colleague came up with a good solution, but he presented it in a very bad, arrogant manner. It caused a big dilemma to the manager: in case he acknowledges the young colleague, the other - older- colleagues' loyalty will fade, at least in that project. In case he turns down the young colleague's solution, the problem won't be resolved. Solution: offered 2 choices to the young colleague: 1. he quits or 2. he prepares a nice presentation about the suggested solution in which he explains how the other team members contribution and experience helped him to mature the idea of the solution. Thanks to this, the colleagues realised indeed, that it was a teamwork even though the idea took shape at the end in his head. Conflict resolved.

Different generations' goals and work motivations are different: What makes a workplace attractive for them? Older professionals: good salary, stable and safe workplace (long-term), career building possibilities (top 3). Young professionals: enough free time, flexible work hours/working style. Time and life-quality issues represent more value for them, while loyalty is less important.

As we can see, there is a **clear gap of communication and progress between generations**. The solution is to create teams that consist of people belonging to different generations, so that all benefit from each other. As one of the interviewees noticed, the gap between generations is less obvious in companies that apply intercompany education programmes.

Young people start using new tools sooner, but they do not have the necessary "inside" understanding, so when complications arise, young people are the ones who find it harder to find a solution than older people. Perhaps this is also due to the experience that older people have gained through longer work experience. This

was especially emphasized by one interviewee who deals with custom made robotics, saying that the older generation finds a solution in the program sooner than the younger one.

Another interesting quote from one of the interviewees is that we are currently at industry 4.0 era, with people belonging to industry 3.0 and technology belonging to industry 2.0.

Conclusions

In today's business ecosystem, diversity and inclusion are not only important for prosocial reasons, but there is very much a business case for diversity management.

For the first time since the beginning of the industrialisation, there are 5 different generations in the workplace. Each of these groups has its own desires and motives in regards to what they want from their work and how they cope with the challenges. Unfortunately, many organisations have yet to identify what these unique needs are, and thus to plan how to benefit from the potential that is inherent in having such a diverse workforce.

Those generations are: **Traditionalists** (Silent generation, born between the years 1928 and 1945); **Baby boomers** (Born between 1946 and 1960); **Generation X** (Born between 1961 and 1980); **Generation Y** (Millennials, born between 1981 and 1995); and **Generation Z** (Digital Natives, born after 1995).

In LinkedIn's just-released [Global Talent Trends 2020 report](#), the multigenerational workforce is identified as one of the four main currents that will shape talent acquisition in the coming years. And 89% of the talent professionals surveyed by LinkedIn said that a truly multigenerational workforce makes a company more successful.

As the **Traditionalists** represent only 2% of the 2020' workforce, their characteristics are not part of our survey as they will not actively participate in the transition to i4.0.

[Global forecasts](#) predict that by 2025, Millennials Will Comprise Three-Quarters of the Global Workforce³:

- People between the ages 15 to 24 make up almost 20% of the world's population.⁴

³ EY, *Global Generations: A Global Study on Work-Life Challenges Across Generations* (2015): p. 1.

⁴ ILO, [World Employment Social Outlook: Youth](#) (2016): p. 1.

- They account for more than 15% of the global labour force.⁵
- By 2020, 41.0% of the global population will be 24 years old or younger.⁶

*In Europe, the EU's workforce is shrinking.*⁷

Millennials are the European Union's *minority population*.

- There are fewer Millennials and Generation Z in the workforce than Boomers in Europe.⁸

The EU's population of those aged 80 years or older is projected to more than double by 2100 (from 5.6% in 2018 to 14.6% in 2100).⁹

- The population of adults in retirement age (65 years or older) will make up 31.3% of the EU's population by 2100, compared to 19.8% in 2018.¹⁰
- Although reaching retirement age, adults are staying in the labour force longer.¹¹

The retirement-age population will be larger than the working-age population in Europe in the coming decades.¹²

- The working-age population is expected to continue to decline until 2100.¹³

The global ageing trend makes it evident there is no balance – in a perfect world, there would be as many entering the workforce as there are departing and there would be a balance of next-generation employees for tomorrow. Unfortunately, in industrial countries, millennials are putting off having children longer and are having fewer children; plus, job availability isn't equally distributed around the globe.

Economists note that unlike earlier generations, there is a shortage of people entering the workforce. And, as people retire, they take with them significant business and industry knowledge that can't be replaced. [Pew](#)

⁵ ILO, [World Employment Social Outlook: Youth](#) (2016): p. 1.

⁶ United Nations, ["Percentage of Total Population by Broad Age Group, Both Sexes \(Per 100 Total Population\)," World Population Prospects 2019](#) (2019).

⁷ Deloitte Insights, [Voice of the Workforce in Europe](#) (2018).

⁸ Deloitte Insights, [Voice of the Workforce in Europe](#) (2018).

⁹ Eurostat, ["Population Structure and Ageing,"](#) (2019): p. 7.

