



Preparatory analysis

Mentor level and Sector-based analysis

MENTORCERT project
Work Package 2

Budapest, 2018





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MENTOR LEVEL ANALYSIS

Foreword

This Part1 of the O1 is a key result of the preliminary analysis phase. This exploratory investigation is necessary for the preparation of the training material development and the mentor certification.

The experience-based knowledge evaluation of the mentors and the establishment of different mentor levels are essential to the setting up of a certification scheme and its long-term sustainability. Participating partners in the future mentor-network development must define at least 3 levels for the mentors based on their knowledge and working experience. The tasks in the second part of the IO1 are:

- to analyse the working experiences and European examples and specify the basic, intermediate or advanced and the senior business mentor categories
- to assign the necessary levels of knowledge and work-based experiences (former or during the mentoring work)
- to work out the relations between the levels and to prepare the evaluation methodology

I. Business Mentor experience in Europe

Friends and family, online gurus, publications, and even casual acquaintances can provide entrepreneurs with a steady flow of information regarding news, industry developments, and opportunities. Industry analysts, consultants, employees, and good [networking](#) contacts can share their expert knowledge with you regarding particular situations and needs you may encounter.

But only a business [mentor](#) can truly share wisdom on an ongoing basis – in a manner that can have a directly positive impact on the growth of your business over time. A business mentor is someone with more entrepreneurial business experience than the entrepreneur mentored, who serves as a trusted confidante over an extended period of time.



The challenge

'Mentoring is more than just answering occasional questions or providing ad-hoc help. It is about an ongoing relationship of communication, learning and challenge. There are skills, processes and structure'¹.

So as a mentor, the key concerns may include:

- Will I be able to do this? Do I have the time, skills, knowledge and experience required?
- What am I supposed to do?
- What if things go wrong?
- Will there be clear process, time schedule, availability for an efficient action?

So first, it is clear about the role as a mentor. It is important to know that the role is sharing ideas, skills and experience, offering support, encouragement, insight, suggestions and advices.

There are many similarities between the role of a mentor and a coach, a counsellor, or a teacher. Listening skills as counsellor, guiding approaches as a teacher, encouragements as a coach. Nevertheless, it is also important that the mentor is not too demanding.

II. Terms and definitions

For the purposes of the EU MENTORCERT documents, the following terms and definitions apply.

Business Mentor

A business mentor brings an appropriate form of support for the mentee, allowing him/her to develop his/her strategic business skills and learn in action with the support of a person with extensive business experience.

Business Mentoring

Business mentoring is a personal, voluntary and confidential accompaniment provided by an experienced business mentor (3.1) to another person, a mentee (3.11), in the realization of his/her project. It responds to a particular need for a mentee to acquire, develop, improve and make visible the skills required to lead their business.

¹ Effective Mentoring understand the skills and techniques – Gil Hasson / Pearson UK-2014.



III. Experiences in qualifying the Mentoring approaches

In 2004, The European Commission proposed that entrepreneurship be introduced into curriculum from primary school to university level. (Schoof, 2006). There have been some initiatives to stimulate and support youth entrepreneurship implemented. The scheme directs young persons to training opportunities and resources available in their local communities, assigns a business mentor to provide one-to-one support for their three years in business, and helps to ensure that the young persons have access to finance, bank loans or a grant (Young Business International programme).

In European countries, for many years; mentoring programmes were developed for many type of situations:

- Start-ups;
 - <https://mentoreurope.com/services/blueprint/>
 - FET (Future Emerging Technologies) <http://www.fet2rin.com/mentors>
 - Actions are expected to initiate radically new lines of technology through unexplored collaborations between advanced multidisciplinary science and cutting-edge engineering. It will help Europe grasp leadership early on in those promising future technology areas able to renew the basis for future European competitiveness and growth, and that can make a difference for society in the decades to come.
- 'Women in Business': The Lady Up programme (Slovak Republic) is unique a mentoring program that does more than just improving your skills and building your business idea. Lady Up is a program which observes business from your perspective – the perspective of young girl willing to fulfil her dreams, but slowed down by worries and lack of idea where to start. However, Lady Up is here to help you get through all starting obstacles with the aid of people who already know how to do it. The program helps to achieve success through unique training program and guidance of skilful mentor –.

But these programmes do not include any competence assessment.



IV. The European Mentoring and Coaching Council initiative (EMCC)

EMCC started its life in 1992 as EMC (the European Mentoring Centre) when David Megginson was having a meeting with David Clutterbuck over a book that they were writing together and David Clutterbuck said 'I've been thinking that we ought to create something called the European Mentoring Centre: are you interested?'

From the beginning, the principle of inclusivity was important. Anyone could join EMCC provided that they agreed to abide by the Code of Ethics. Members were encouraged to establish their own EMCC's according to the legal requirements of their own countries. As of 31st December 2017, the EMCC have 24 Affiliated Countries in Belgium, Cyprus, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Romania, Spain, Switzerland, Serbia, Turkey, Ukraine, and United Kingdom.

Through a specific set of value propositions EMCC International Research offers complementary capabilities to stakeholders involved and interested in coaching/mentoring research with the main aim of supporting the development of effective evidence-based practices. Producing high quality, applicable pieces requires the involvement and coordination of several capabilities: theoretical knowledge, needs assessment, concept development, data collection, analysis, interpretation and dissemination. To handle all of these challenges, the vision of Research is to elevate EMCC International into a 'platform position' where all involved stakeholders (e.g. coaches, academics, potential sponsors, practitioners etc.) could get their relevant share from the outcomes, results and applications of the research process for professionalising the Coaching/Mentoring, in exchange for their contribution to it.

Some existing Qualification level for Coaching and Mentoring tried to initiate the different levels of qualifications including knowledge, practices and experience building. (Ex: Scottish ILM institution):

A dual accreditation, from both the ILM and the EMCC, is also available to participants of this programme by completing an extended period of practice in addition to the mandatory learning units. This will lead to the EMCC European Quality Award Certification at Practitioner Level as well as the ILM Level 5 Certificate.

- ILM SCQF Level 5 Award in Introduction to Mentoring Skills
- ILM SCQF Level 6 Qualifications in Coaching
- ILM SCQF Level 9 Qualifications in Coaching and Mentoring
- ILM SCQF Level 11 Qualifications in Executive Coaching and Mentoring



The ILM programme itself is made of three mandatory units which enable participants to understand, develop and demonstrate knowledge and skills in workplace coaching and mentoring.

1. Unit 1 – Understanding the skills, principles and practice of effective management coaching and mentoring – Enables participants to understand the contribution of coaching and mentoring to individuals and organisations and make a case for using Coaching or Mentoring in their organisation.
2. Unit 2 – Reviewing own ability as a Management Coaching or Mentor – Participants review their own ability as a Management Coach or Mentor, exploring their ethical and moral views as well as the core communication skills.
3. Unit 3 – Undertaking Management Coaching or Mentoring in the workplace – Enables participants to plan and deliver a short coaching or mentoring programme in line with their organisational, divisional or team goals.

This Level 5 programme is equivalent to study at Foundation Degree Level. It requires 37 hours of Guided Learning Time. Completion is typically over a six to eight-months' timeframe. There is one route including supported Distance Learning Activities – A blended learning approach including 5 classroom days (1+2+2), distance learning activities, one-to-one coaching, observed coaching, assessment teleseminar. All supported by a dedicated Coach-Mentor.

The EMCC EQA Practitioner programme combines all of the required elements of the [ILM Level 5 Certificate in Coaching and Mentoring](#) along with an extended period of practice of 40 hours.

This dual award places a key emphasis on the practical application of the skills of coaching and mentoring. Professional competence in application and practice is developed throughout the duration of the programme.



V. Levels to Support the Business Mentor Career Path

A career path for the ever evolving and growing business mentor professional.

There are many good reasons to earn a professional certification or certificate:

- Personal and professional recognition
- Increased income – Added Value to your Resume
- Professional development opportunities

For each level, there is specific requirements, application, exam, and more

As these levels are competency based and aligned with MentorCert Skill Card, they are meant to guide career progression.

VI. Business Mentors Certification Levels

The Business Mentors levels are described in three levels of user certification for MentorCert in order to independently verify a user's knowledge and proficiency. Each level of certification increases in difficulty, the complexity of situations and is considered a prerequisite for the next level. These certification levels include:

1. Level 1 certification – MentorCert Proficiency (Power User)

This level confirms that a user has mastered the foundational Business Mentoring concepts and can use more intermediate Business Mentoring practices to increase their productivity, efficiency, and accuracy.

2. Level 2 certification – MentorCert Mastery (Subject Matter Expert)

NOT USED FOR THE ERASMUS + MENTORCERT Project

This level validates that the user has full mastery of the Business Mentoring estimating situations and can be considered a Business Mentors matter expert.

A mandatory part of user certification is completing a three-part program at each level that consists of:

- a practical hands-on, where candidates must illustrate his/her experience based on specific evidences and requested materials;
- a practical exam where the candidate is asked questions pertaining to the estimate created in the practical lab; and
- a knowledge exam that consists of multiple choice, true/false, and matching questions



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Prerequisite		Level 1- Providency evidence	Level 2 -Expert evidence
Entrepreneurial experience	Holistic view and experience on entrepreneurship and its wider (social, economic) context	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...
	Professional knowledge in the following fields: Marketing, Sales, Brand building, Strategy making, Financial planning, Capital raising	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...
	Specific areas of expertise: Marketing, Sales, Brand building, Management, Strategy planning and strategy making, Financial planning, Capital raising, OD	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...	certificate, a graduate in the field, a doc proven his professional experience as entrepreneur...
Mentoring experience	mentoring experience: number of years	3	5
	mentoring experience: number of mentees (at least)	6	10
Prior certification & training	having participated to a training as a mentor	n/a	n/a



References and further readings

- Effective Mentoring : understand skills and techniques : Gill Hasson – Pearson UK, 2014
- The SAGE Encyclopedia of Business Ethics and Society SAGE Publications, March 2018
- Mentoring in Action: A Practical Guide for Managers: David Megginson, David Clutterbuck, Bob Garvey; Kogan Page Publishers, 2006
- Work, Family Policies and Transitions to Adulthood in Europe: T. Knijn, published by Springer

Additional sources

- <https://www.emccouncil.org/>
- <https://www.i-l-m.com/learning-and-development/coaching-and-mentoring-qualifications>
- <http://towardsemployment.org/mentor-requirements-qualifications/>



SECTOR-BASED ANALYSIS

Introduction

One of the most important lessons that has been learned from the TRUST ME project is that besides the generic mentor skills and competencies business mentors should be aware of the sectoral specificities of the industrial area where they carry out their activities and they also should be able to treat the particularities of the different stages of the different development cycles of companies. The training modules being created as final outcomes of the MentorCert project should be designed accordingly.

In order to make a better understanding of the sectorial and business maturity specificities 4 horizontal and 4 vertical issues have been investigated for serving as an input for the training curriculum development. This document provides an overview on the selected themes covering the variety of important challenges and trends that characterise the sectors chosen for serving as a basis for both the fine-tuning of the skill card and the curriculum.

The document consists of various parts. It provides the experience-based knowledge evaluation of the mentors and the establishment of different mentor levels are essential to the setting up of a certification scheme and its long-term sustainability. The mentor-level analysis is accompanied by the descriptions of the horizontal and vertical issues. The following issues have been selected for analysis:

Vertical:

- Agro-food
- Construction
- Financial technologies (Fintech)
- Tourism

Horizontal:

- Nascent entrepreneurs
- Start-up enterprises
- Mature enterprises
- Enterprises in transition



The structure of the analyses is as follows:

- I. Brief overview of the vertical/horizontal issues
- II. Analysis
- III. Best practices of answering to the challenges
- IV. Lessons for the curriculum development
- V. Definition of sectorial skill card elements

Finally, it contains a short analysis of the skill and competence needs in the various sectors and some suggestions for the curriculum development.