¹⁰ Eurostat, ["Population Structure and Ageing,"](#) (2019): p. 9.

¹¹ Deloitte Insights, [Voice of the Workforce in Europe](#) (2018): p. 4.

¹² Eurostat, ["Population Structure and Ageing,"](#) (2019).

¹³ Eurostat, ["Population Structure and Ageing,"](#) (2019): p. 9.

[Research](#) recently reported that baby boomers reached 78.8 million in 1999 and recent generational growth has not kept pace.

Having in mind all those figures and corresponding threats, our partnership should be focused on the training requirements of all the four generations on the labour market, providing variety of tools to meet different generation groups with selection from those three topics: Innovation thinking; Motivation management and Technical cooperation.

According to our interviewees, even that conflicts exist in multigenerational workforce environment, mainly due to personal and professional values' differences and different communication styles, many employers already claim they benefit from this unique opportunity to have at the same place and time such a variety of professional and individual skills and knowledge, thus having the opportunity to provide the companies with their own know-how database.

That diversity can certainly provide benefits in terms of the unique backgrounds and perspectives that each generation brings. It can also lead to misunderstandings and conflict, though. Recognising the potential for conflict and taking steps to proactively minimize that potential can help ensure a positive environment for all—one in which multiple perspectives and generations can thrive.

Companies everywhere report that finding people for positions isn't all that difficult, but it is increasingly tough to find people with the expertise and experience to do the work well.

From the interviews we can conclude that the transition of a company to Industry 4.0 is accompanied by many challenges, involving both human and non-human factors. In particular, the challenges identified by the interviewees are increased costs, technology advancements, lack of digital skills by employees, lack of soft skills by management and the need for constant updating of knowledge.

Interviewees also identifies a plethora of competencies required by management, in order to facilitate the transition of the company into industry 4.0. They agreed that all competencies are equally important and a person who is responsible for the transition to Industry 4.0, should possess a combination of skills.

Regarding the differences in generations inside a company, participants agreed that younger generations are more efficient with new technologies and can adapt more easily to change, while older generations prefer personal contact and have more advanced communication skills.

Along with age differences, research shows that each generation has a unique recognition of the concept of work/employment. Some see it as a transactional process through which they can gain important resources and status. Others see work as a means to influence their environment and find meaning in their lives. It is important to note that there are no right or wrong answers as to what the job should be, only personal perceptions and expectations.

As the workplace becomes more diverse, not only in terms of generation but also other attributes, it's important to take time to understand and provide opportunity for interaction with and between various groups. The more people are able to understand each other, the better they are able to work together, thus acknowledging social competences' importance.

Although there are many differences between the four workplace generations we covered in the study, there are certain things that all of them can agree on. All four generations place a huge value on family. In addition, all four generations believe training and feedback is extremely important for a successful career. Finally, change is hard. Young, old, or somewhere in the middle, most people do not enjoy change. Regardless of your personal opinions and preferences, getting to know your co-workers and how they operate is extremely beneficial to all kind of influence.

Some practical advices to the managers, working in multigeneration environment:

Don't focus on differences. There seems to be a tendency to focus more on what is different about each generation than on what similarities might exist. Avoid the potential to accept as true the stereotypes about various generations; be careful with expressions that instil stereotypes: "My generation is ...", "When I was at your age ..." or "All [any generation] are ...".

Expand your communication strategies. Make messages available in multiple formats.

Clarify expectations. Always clarify expectations for the completion of a project or task. Traditionalist and Boomer bosses may expect a discussed task to be acted on immediately while Gen X and Millennials may be satisfied if it is on the to-do list.

Speak with facts. Even if you think your problem has to do with someone's age or your assumption that they are slow or lazy, stick to the facts. Tell them what your expectation was and what you observed. Allow an open dialogue; perhaps you didn't have the same expectation or your observation was inaccurate. Speak with facts, not with judgments.

Build collaborative relationships. We understand and appreciate others more when we have the opportunity to get to know them. Creating opportunities for employees of different generations to interact in both work- and non-work-related settings can help to build relationships and minimize misunderstandings.

Create opportunities for cross-generational mentoring. This can work both ways - don't automatically assume that younger generations will be mentored by older generations. All age groups have opportunities to learn from each other.

Study your employees. Understand the demographics of your workplace as well as employee communication preferences. A regular survey (e.g. annually) can be used to help identify both differences and similarities between various employee groups.

Consider life paths. Understand where your employees are at in their life paths in terms of responsibilities and interests, they may have outside the company. But don't make assumptions. It's important to remember that employees, regardless of generation, share both commonalities and differences.

Show respect. Recognise that a different method or time line for problem-solving and completing tasks could be a generational difference so have patience and show respect at all times. If you don't understand their process, and if it is necessary for you to understand, ask.

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In these dynamic and uncertain circumstances, managers must adapt to challenges of Industry 4.0. The TransIT Project was specifically designed to facilitate managers to successfully transition to this new era.