Vertical Issue: AGRO-FOOD

I. Brief overview of the sector

The agro-food industry can be defined as the sector which includes all operations related to processing, preserving, preparing and packaging of agricultural and food products carried out in industrial production units (Mulder, 2008).

The European Union has become the largest global exporter of agricultural and agro-food products, with an export turnover totalling more than €120 billion, i.e. 7.2% of the EU's total exports, since 2009 exports overcome imports – figure 1. Almost 70% of these exports are processed goods, which highlights the importance of including these two sectors when mapping out a trade strategy for the European Union (Copa – Cogeca, 2018).

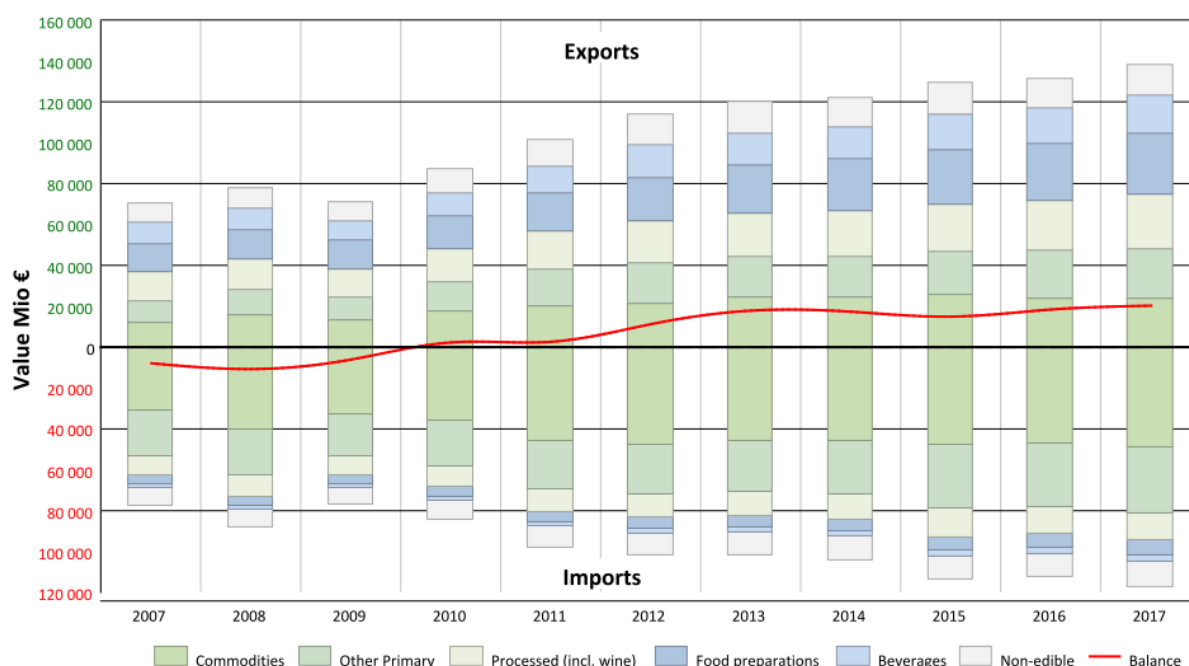


Figure 1 - Structure of EU Agri-food trade with Extra EU 28, 2007 – 2017 (DGARD,2018).

Additionally, more than 60% of the raw materials processed by the agro-food sector are of European origin, which demonstrates the close ties between the European and the global market and major exporting categories include wine and spirits (17%) or infant food and other cereals (5%), pork meat (4%) and chocolate (4%) – figure 2 - (Copa – Cogeca, 2018).

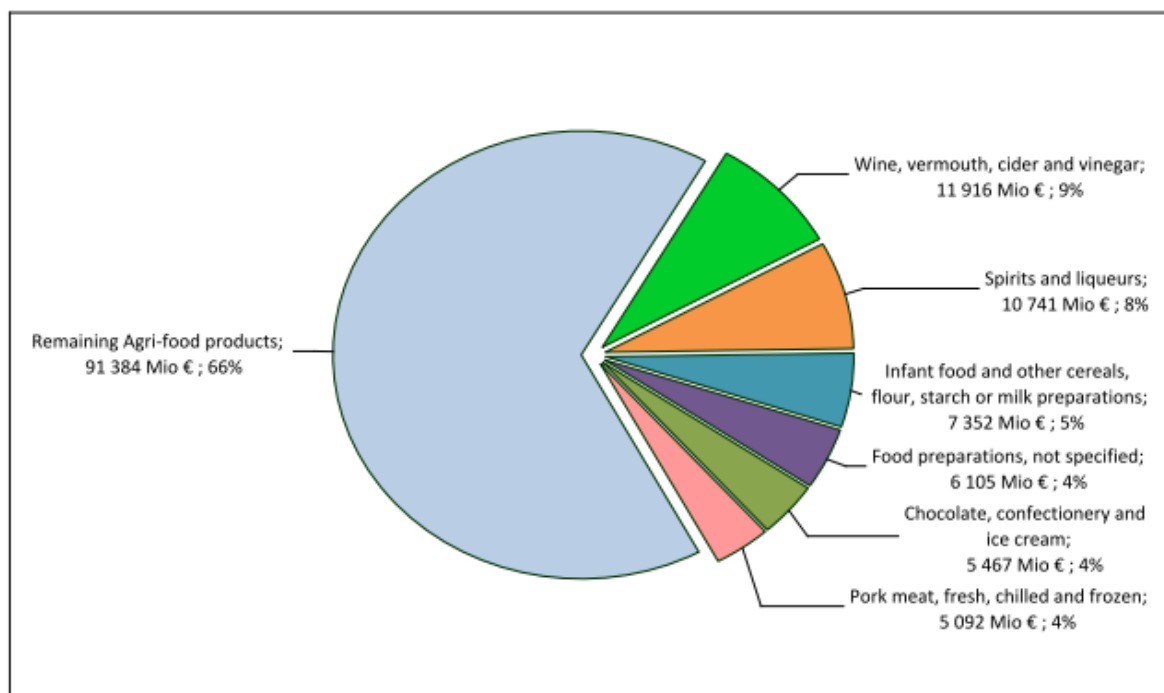


Figure 2 - Top EU Agri-food exports to Extra EU 28 in 2017 (DGARD, 2018).

The Agrofood market can easily be divided into two groups: on the one hand, a big share taken by a small number of large companies; on the other, many small agro-industrial establishments, owing a small market share (Ajuntament de Barcelona, 2014).

Today, about 99% of food and drink companies in Europe are small and medium sized enterprises (SMEs). These generate about 50% of the sector's turnover, and provide two thirds of its employment, mostly in rural areas (European Technology Platform Food for Life, 2016).

The European food and drink sector is unique in its very high regional and continent-wide cultural diversity, which is not only a point of pride for many citizens, but also provides a framework ideally suited to foster creativity and innovations. The great variety of regional culinary traditions that have developed across Europe over the centuries ensure that the food and drink sector is deeply rooted in society. The sector profits from



a high quality science ecosystem in the food, nutritional and related disciplines formed by top level industry players, academic and research institutions, and players have a proven capacity to carry out ground-breaking research and development activities. Through this industrial and science ecosystem, the sector is supplied with a highly motivated well-educated workforce. Europe is also highly proactive in the development and implementation of effective regulations to ensure that its food supply complies with the highest safety and quality standards, benefitting from its excellent scientific and educational ground (European Technology Platform Food for Life, 2016).

SMEs are often more flexible than large scale enterprises and are therefore able to react more quickly to market changes, making them first indicators of potential future developments (European Technology Platform Food for Life, 2016).

II. Global trends and challenges

Key Global Challenges

Macro trends that have the ability to shape the needs for research development and innovation identified by European Technology Platform Food for Life (2016) as the following:

1. Consumer Engagement, Consumer Behaviour and Perception of Food

Surveys show that consumers increasingly distrust the food sector as a provider of food solutions that they want or need. This is not necessarily fault of the players currently involved. The digital revolution has fundamentally altered the way we interact with each other or with industry and how we approach and perceive new technologies and products.

2. Demographic Changes

The global population is undergoing a rapid change, not only in terms of size, but also with respect to composition. Modern medical achievements, paired with successes of the food sector, have led to tremendous increases in the average lifespan of a person.

3. Resources

Even though there are currently sufficient or, in some cases, even abundant resources available to produce food - a fact that in turn has led to a decrease in undernutrition (and conversely a rise in overnutrition) - this situation will likely not persist for much longer. With the number of natural resources that are gradually being depleted going up and



the global population continuing to increase, securing a continued supply of high quality raw materials will surely become one of the great challenges of the 21st century.

4. Sector Maturity

There is a certain 'fatigue' within the sector as a result of its maturity. The industrialization of food manufacture dates back to the beginning of the 19th century following advances in chemistry and metallurgy which gave rise to great productivity increases in agriculture. As a result of a growing raw material supply, there was a need to develop new machinery and technologies to process and preserve agricultural products. As a consequence, food became widely available which, in turn, caused prices to decline.

Challenges to SME

Concerning the development of the competitiveness and innovation of the European SMEs the following challenges have been identified by the Food Drink Europe (2017):

1. The Single Market

Every year 500 million European consumers spend €1 trillion on food and drink products. The European Single Market is the EU food and drink industry's main market, with around 90% of turnover generated within the EU.

Exporting to other Member States is an important source of growth for SMEs. Exports account, on average, for more than 25% of the turnover: this share reaches more than 50% in Member States where the domestic market is small (e.g. Belgium, the Netherlands).

For the past 25 years, the Single Market has been one of the EU's greatest achievements. It is of vital importance for SMEs that it functions correctly, creating an environment with harmonised rules to ensure high quality products across the board, which is beneficial for companies and consumers alike.

2. Innovation for growth

Food and drink SMEs are highly diversified when it comes to the products they make, the regions and countries in which they're located and where they sell beloved brands and products. They are equally diverse when it comes to how they approach innovation. Indeed, across the sector, innovation can take different forms: using technology to better assess consumer preferences, improving production efficiency, making business practices more environmentally sustainable, etc.

Micro-companies (i.e. up to nine employees) account for 79% of the food and drink SMEs. With such limited human resources, some SMEs struggle to make innovation a core part of their businesses, and less than 1/3 of them have innovation activities in place. While



their small scale and diversity enables them to develop and test novel solutions, they also face challenges because SME presence is often limited to local and regional markets, where they can lack personnel with a strong scientific or technology background. SMEs face particular challenges in relation to accessing funding to support innovation and collaboration with other entities.

3. International markets

EU food and drink SMEs are actively engaged in international markets across the world. In 2014, almost 19,000 food and drink SMEs exported to markets outside the EU, generating 25% of the total value of food and drink exports.

However, SME participation in international trade could be improved. Studies suggest that an SME's decision to internationalise can lead to better performance in terms of profitability, productivity, innovation and growth. It is important for food and drink SMEs to benefit from the EU's strong international reputation for safe, high-quality and innovative products, not to mention the growing international demand.

At the same time, the financial and human resources constraints that many SMEs face are very real. Such things can make it challenging to explore new markets and take advantage of overseas business opportunities. Access to finance, information and expertise on third country markets, geographical and cultural considerations, and complex import/export regulations are often limiting factors to SMEs' participation in international trade.

This is also true for trading for some European countries. Divergent product requirements and technical regulations may also result in burdensome trade barriers and higher market entry costs to which SMEs are particularly sensitive.

4. Employment and skills

4.2 million people are employed by the food and drink industry in the EU, with 2 out of every 3 jobs being generated by SMEs.

Because of their reliance on local communities for both human resources and raw materials, many SMEs run apprenticeship programmes with local vocational schools and universities, in order to ensure recent graduates have the right skills. However, identifying and recruiting new employees can be difficult, especially if the candidates don't have the educational background and skills necessary to fit the industry's changing needs. This can have an impact on the industry's labour productivity and, therefore, on SMEs' future growth.

5. Upstream and downstream relationships in the food chain

The food supply chain, including farmers, food and drink companies, wholesalers and retailers, is highly intertwined in Europe's social, cultural and economic fabric. The food



supply chain is a major source of jobs and growth, especially in rural areas; it accounts for 6% of the EU gross value added and employs 24 million people across the EU.

Closely linked to places of agricultural production, food and drink SMEs are the cornerstone of the food supply chain. These 285,000 SMEs count on:

- The availability of agricultural raw materials of the appropriate quality, quantity which are also competitively priced;
- Good business relations with upstream and downstream partners, in particular with retailers.

III. Best practices of answering to the challenges

Addressing Key Global Challenges, following recommendations from European Technology Platform Food for Life (2016), are according to these key ideas:

1. Increasing the Engagement and Involvement of Consumers:
 - a. Improving Insights in Consumers;
 - b. Making Food an Activity ;
 - c. New Food Production and New Delivery Models to Provide Better Access;
 - d. Consumer Engagement in Sustainability;
 - e. Modular Food Production and Distribution.
2. Providing the Basis for a More Personalized and Customized Food Supply:
 - a. Appreciation of Diversity in Food and Eating;
 - b. Dietary Approaches for the Prevention of Non-Communicable Diseases;
 - c. Intelligent and Communicating Packages;
 - d. Understanding Food Digestion;
 - e. Food Meets Gut Microbiome;
 - f. New Concepts and Technologies to Assure Consumer Health and Wellbeing.
3. Developing a More Flexible, Dynamic and Sustainable Food System:
 - a. Integrated Food Safety as a Unique Selling Point;
 - b. Food Structuring for Better Health;
 - c. Towards Sustainable Packaging Systems;
 - d. Alternative Food Sources;
 - e. Generation Strategies for Food Safety Assessment;
 - f. Towards Less Refined, More Natural Food Ingredients.



Addressing Challenges to SME

1. The Single Market

The Single Market has created great opportunities for SMEs to grow. Nevertheless, SMEs still struggle with obstacles that cross-border business can face, including having to adapt products to local technical rules, which creates unnecessary administrative burdens. For an SME, the cost generated in compliance can hamper the company from extending its activity.

Re-nationalisation of policies, different interpretations of EU rules and gold-plating of EU directives often create unnecessary barriers for food and drink companies within the Single Market. In the context of an ambitious and comprehensive Single Market strategy, relevant recommendations are:

- Prevent the proliferation of national initiatives that foster an anti-EU-wide approach;
- Ensure properly harmonised application and enforcement of EU legislation.
- Simplify and clarify the functioning of Mutual Recognition.

2. Innovation for growth

Food and drink SMEs are exposed to the same global trends and challenges as any other member of the food value chain. However, their business may struggle to meet innovation demands due to limited resources in particular. SMEs need support to encourage and foster their innovation activities, hence it is important that they are brought into the research and innovation (R&I) cycle in a manner tailored to their needs: FoodDrinkEurope supports these recommendations and thus asks EU policy makers to:

- Make consumer, social and business sciences accessible to SMEs.
- Provide funding and financial tools tailored to SMEs.
- Create synergies between start-ups and SMEs
- Exploit complementarities with other disciplines.
- Accelerate the diffusion of solutions to SMEs, and create access to enabling facilities, tools and services.
- Develop human resources through enhanced knowledge transfer and training programs for SMEs.

3. International markets

Facilitate SMEs' access to new markets would require policymakers to: At global level, promote coherence of international food and drink related regulations and standards facilitators of international trade and a strong, rules-based multilateral trading system administered by the WTO. At EU level:



- Recognise the strategic importance of promoting the SMEs' internationalisation;
- Address tariffs and non-tariff barriers to trade;
- Recognise SMEs' specific needs in bilateral trade agreements;
- Support an efficient promotion policy covering a large variety of EU food and drink products and activities such as the EU's high-level trade missions;
- Facilitate SMEs' access to information in relation to regulatory requirements and market intelligence, and strengthen business support services at EU and Member State levels.

4. Employment and skills

National and European authorities should explore the following activities:

- Future private and public initiatives aimed at addressing misconceptions about the food and drink sector should encourage more SMEs to attract young talent;
- Sharing of best practice examples of the labour market should be facilitated at national and EU level;
- The full potential of apprenticeship programmes needs to be harnessed across all EU countries, with specific support to SMEs;
- More effort should be made to support food and drink businesses, especially SMEs, to better anticipate the need for skills in specific sectors. This will contribute to the achievement of a better match between skills and the labour market, as it is encouraged through the European Sector Skills Councils and highlighted in EU's Agenda for New Skills and Jobs.

5. Upstream and downstream relationships in the food chain

In order for SMEs to benefit from the whole spectrum of the Single Market and develop opportunities in non-EU countries, well-functioning and balanced supply chains are essential. Right at the centre of the food supply chain, SMEs need policymakers to:

- Address unfair trading practices which affect SMEs' ability to innovate and invest;
- Promote an efficient, sustainable and diverse agriculture supported by a market-oriented CAP;
- Support the development of rural areas with public investment in infrastructure and services via the European structural and investment funds for the benefit of the competitiveness of the supply chain;
- Further support a circular economy approach, in particular through food waste prevention and management (ex: www-ex-tax.com);
- Promote dialogue in the food chain, for a better functioning food supply chain.



IV. Lessons for the curriculum development

The Food System of Tomorrow will have to use nature's resources in a responsible and sustainable manner, and be dynamic, flexible, fully transparent and accessible to all. Progress will be made by bridging modern social and natural science and technology approaches to benefit the greater public, making healthy and sustainable food alternatives not only effortless and affordable to all consumers, but also desirable and exciting (Anderson, Jack & Connolly, 2014).

The more qualified professional profiles that can be found there range from pure sciences (with degrees in biology or chemistry) to business management and marketing, with some food and industrial engineers as well. The following are some of the university qualifications required in the agro-food industry's areas of activity: Food Sciences Technology; Biotechnology; Biology; Winemaking; Food Technology and Management; Human Nutrition and Dietetics; Agro-Food Engineering; Biological Systems Engineering; Industrial Technologies Engineering; Chemical Engineering; Chemistry; Pharmacy Business Administration and Management; Marketing and Market Research; and Marketing and Commercial Management. In an industry as dynamic as that of food, in which consumers are increasingly demanding regarding the quality of foodstuffs, their effects on health, how easy they are to eat, and their effects on the environment, among other issues, continuous learning and retraining through professional life is important. Masters, postgraduate diplomas and PhDs are some of the options for extra training, specialisation and updating knowledge and skills designed to provide the industry with the knowledge that it requires, in key areas like: food innovation, nutrition, agro-food biotechnology, eco-friendly agriculture, aquaculture, management of food companies and the commercial management of food wholesaler (Ajuntament de Barcelona, 2014).

The soft skills required depend on the level of responsibility held in an organisation. Generally speaking, the ability to work alone or in a team (often multidisciplinary) is important, as is a capacity for analysis and anticipation, in order to understand and foresee changing habits and demand preferences; the ability to adapt to new technologies; flexibility in carrying out new duties; dynamism and innovativeness; a critical outlook; the ability to evaluate the social, ethical and environmental implications of the professional activity; an aptitude for communication; the availability to collaborate; a capacity for negotiation; and the ability to retrain and acquire new knowledge throughout professional life. As levels of responsibility increase, leadership, the effective delegation of responsibilities and strategic orientation become important skills (Mulder, 2008).

Innovation in the agro-food sector will require mentors to support the identified key areas of soft skills such as problem solving, analytical skills, creativity, team work and communications skills. Some key areas identified as needed for managers include, planning and organising and people management (Anderson, Jack & Connolly, 2014).



Also to be considered as relevant are the key business factors determining skills needs into the future, namely for managers. New technology and equipment, expansion of operations, new products and services, new working practices and increased competitive pressure were identified as the key areas in driving skills needs in the future (Anderson, Jack & Connolly, 2014).

V. Definition of sectorial skill card elements

Based on the sector descriptions the responsible partners compile a maximum 1 page sectorial skill/competency cards for mentors - as a complementary element (supplement) to the revised TRUST ME skill card

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Vertical Issue: CONSTRUCTION

I. Brief overview of the sector

The economic weight of the sector

The construction industry is very important to the EU economy. The sector provides 18 million direct jobs and contributes to about 9% of the EU's GDP. It also creates new jobs, drives economic growth, and provides solutions for social, climate and energy challenges. The goal of the European Commission is to help the sector become more competitive, resource efficient and sustainable. (https://ec.europa.eu/growth/sectors/construction_pl)

Until the end of 2006 construction output in Europe had increased rather steadily and economic and financial crisis output began to decline quite dramatically. Between spring 2008 and early 2013 the level of total construction in the Europe had been on a more or less constant decline (apart from a short peak in summer 2010). In total the index lost more than 30 percentage points. During the following year (between April 2013 and April 2014) construction production recovered somewhat and increased by around 6 percentage points. Nevertheless, production only reached a level of around 80 % of the pre-crisis peak. Since then the production in construction has increased only very slowly (Figure 1).

Figure 1. Construction industry growth



Source: [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:EU-28, EA-19 Construction output, m, sa, 2005-2016.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:EU-28,_EA-19_Construction_output,_m,_sa,_2005-2016.png)



The construction sector in the Europe accounts for more than 5% of the value added (gross). Although the relative share of construction in Europe's economic activity has decreased

in recent years, construction remains important for European economies. Therefore, construction output indicators are an important tool for the European Central Bank and national central banks to monitor and analyze economic developments.

Production in construction is one of the so-called [Principal European Economic Indicators \(PEEI\)](#) that serve to monitor and guide economic policy in the EU and the euro area.

Employment

Civil engineering [enterprises employed](#) 1.63 million persons, equivalent to 1.2 % of the total number of persons employed in the [non-financial business economy](#) (Sections B to J and L to N and Division 95) and 12.1 % of the [construction](#) (Section F) workforce. These enterprises generated EUR 72.2 billion of [value added](#) which was also 1.2 % of the non-financial business economy total, while equating to 14.6 % of the construction total. For comparison, the number of civil engineering enterprises was a little more than one tenth of the number of enterprises within the population for the [construction of buildings sector](#) (Division 41), whereas employment and value added shares were more than two fifths, indicating that the average size of civil engineering enterprises was much greater than that of enterprises classified to the construction of buildings.

The largest civil engineering sector within the EU-27 in 2010 was in the United Kingdom, both in terms of employment and value added, with a 13.2 % share of EU-27 employment and a 20.0 % share of EU-27 value added. The next largest Member States, in value added terms, were France and Germany, both with more than 10 % of EU-27 value added. The 0.4 % contribution of Cyprus to EU-27 value added in this sector was the third highest share in 2010 by Cyprus among all of the non-financial business economy NACE divisions. Croatia's value added in this sector was equivalent to 1.2 % of the EU-27 total, the second highest such ratio for Croatia in 2010.



Table 1.: Key indicators

	Value
Main indicators	
Number of enterprises (thousands)	101.5
Number of persons employed (thousands)	1 630
Turnover (EUR million)	255 000
Purchases of goods and services (EUR million)	191 000
Personnel costs (EUR million)	51 900
Value added (EUR million)	72 200
Gross operating surplus (EUR million)	20 300
Share in non-financial business economy total (%)	
Number of enterprises	0.5
Number of persons employed	1.2
Value added	1.2
Derived indicators	
Apparent labour productivity (EUR thousand per head)	44.3
Average personnel costs (EUR thousand per head)	33.4
Wage-adjusted labour productivity (%)	133.0
Gross operating rate (%)	8.0

Source: [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Key_indicators_civil_engineering \(NACE Division 42\), EU-27, 2010.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Key_indicators_civil_engineering_(NACE_Division_42)_EU-27_2010.png)

Sectoral Analysis

In the case of sector analysis, it is easier to use indicators related to the development of infrastructure and all data related to the development of construction enterprises.

The construction of roads and railways was the largest civil engineering subsector in the EU, accounting for approximately half of sectoral employment and value added in 2010. The construction of other civil engineering projects was somewhat larger than the construction of utility projects in value added terms.

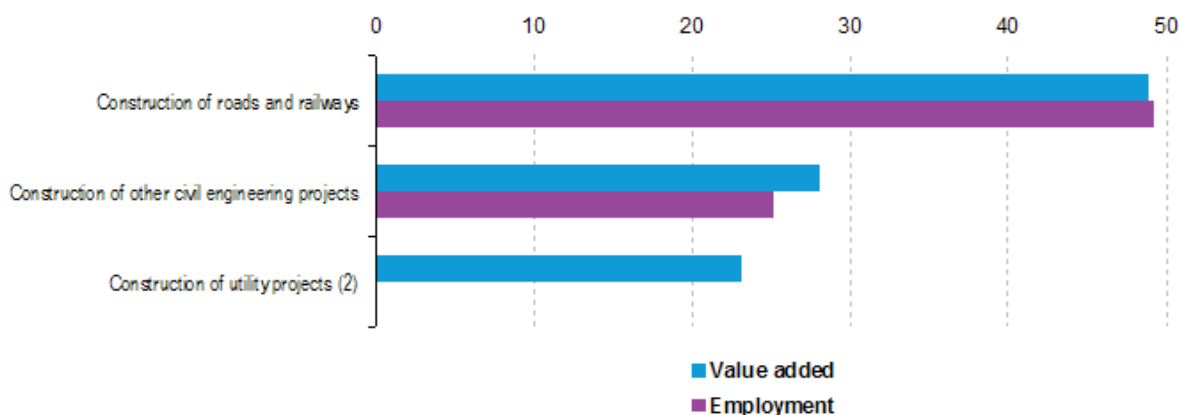
This situation is presented at Figure 2.

Figure 2. Sectoral analysis of civil engineering





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(1) Ranked on value added.

(2) Employment, not available.

Source: Eurostat (online data code: sbs_na_con_r2)

Source: [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Sectoral analysis of civil engineering \(NACE Division 42\), EU-27, 2010 \(1\) \(%25 share of sectoral total\).png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Sectoral_analysis_of_civil_engineering_(NACE_Division_42),_EU-27,_2010_(1)_(%25_share_of_sectoral_total).png)

An extremely important issue when considering specific sectors is the level of employment and the analysis of the development of productivity and operations of enterprises.

The following tables show the most important data and indices regarding employment and efficiency of enterprises in terms of companies' income in particular countries. It is worth paying attention to the productivity of work, which directly translates into wages and employee satisfaction. The charts below illustrate this well.



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Key indicators, construction of buildings

	Number of enterprises	Number of persons employed (thousands)	Turnover	Value added (EUR million)	Personnel costs	Investment in tangible goods
EU-28	843.3	3 174.3	541 443.4	140 067.4	79 698.4	32 197.7
Belgium	23.3	86.2	23 316.2	4 961.8	2 839.2	1 556.7
Bulgaria	7.1	58.3	2 342.8	443.0	247.1	263.9
Czech Republic	32.4	100.9	9 051.7	1 557.9	936.6	532.4
Denmark	3.2	26.6	7 582.0	1 674.6	1 282.4	176.5
Germany	27.2	305.7	58 915.2	16 660.7	11 663.0	1 247.5
Estonia	3.2	14.5	1 607.2	278.9	201.9	50.0
Ireland	13.1	25.4	6 194.9	1 361.7	875.8	111.3
Greece	21.6	69.1	4 416.8	1 361.4	512.3	621.9
Spain	182.6	430.1	48 729.9	12 312.3	9 169.9	2 390.3
France	63.5	174.0	74 037.2	12 910.6	9 958.3	2 528.4
Croatia	6.7	35.8	2 063.2	476.6	282.1	123.7
Italy	124.3	339.0	59 427.4	12 059.0	8 004.4	1 745.0
Cyprus	2.2	8.0	1 092.0	269.3	157.2	14.2
Latvia	3.2	25.4	1 845.7	314.9	185.8	100.7
Lithuania	3.7	44.8	2 126.8	531.7	346.5	125.9
Luxembourg	1.3	12.0	3 001.1	782.4	558.1	120.2
Hungary	13.4	54.7	4 291.8	727.1	363.7	184.1
Malta	1.2	3.4	444.8	135.6	40.4	5.8
Netherlands	63.2	126.1	29 410.2	7 315.3	4 504.4	383.3
Austria	4.3	59.5	11 984.8	3 865.3	2 759.3	202.4
Poland	53.3	250.2	25 106.1	4 726.5	2 164.1	1 489.4
Portugal	38.3	135.8	7 510.9	1 807.0	1 561.8	420.7
Romania	24.1	169.3	7 357.6	2 132.6	731.3	1 248.6
Slovenia	2.9	13.7	1 362.9	289.6	196.3	24.6
Slovakia	10.4	32.6	2 351.8	365.1	285.2	99.4
Finland	18.1	71.2	13 032.9	3 255.5	2 365.5	205.1
Sweden	21.7	96.9	23 934.7	5 471.4	4 513.3	323.0
United Kingdom	73.9	405.1	108 905.1	42 019.4	12 992.4	15 902.7
Norway	23.1	80.8	27 577.1	6 934.1	4 567.4	1 194.8
Switzerland	3.5	87.8	21 214.8	8 138.1	6 875.4	798.2

Source: Eurostat (online data code: sbs_na_con_r2)

	Apparent labour productivity (EUR thousand per head)	Average personnel costs	Wage-adjusted labour productivity	Gross operating rate (%)	Investment rate
EU-28	44.0	30.8	143.0	11.2	23.0
Belgium	57.6	48.4	118.9	9.1	31.4
Bulgaria	7.6	4.5	167.5	8.4	59.6
Czech Republic	15.4	12.9	119.9	6.9	34.2
Denmark	63.1	51.3	122.9	5.2	10.5
Germany	54.5	40.3	135.1	8.5	7.5
Estonia	19.2	14.4	133.4	4.8	17.9
Ireland	53.7	45.5	118.0	8.0	8.2
Greece	19.7	12.6	156.2	19.2	45.7
Spain	28.6	32.6	87.8	6.4	19.4
France	74.2	59.7	124.3	4.0	19.6
Croatia	13.3	8.6	154.7	9.3	26.0
Italy	35.6	35.1	101.3	6.8	14.5
Cyprus	33.7	20.0	168.1	10.3	5.3
Latvia	12.4	7.6	164.0	7.0	32.0
Lithuania	11.9	7.8	152.8	8.7	23.7
Luxembourg	65.0	46.8	138.8	7.5	15.4
Hungary	13.3	7.4	178.5	8.5	25.3
Malta	39.7	14.8	267.3	21.4	4.3
Netherlands	58.0	56.2	103.2	9.6	5.2
Austria	64.9	48.1	135.1	9.2	5.2
Poland	18.9	11.2	169.0	10.2	31.5
Portugal	13.3	13.7	97.0	3.3	23.3
Romania	12.6	4.5	282.5	19.0	58.6
Slovenia	21.2	15.8	134.1	6.9	8.5
Slovakia	11.2	11.5	97.7	4.0	27.2
Finland	45.7	39.8	114.8	7.0	6.3
Sweden	56.5	56.6	99.8	4.0	5.9
United Kingdom	103.7	34.2	302.9	26.7	37.8
Norway	85.8	62.5	137.3	8.6	17.2
Switzerland	92.7	;	;	6.0	9.8

(;) not available

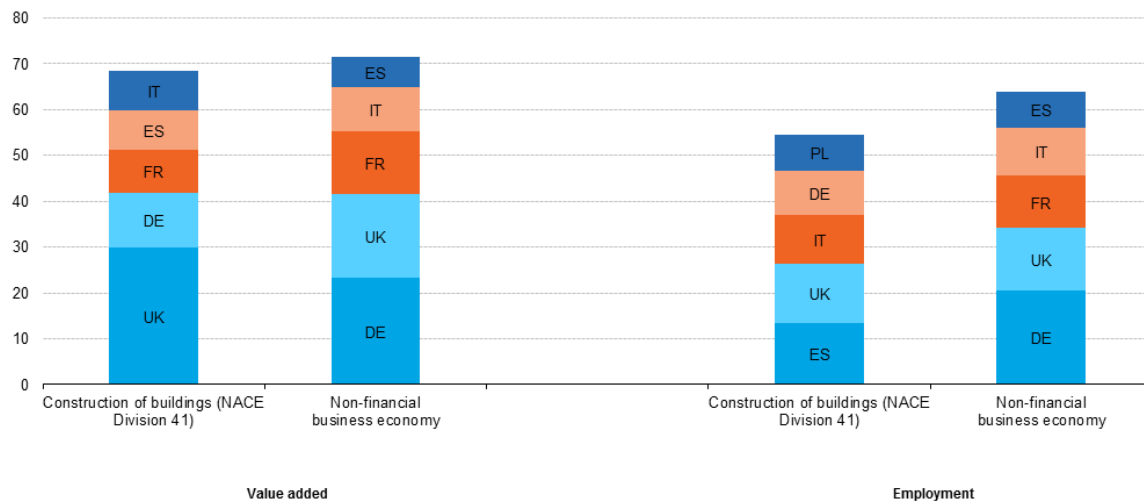
Source: Eurostat (online data code: sbs_na_con_r2)



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Concentration of employment, construction of buildings



Source: Eurostat (online data code: sbs_na_con_r2)

Europe Strategy

The construction sector has been hit particularly hard by the financial and economic crisis. The main challenges facing construction are:

- Stimulating demand: Efficiency improvements in existing buildings and renovations have the highest potential to stimulate demand.
- Training: Improving specialised training and making the sector more attractive, in particular for blue-collar workers, technical colleges and universities.
- Innovation: More active uptake of new technologies.
- Energy efficiency and climate change: Buildings account for the largest share of total EU final energy consumption (40%) and produce about 35% of all greenhouse emissions.

(https://ec.europa.eu/growth/sectors/construction_pl)

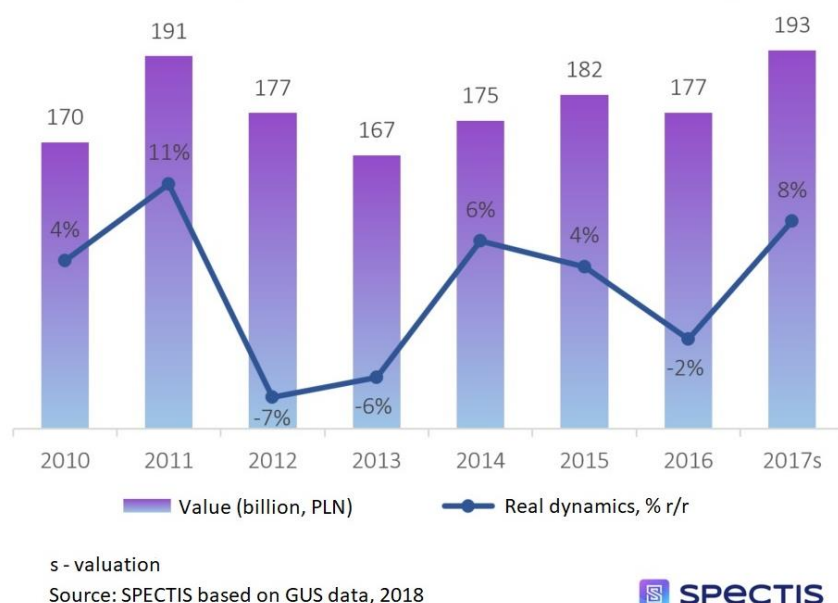
Within this context, a European Council meeting in Nice in 2000, reached an agreement on a set of common objectives for the EU's strategy against poverty and social exclusion, including two objectives related to housing, namely 'to implement policies which aim to provide access for all to decent and sanitary housing, as well as basic services necessary

to live normally having regard to local circumstances (electricity, water, heating, etc.)' and 'to put in place policies which seek to prevent life crises, which can lead to situations of social exclusion, such as indebtedness, exclusion from school and becoming homeless.' This remit was extended in 2010 when the [European platform against poverty and social exclusion](#) set out a series of actions to help reduce the number of people at risk of poverty or social exclusion by at least 20 million persons by 2020.

Situation in Poland

Recently, the situation of the construction market in Poland was very different but for several years we have been observing an increase in demand for construction services. The value of the Polish construction market in 2017 reached an unnoticed value. The year 2018 is expected to bring further growth, although still average in relation to the value of GDP. (Figure 5).

Figure 5.: The value and real dynamics of the construction market in Poland, 2010-2017



These data indicate that in 2017 the total construction and assembly output of construction and non-construction entities increased in real terms by approx. 8 percent, reaching PLN 193 billion. Market data for Central and Eastern Europe are clear because these countries are experiencing economic recovery and are moving towards growth



patterns. Various analysts believe that the growth rate in this region is at least 4%, as it is increasingly investing in energy transport and production. The railway construction market is expected to reach EUR 1.5 billion in 2015. Poland, as the strongest player in Central and Eastern Europe, is responsible for 60% of construction production in the region. Despite the upward trend, the contribution of the construction sector to the Polish economy is much lower than during the preparations for Euro 2012. In the years 2008-2011, the value of the construction market in relation to GDP fluctuated around 12 percent. Meanwhile, in 2016-2017, this share was less than 10 percent. The latest Euroconstruct projections have been tempered in outlook to just under 2% growth in 2015, with maybe slightly over 2% growth in 2016 and 2017.

Specialists say that a positive trend has been visible in the construction market for several months. The number of dwellings completed has been increasing, and additional investments have been launched, using funds from European programs. According to the latest available data in the US, an average of 2.4 people live per person, and only slightly worse (2.2 rooms per person) is in Belgium and New Zealand. Poland with the index of 1.4 is below the European average, which is 1.6 rooms per head.

However, Poland is systematically chasing the West from year to year. In the last ten years (2005-2015) this rate has increased in Poland from 1.23 to 1.40. What distinguishes Poland from other European countries is a much larger share of new construction in the national investment perspective, while in Western Europe the repairs of already existing buildings have a much larger share.

(Source: <http://www.euroconstruct.org/ec>)

Polish trends and challenges

Poland, like many EU countries, has many interesting ideas and initiatives related to civil engineering. The idea of ecological construction comes to the front, in which Poland is leading the way if it is about certification. Between March 2016 and March 2017, a 25% increase in the number of certified buildings (of all types, in all systems) was noted. This increase is very similar to the initial stages of the development of prosperous Western countries. According to the report "Certification of green buildings in Poland", prepared by the Polish Association of Ecological Building, in March last year there were 551 certified facilities in our country. This amounts to as much as 68 percent. increase compared to the same period in 2016, where the number of certified facilities was 331. This shows that the domestic eco-building market is growing systematically from year to year.



In Europe, countries such as the United Kingdom, Germany and France have a strong position, especially when it comes to BREEAM certificates. The growth dynamics is also significant here, according to which Poland records 13 percent. This is a very similar result to the initial stages of development of the aforementioned European countries.

II. Global trends and challenges

Challenges

Due to the development of various industries in the world, new problems and challenges are facing new people. As for the construction sector, as technology advances, we are able to find new solutions that significantly enrich the construction industry.

We can distinguish several elementary challenges of today's time for Europe. The main point is the business model. This issue is explained by Leo Quinn. He told that Construction companies take inordinate risk at very low margins, with ever more difficult contract conditions in an increasingly punitive legislative environment. Quinn took the audience through some recent contracts that Balfour Beatty has bid for, noting the vast differences in bid values. These illustrate a lack of rationality in the market.

He described the problems of "forced growth," in which a company continues to grow its top line, whether through acquisitions or international expansion, to stay ahead of its cost curve. This approach can lead to profit warnings when growth stops but costs continue to grow because they haven't been integrated properly. Ultimately, Quinn believes it's all about cash. Construction companies are kept in place by banks who provide credit lines and money. Indeed, this explains why the biggest construction companies in the world are Chinese - they seem to have an infinite capacity for cash.

On the other hand, McCartney described the macroeconomic picture and the upward inflationary pressures created by foreign exchange rates. Financing costs have been exceptionally low for a number of years, which has helped fuel some investment in the construction sector. But larger M&A activity has been suppressed. McCartney expressed his hope that more certainty from government policy will lead to a return in confidence and willingness to invest.

Brexit is an issue worth considering. McCartney also briefly talked about it. There are issues around project delays and cancellations in private sector real estate investment and general uncertainty for house builders. This can be tracked back to uncertain consumer confidence and much depends on what happens when the reality of Brexit becomes clear. There is clear potential for confidence to evaporate further. McCartney says that some of the other concerns and challenges for the sector. Cost inflation, and the ability of a low-



margin business to pass costs through within existing contracts is a fundamental concern. There is a need to educate buyers to procure smartly. On cash, there's a clear focus on getting smarter and transforming the industry culture so that everyone understands its importance. And there's a hope that margins will see an upswing led by increases on the demand side.

(Source: European Construction and Infrastructure Roundtable: discussion summary)

Trends

The world is going through a series of disruptive changes, which, when coupled with the economic crisis, create a significant discontinuity.

The five grand transformations may be listed alphabetically as:

- a) Automation and abundance;
- b) BRICs: Brazil, Russia, India, China, India and globalisation;
- c) Climate change and energy;
- d) Demography and ageing;
- e) E-everything, information, technology, computers, everything electronic

(Source: Turk, Žiga. "Global Challenges and the Role of Civil Engineering." In Performance-Based Seismic Engineering: Vision for an Earthquake Resilient Society, pp. 51-61. Springer Netherlands, 2014)

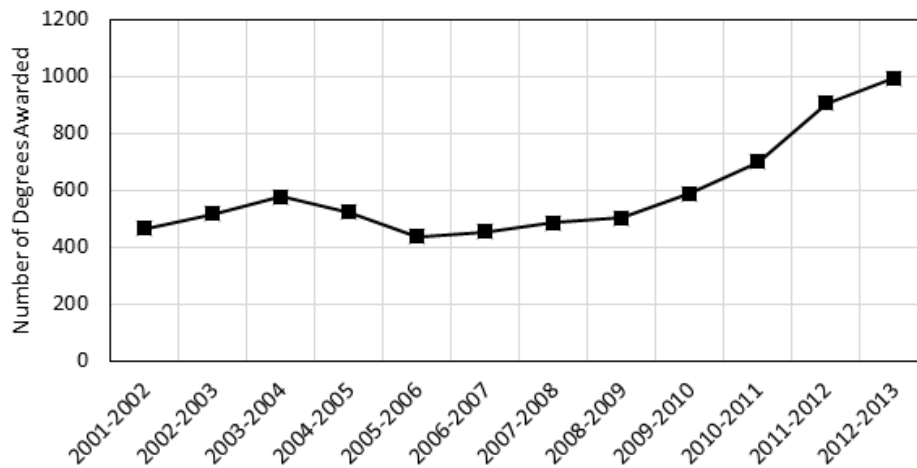
Ecological construction is becoming more and more fashionable. Already in the design phase, architects are trying to create buildings for the environment. Thanks to the increasingly stringent EU directives, it will be impossible in the future to build a building that is not environmentally friendly. From 2020, all newly constructed buildings are to be characterized by a possibly zero energy balance (they have to consume a small amount of energy, mainly from renewable sources).

This will be the effect of the EU directive on energy efficiency introduced in 2012. It imposed an obligation to reduce greenhouse gas emissions and energy consumption. It will be difficult to meet it, currently the real estate is responsible for 40% of total energy consumption in the European Union.

Environmental Engineering is one of the fastest growing engineering disciplines with an expected 15% growth rate through 2022 or 820 jobs per year. It is a young discipline (994 BS graduates in 2012-2013) that is growing exponentially (Figure 3).

Consequently, there will be a large demand for Environmental Engineers over the next decade.

Figure 3.: Environmental Engineering BS Degrees



(Source: <https://cees.nd.edu/research/environmental-engineering>)

Trump and Brexit

So far, it seems that leaving the EU structures by the United Kingdom and choosing Donald Trump as the president of the United States will have only a minor impact on the construction sector in Europe. The Dutch sector should remain indifferent to these issues. Our local experts point to potential uncertainty in the economy and financial markets caused by the above political changes - construction can indirectly feel their effects. Despite these threats, the European construction sector should use its experience of carrying out large projects and public-private partnerships to be able to benefit from the extensive infrastructure investments announced by President Trump and the British government.

(Source: <https://www2.deloitte.com/pl/pl/pages/real-estate0/articles/europejski-monitor-budowlany.html>)

Last year, the Central Office of Building Supervision issued a report on construction work in Poland. In 2015, the lowest number of building permits was granted since 2010. In turn, from the 2016 PSB Group's research, we know that the last quarter was a period of price increases for virtually all construction materials, up to 9%.



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Based on data from the Building Radar regarding all matters related to the construction market in the EU, there are some forecasts regarding the short-term growth trends in the European construction market. Analysts predict that the market will stabilize in some countries, preparing for long-term growth in the future. In other countries, markets will continue to grow steadily.

	2014 CONSTRUCTION OUTPUT	% CHANGE IN REAL TERM							
	Billion euro	2014	2015	2016	2017	2018	2019	2020	
Germany	285	2,40	1,80	0,20	-0,40	0,30	0,39	0,48	
France	200	-2,80	-0,40	1,80	1,60	1,66	2,13	2,47	
United Kingdom	177	5,20	5,10	3,50	2,40	3,12	4,21	5,10	
Italy	163	-2,20	1,10	2,50	2,80	3,72	5,18	7,20	
Spain	63	-2,40	1,80	3,60	5,00	6,50	7,93	9,04	
Netherlands	60	0,30	3,40	3,50	4,70	5,78	7,98	9,73	
Switzerland	53	0,80	-0,70	1,40	1,50	1,97	2,71	3,01	
Norway	46	2,10	3,90	2,50	2,90	3,80	3,87	5,04	
Poland	44	4,90	7,10	6,20	6,70	7,50	8,78	10,45	
Belgium	39	0,70	0,00	1,50	2,40	2,93	3,40	3,94	
Sweden	34	5,30	1,30	1,10	1,60	2,13	2,60	3,25	
Austria	32	1,70	1,00	1,30	1,50	1,91	2,63	3,52	
Finland	29	-0,20	1,50	1,70	3,20	4,10	5,20	5,41	
Denmark	27	2,50	2,90	3,50	3,70	4,26	5,49	6,48	
Czech Republic	16	1,00	2,50	3,30	4,00	4,96	5,56	7,67	
Portugal	15	-1,00	2,50	3,60	5,00	6,55	8,25	10,40	
Ireland	9	10,10	9,00	10,60	9,20	9,29	9,94	9,94	
Hungary	9	14,30	5,10	3,80	2,90	3,45	4,35	5,52	
Slovak Republic	4	-0,40	1,80	2,70	3,00	3,51	4,00	4,16	
Western Europe	1.232	1,9	2	2	2	2,70	2,97	3,12	
Eastern Europe	73	5,5	5,1	5,5	5,5	7,15	7,79	9,98	
Euroconstruct Countries	1.305	2,1	2,2	2,2	2,2	2,40	2,52	2,72	

Development of the construction output in the Euroconstruct countries



All analyzes have been devoted to various sectors of the construction industry, which should be developed in the near future. It is expected that they will grow steadily. 2015 was extremely important for the general construction sector. All data is presented below.

Total output development by market segments – % growth rate in real terms

	2013	2014	2015	2016	2017	2018	2019	2020
New Residential	-4	0,1	2,6	4,7	3,7	5,0	6,2	7,6
New Non-residential	-5,2	0,6	2,7	2,1	2,3	3,1	4,1	4,7
Building R&M	-0,3	1,4	1,6	1,1	1,4	1,8	2,2	2,6
Civil Engineering	-4,2	1,4	2,2	2,6	2,7	3,7	4,4	4,9
Total	-2,7	1	2,1	2,2	2,2	2,9	3,6	4,2

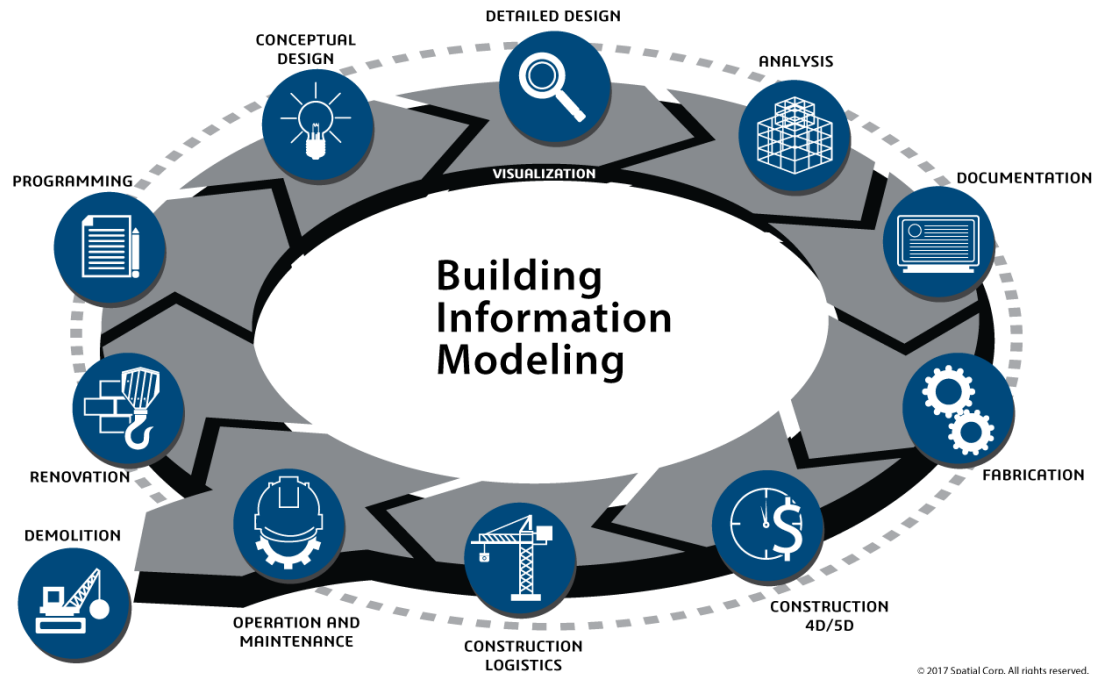
III. Best practices of answering to the challenges

In reference to the creation of a new - better business model, a lot of initiatives are created, which are designed to optimize work in the construction sector.

Automation and robotics are enabling the industry to produce more and more with less and less work. The EU can use rich cultural and ethical capital or reorient its economy towards creative economy. By combining science, innovations and creativity to create products and services that are more than what they are useful for. Maintain its world class brands and create new ones that embed our culture and values. Or it can engage in uphill struggle on price and function only.

The best way in optimization is enter BIM or Building Information Modelling technology. In short, it is the means by which everyone can understand a building or structure by the use of a digital model. In plain language, it is the virtual modelling of numerous aspects of a building, from its design and construction, to its management and life cycle, and even to its recycling and disposal systems. BIM offers something for everyone within the building industry, no matter where your involvement is within the buildings life span. The process and ideology of BIM technology is depicted in Figure 4. Many companies develop the design process by special software. The most popular software are Tekla Structures, Revit and Archicad. Statistics show that Autodesk is the most popular company that produces software for design.

Figure 4. Building Information Modeling



Source: <https://www.spatial.com/industries/building-information-modeling>

Source: <http://www.allseasonshire.eu/blog/post/introduction-to-bim/>

Source: <https://respondarchitects.co.nz/building-information-modeling-lets-call-it-bim-for-short/>

IV. Lessons for the curriculum development

Over time, it turned out that the training of managerial staff is just as important as the training of employees. For many years, on the basis of experience, efforts were made to find issues related to the development of work and optimization that would directly help the management. It is important that the most important matters for the management are:

- Managing time efficiently
- Practice basic skills, even if you do not need them anymore
- Don't be arrogant but be confident
- Understand other engineering disciplines
- Give good presentations
- Risk and reward



In practical terms, these issues are often not used for many reasons. Consequently, there are not many good specialists on the market, which directly translates into worse results. It is very common to notice the untimely performance of works that can be directly caused by the lack of effective time management. For the past few years, courses and trainings have been increasingly implemented to educate people about the proper use of time.

New methods of harmonizing and implementing BIM (Building Information Modeling) technologies improve the quality and overall condition of the construction engineer's profession. The best example of this is related to costs. A well-made construction schedule and good time management is an extremely important factor affecting the investment costs, which is extremely important for the investor.

A great initiative that would combine the above-mentioned points and positively affect the development of investment and construction process, and especially the management would be assisted by Lean Management. Generally, this is an idea that aims to optimize the work taking into account every stage needed for the construction investment process. The implementation of this system is successively developed by many enterprises. In civil engineering, it is a relatively new technology but is constantly being implemented and improved. The key idea of this technology is to involve all employees in the process of improvement and improvement. It would be better if we involve everyone in the company. One hundred percent of the crew improves the company's operation and learns how to work together more effectively. All these processes can significantly improve the quality of services provided through general optimization. There is often a management team that does not develop these skills, which causes many inconveniences.

In developing skills and arranging some kind of guidelines for people who want to be mentors in the program, knowledge about conducting business activities in the construction industry, it is absolutely essential to create basic features and mentoring issues. It is extremely important to find gaps in skills and any mismatches as soon as possible with regard to all activities related to being a leader. The SKILLCO project, which started in 2016 in Germany, Slovenia and Hungary, is a very interesting initiative on completing gaps and gaps in skills.

This project is according to FI EU press release in 2016 there were for example over 3325000 construction businesses in the EU. They supposed more than 14 368 000 jobs and contributed 1,278 billion euros to the EU's economy. Eurostat recorded the gross values that EU construction sector added in 2016 at over EUR 710,583 million.

Four key joint gaps can be distinguished, which must be eliminated. First, it is necessary to collect data and carry out any theoretical analysis. Then, practical analyzes are carried





out, often with the participation of students. These activities lead to establishing real goals that can be achieved. Another important element is the development of craft skills such as skillful communication, work safety and green skills. This is closely related to the use of soft skills that are often lacking in older employees. All this leads to the creation of auxiliary materials such as literacy, occupational Safety and Healthy, Green Skills and Numeracy. All these activities would not work well were it not for calculating costs using expenditure forecasts in construction. It is very important to use measures to prevent pain and muscle and bone injuries.

Source: <http://www.fiec.eu/en/news/news-2018/skillco-project-skills-gaps-and-mismatches-in-construction.aspx>



Vertical Issue: TOURISM

I. Brief overview

Tourism all over the world has its multiplication effect for the economy. It creates jobs, economic growth and has many opportunities for communities all around the world in case the needs of travellers are managed professionally (World Tourism Barometer, 2017 p. 5) UNWTO 2017).

Since the economic crisis the tourism had grown all over the world and in 2017 the International tourist arrival reached 616 million in Europe giving 50 % of world international tourists arrivals and provided 10 % of the GDP worldwide and Central Eastern Europe had grown 2.6 % average since 1990 and France continues to be the most visited destination with 82.6 million tourist arrivals (UNWTO 2017).

Tourism sector in Hungary

*„There are places, the mere mention of which is enough
to inspire wanderlust in our hearts.”
Hans Christian Andersen*

In Hungary tourism like all over the world plays important role in the economy. The tourism industry players in Hungary had drawn the attention of the government about the importance of the sector in 1996 when the first open parliament days were organized. Since that time the tourism is more appreciated and it is communicated as a strategic sector by the government too.

International tourism arrivals and guest nights had grown significantly by 2016. Should we take a look on figures of visitors the growth is even more due to the favourable geographical location of Hungary. The length of the borders of Hungary totals 2238 km. Hungary's borders with: Austria (359 km), Slovakia (667 km), Ukraine (144 km), Romania (437 km), Slovenia (99 km), Croatia 348 km), Serbia (174 km). See figure No.1

Location of Hungary and distance of the capital Budapest in Europe

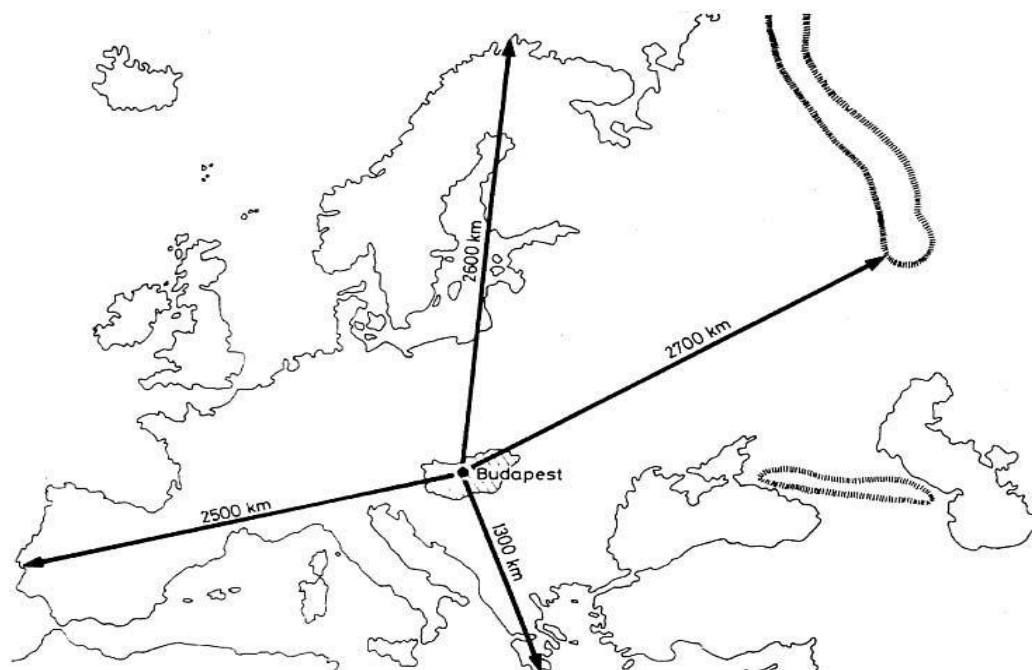


Figure No. 1

Source: www.mek.oszk.hu

Arrivals/Spending/Commercial accommodation/Hungarians' main outbound destinations

International tourism arrivals

Number of tourist arrivals (000s) and change (%)

2010	2014	% 2014/2010	2015	% 2015/2014	2016	% 2016/2014
9,510	12,139	27.6	14,316	17.9	15,256	6.5

Figure No. 2

Source: UNWTO 2017



30 % of the tourist – 4.6 million - arriving to Hungary in 2016 used commercial type of accommodation (UNWTO 2017), meantime the total number of guests in the commercial type of accommodation was 11.11 million meaning 6.51 million guests for the domestic tourism.

EUR 49.53/day/tourist² is the average spending of inbound tourism. 2.4 guest-nights is the average length of stay spent in Hungary by the foreigners, meantime it is 2.6 guest-nights for 2016 the total, including the domestic tourists (Hungarian Tourism Agency 2016).

FOREIGN CURRENCY BALANCE OF INTERNATIONAL TRAVEL

	2015	2016	2016/2015
Revenue (EUR million)	4 798	5 109	+6.5%
Expenditure (EUR million)	1 650	1 94	+18.4%
Balance (EUR million)	3 148	3 155	+0.2%

Table No. 1

Source: Hungarian Tourism Agency 2016

Main sending markets of Hungary

The main sending markets in 2016 commercial accommodation in ranking order: Germany, United Kingdom, Austria, Czech Republic, Poland, Italy, USA, Romania, Russia, Slovakia (Central Statistical Office of Hungary).

Traditionally Germany and Austria always represented by appr. 60 %. As of the tourists taking advantage of the services of the travel agencies is not more than 10 %. The foreigners always spend more guest nights in Budapest and its region than in the countryside. There were years when the proportion was around 70 % but in 2016 it was 61.6 %, which means that the countryside was also visited. It should be mentioned that the

² EUR= HUF 311 as an average in 2016 without figure of visiting friends and relatives (www.arany-arfolyam.hu)



experts of tourism in Hungary always noted that the visitors/tourist do not spend overnights in the countryside and at the moment the data of 2015 and 2016 prove a favourable change.

Hungarians travelling abroad

In 2016 the Hungarians³ made 18.9 million travels abroad. It is 9.4 % more than a year before, 11.8 million travels were one-day travel and 6.3 million travels were more than one-day. 10.2 million travels had tourism motivation with a 5.8 days average length of stay.

Main destinations of the Hungarians in rank order:, Germany, Austria, Romania, Slovakia, Czech Republic, Croatia, Italy, Serbia, Greece, Ukraine (Hungarian Travel Agency 2017).

Only 638,000 Hungarians used the services of a Hungarian travel agency. Main destinations a using travel agency: Greece, Italy, Austria, Croatia, Turkey.

Domestic tourism

According to the figures of the Central Statistical Office (2016) 5.8 million Hungarians (National Tourism Dev. Strategy 2030) spent over 13,827,408 guest nights (55.1 % of the total guest nights of Hungary) in the 10 most popular cities of the country. The first 3 most popular cities are: Budapest, Heviz, Hajdusoboszló.

Most important motivation of the Hungarians participating in domestic tourism: VFR, (44.9 %) holiday, entertainment (42.3 %).

Balaton is the most important popular touristic region regarding spending overnights. The overall average is 4.1 guest-nights.

It should be noted that the Szechenyi Card as paying method plays important role in the Hungarian domestic travel.

³ Population of Hungary: 9.8 million



Szechenyi Holiday Card⁴

Szechenyi Holiday Card is introduced by the government in 2011 changing the Holiday Cheque. The aim is the same i.e. incentivize the Hungarians for domestic travel i.e.: spending overnights, eating out in a restaurant, participating on a programme etc. Therefore the Szechenyi Holiday Card has several subaccounts to which companies might give the cafeteria. Hungarian companies pay a considerable cafeteria amount for the Szechenyi Holiday Card of their employees i.e. instead of paying salary companies pay cafeteria, and the employee can spend and only spend it for the given purpose i.e. pay with it (no cash withdrawal) from the subaccount as a bank card.

The amount paid by the employer for the Szechenyi Holiday Card as cafeteria element has more favorable taxation than paying salary. Note: After the salary paid to the employee companies have to pay 21 % tax to the government.

Example

In case a company pays HUF 200,000/year to the Szechenyi Holiday Card of the employee saves HUF 91,780 i.e. EUR 306.

Contribution of tourism to GDP and employment

The contribution of tourism to the GDP is about 4-5 % however the OECD published that direct contribution is 5.8 % and 8.4 % is the total tourism of employment for 2008 (OECD 2015).

Looking at the figures published by the World Travel and Tourism Council (WTTC) the contribution to the GDP is around 4 % every year and by 2026 it is forecasted to grow by 5 % (WTTC 2016). See Table No. 3. The author notes that in the Hungarian tourism periodicals/papers the contribution is mentioned up to 8 % and together with the indirect contribution up to 10-11 %.

⁴ 55/2011. (IV. 12.) Governmental Act about how to use the Szechenyi Card



Contribution of tourism to GDP



Figure No. 3

Source: WTTC (2016)

Contribution to employment

Looking at the figures of WTTC (2016) in the total employment tourism represents 6 %. See Table No.4 and also Table No. 5.

Contribution of tourism to the employment

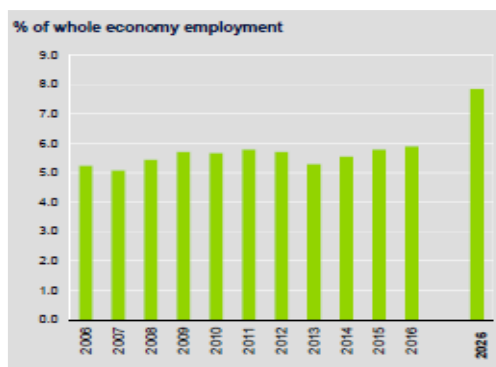


Figure No. 4

Source: WTTC (2016)

Should we have a look to the latest publication of the Hungarian Travel Agency in 2017 about the same figures referring to the Tourism Satellit Account 2013 9.8 % is the contribution to the GDP and 12 % is contribution to the employment with 346,000 persons. See Table No. 5



Contribution to the GDP and employment

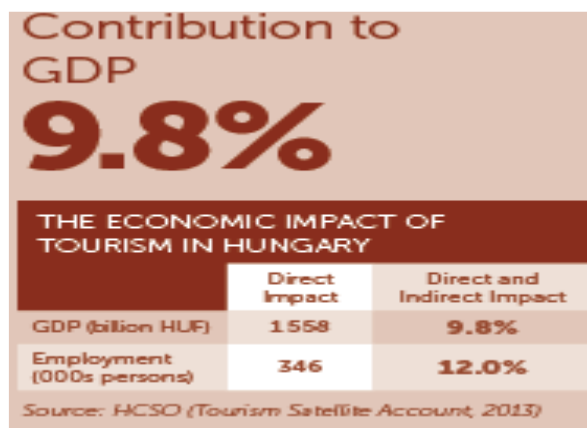


Table No. 2

Source: Hungarian Tourism Agency (2017)

National Tourism Development Strategy 2030

In 2017 National Tourism Development Strategy 2030 was accepted and published. The strategy emphasizes the importance of tourism and that the conclusion and evaluation of the previous development strategy for the period 2005-2013 was taken into consideration and the following strategic priorities were concluded:

1. Tourism together

Tourism with the local communities and the nature.

2. Family friendly tourism

Developing tourism attractions taking into consideration family friendly criteria.

3. Accessible tourism

Physical and info communication accessibility to develop accessible destinations.

4. Understandable tourism

Multilinguistic information.

5. Digital tourism

Taking advantage of digital technologies.



The CLVI. Law of 2016 emphasizes the focus is on the regions and declares that the destinations is the key to success.

The strategy also deals with the integral tourism policy declaring that the Hungarian Tourism Agency is the top institution of the tourism. At the same time the strategy allocates domestic and EU resources too.

The Hungarian Tourism Agency's role:

- 1 To inform about the results of the industry
- 2 To promote the tourism i.e. to promote Hungary as a destination
- 3 To take part in working out the tourism related plans on all levels
- 4 To evaluate the tourism related processes in Hungary and also worldwide
- 5 To work out quality assurances, brands

Hungary has a considerable high amount of thermal springs appr. 2,500 as the country lay over a huge thermal water basin and the big number of springs is qualified to be medical. Therefore the National Development Strategy 2030 pays significant role to the thermal springs and services that can be provided in connection with it. Please note that Hungary paid a huge attention to the thermal water and services to be developed already in 2000 with the Szechenyi Program⁵.

Travel Agencies in Hungary

Travel agency activity – tour operation and travel agent – is regulated by laws, and governmental acts. The main directive is 213/1996 (XII.28) and its modifications. The relevant directive meets the requirements of the 90/314/EEC Council Directive.

"In November 2015, the EU adopted a revision of the Package Travel Directive. The new Directive must be implemented by Member States before 1st January 2018 and will apply from 1st July 2018" (www.ecta.org 2018).

In accordance with this the Hungarian government in December 2017 passed the modification of the relevant legal act to become in force July, 2018.

⁵ Istvan Szechenyi was a rich count in the 19th century playing important role in the economic development of Hungary, ensuring financial resources for the Academy of Science and also building the 1st bridge – Chain Bridge – over the Danube. He is known as the Greatest Hungarian too. (The author)



Number of travel agencies –tour operator and travel agency - in Hungary in the last decade always was 1200-1500. In January 2017 their number was 1052. 246 was registered only for agent activity and 806 registered tour operation.

In Hungary only a registered company might carry out tourism activity and in accordance with the 213/1996 Governmental Act and its modifications for outbound activity must employ min. one person with tourism qualification (diploma, language skill etc.).

At the same time tour operators of outbound activity in order to meet the customer protection requirements must have financial deposit too. Min. financial deposit is HUF 5 million or 12 % of the net sales volume. In case of operating charter flight the min. deposit is HUF 20 million or 20 % of the net sales volume.

Tour operators of domestic travel also must have a min. financial deposit of HUF 0.5 million or 3 % of the net sales volume.



TOURISM WORLDWIDE AND IN EUROPE

„Yet, tourism, a sector accounting for 10% of world GDP, 7% of global trade and one in 10 jobs, can contribute to all 17 Goals.” – stated in the Global Report 2016 of UNWTO.

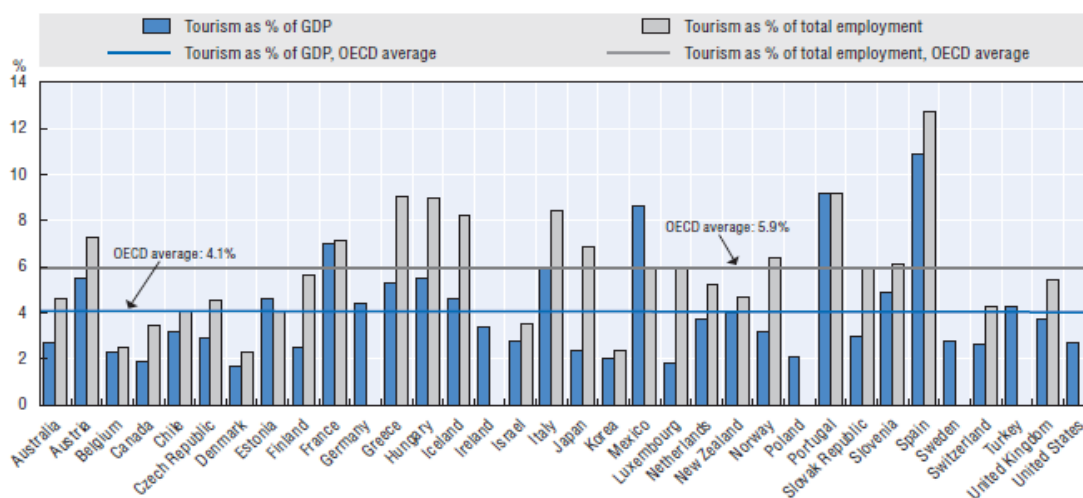
In the last 7 years tourism had grown above the average appr. 4 % annually. In 2016 the international tourists arrival reached 1,235 million providing 10 % of the GDP and 7 % of world's export (UNWTO 2016).

„Tourism continues to demonstrate its key role in generating economic activity, employment and export revenues in the OECD area, where it directly contributes, on average, 4.1% of GDP, 5.9% of employment and 21.3% of service exports.”

Figure No. 6 clearly shows the importance of tourism in the OECD countries and its role in the economy.

Figure 1.1. Direct contribution of tourism to OECD countries

As percentage of GDP and employment, 2014 or latest year available



Notes: Data for Spain include indirect impacts.
GDP data for France refer to internal tourism consumption.
Employment data for Luxembourg include indirect impacts.
Source: OECD Tourism Statistics (Database).


StatLink  <http://dx.doi.org/10.1787/888933319595>

Figure: No.5

Source: OECD, 2016

Europe traditionally has 50 % of the total tourists arrival. In 2016 it was in accordance with the previous years, Europe had 615 million tourists arrivals. See figure No.6.

As tourism plays such an important role in the economy and in the EU SMEs have their big role and weight in the economy, plus EU is supporting SMEs " The European Commission has implemented several actions to boost the competitiveness of small businesses in the European tourism sector, integrate them into global digital value chains, and improve their ability to create more jobs." (OECD 2016)



Figure No.6

Source: UNWTO 2016

France always had been the mostly preferred, visited country and the 2016 figures show the same. See figure No. 7.



Figure: No. 7

Source: UNWTO 2016

Another important indicator of the tourism how much money is spent, and which nation is the best tourist ie. spending more. In this case the Chinese are the best ones. Almost for each country visited by them they are the leaders of the chart of the spenders.



Figure No. 8

Source: UNWTO 2016

New Trends of travellers

TripBarometer carried out a research in 2016 with a 44000 sample to learn about the travel trends.

International forecasts and the eTurboNews named several trends (Marffy 2018). These trends were published in Turizmus.com (2018 January-February page 10-13).

The most important four trends of the researches are as follows:

1. Women travelling alone will grow

It is a tendency that the women are more reluctant to experience something new and this is the reason why there is a big growing potential in this group. It is noticeable that the number of women grows among the participants of the active tourism. Their proportion 60%.

2. Preference of travel giving experience

Getting experience is not a new trend – it is a motivation for travelling that can be noticed for several years. People's motivation for travelling is to get experience is more important than just to see a monument.



"Nowadays specially the younger generation goes to see and participate on festivals, to speak to locals, to understand their everyday life. This is the reason why Airbnb is very popular."

Euromonitor International phrased this as " Pooling Resources is Becoming Integral to Urban Living".

3. New destinations i.e. destination making a step forward

There are several destinations that were in the very first places but the travelers are always looking for something new.

Some destinations like China, Japan, and several countries in Africa were not among those destinations that were targeted among the first ones. These destinations became and are becoming more and popular as a result of the transport development. The development of the air transportation made these destinations more accessible, so transportation development results in making the far away destinations popular.

4. Strengthening of the sustainable tourism

Sustainable tourism is to see cultural heritage sights and also to support the cultural heritage.

Just one good example for this: in Budapest the biggest synagogue of Europe is visited 90 % not by Jewish people. Visitors paying the entrance fee (EUR 13) might choose a 30-40 minutes guided tour on several language and can visit the Jewish Museum too.

And there is a revolution in the technology too. The Online Cross-Border Purchases Booming people's attachment to their smartphones, phablets and tablets is increasing. (Euromonitor 2016). People would like to be permanently connected i.e. connected to the internet. Therefore WIFI is looked for during travel on trains, coaches etc.

These trends are in line with the TripBarometer conclusions too. TripBarometer made a research in 2016 with a 44000 sample.

Hospitality sector in the EU

Importance of the sector

The hospitality sector makes a major contribution to the European economy. The hospitality sector supported approximately 18M jobs, or one out of every 13 jobs in



Europe. The sector contributed almost €126bn to government treasuries in excise duties, Value Added Tax (VAT) and employment and social security taxes. The sector is very responsive to economic conditions, supporting job creation and economic growth in the good times, but also vulnerable to revenue raising policy measures in a downturn. With €1.16 additional demand generated in the wider economy for every €1 spent in the sector, supportive policy measures are likely to result in positive outcomes for the economy as a whole. These are likely to support not only economic, but social objectives, providing work for young and first time labour market entrants and those returning to the job market. Measures adopted in times of austerity, which increase tax rates at a time when disposable incomes are falling, are likely to undermine the ability of the sector to generate growth. The short-term response to this is likely to be cost cutting measures, and later, a loss in permanent capacity.

Latest statistics

Following an increase of 4.2 % in 2015, the number of nights spent in tourist accommodation in the EU continued to grow in 2016, by 3.0 %, reaching nearly 2.9 billion nights.

More than two out of three of these nights were spent in five Member States: Spain (16 %), France (14 %), Italy (14 %), Germany (14 %) and the United Kingdom (10 %).

Looking at the distribution by type of accommodation, hotels and similar accommodation were clearly the most popular (65 %), followed by holiday and other short-stay accommodation such as rented apartments (22 %) and camping grounds, recreational vehicle parks and trailer parks (13 %). However, there were significant regional differences: in Cyprus and Malta, hotels covered almost the entire market for rented accommodation; in Denmark, Luxembourg, France and Sweden the market share of campsites was more than double the average for the whole of the EU.

All three types of tourist accommodation showed increases for 2016. The number of nights spent in hotels increased by 3.5 %. Nights spent in holiday and other short-stay accommodation and nights spent at campsites increased by 3.5 % and 0.1 % respectively.

The increase at EU level reflected national developments. In only four Member States - the United Kingdom, Belgium, France and Luxembourg - did the rate decrease in 2016. Bulgaria, Cyprus, Slovakia, Poland and Portugal recorded growth of over 10.0 %.



Employment

In terms of direct support for EU socio-economic aims, the hospitality sector is the largest employer of migrant labour in Europe. It also offers many groups, who can find labour market participation difficult (parents, students, rural workers, those with caring responsibilities) a flexible approach to working that can enable them to take a job whilst also pursuing other activities or meeting care responsibilities. This enables greater labour mobility and higher participation, contributing to a more flexible and responsive labour market that can adjust quickly to changing economic conditions.

Great problem is that the average income of employees in the accommodation and catering sector still remains lower than the overall average. On the other hand, more than one third of tourism accommodation employees have a lower level of education. The general level of education remains lower in hospitality sector than in the whole EU27 economy. The majority of employees in hotels and restaurants have a level of education that corresponds to "lower secondary" or "upper secondary" and this group is larger than in the overall workforce of the EU27. Due to the good mobility possibilities these employees move easily from one place, even from one country, to another. Nowadays one of the major tasks of hotel managers is to find qualified employees and keep them for longer periods.

Qualification

In many European countries the education system is not adequate enough to provide a qualified workforce in hospitality industry. The need for more qualified staff in the sector has been identified in such countries as Austria, Slovenia, Poland, Czech Republic, Hungary, Lithuania, Slovakia and Cyprus. As a consequence, social partners sitting on the industrial committee for vocational training in hotels and restaurants have introduced more innovative skills to training courses: IT knowledge for all levels of employees, leadership/management skills, food and health, tourism/hospitality knowledge, and last but not least social skills such as different languages.

One of the most important topics for the new hospitality era is unfortunately forgotten by many employers: the need for tourism employees to learn guest service skills and the culture to serve. Training is critical to ensuring quality service and meeting these objectives. The need for this kind of training is serious and urgent, because the international guests have multi-cultural background: from diverse cultures, religions and ethnicities. Otherwise, they will be unsatisfied guests.



Quality

Quality guest service is an experience of feeling valued or heard. It is the most important competitive advantage of tourist business, “the key to competitiveness”. And it’s a critical factor for tourism success, both as a mean of satisfying ever-increasing customer expectations, and as a way to achieve business profitability. In fact, service quality represents the gap between the expected service and the actual perceived service. The high service quality includes not only the professional skills and experience. Moreover, the quality of services doesn’t depend only on the brand name, location or facilities. It includes the employee’s manners, attitude, behaviour and professional etiquette, their respect to the guest etc. The personal relationships between employees and guests must be authentic and showing gratitude!

Sustainability

Global trends and priorities change – more than ever the overarching challenge for the tourism sector is to remain competitive while also embracing sustainability recognising that, in the long term, competitiveness depends on sustainability. In particular, climate change is now seen as a fundamental issue also requiring the tourism industry to reduce its contribution to greenhouse gas emissions and the destinations to adapt to changes in the pattern of demand and in the types of tourism they offer. The future of European tourism relies on the quality of the tourist experience – tourists will recognise that places that care for the environment, their employees and local communities are also more likely to care for them. By integrating sustainability concerns into their activities, tourism stakeholders will thus protect the competitive advantages that make Europe the most attractive tourist destination in the world – its intrinsic diversity, its variety of landscapes and cultures. In addition, addressing sustainability concerns in a socially responsible manner will help the tourism industry to innovate its products and services and increase their quality and value.

What to do in the hospitality sector

The fact is that there are still strong structural differences by regions of the EU and regulations are also quite different. Therefore it is quite difficult to set general programs on the economical field that is valid for each country within the EU. We rather should focus on the above mentioned two directions. One is the qualification, skills and behaviour of the employees (and their trainings by employers) and the other is the behaviour along sustainability.



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Vertical Issue: FINTECH

I. Brief overview of the sector

Financial technology (FinTech) has emerged as a new sector in the economic landscape. The term FinTech is mainly used to refer to firms that use technology-based systems either to provide financial services and products directly, or to try to make the financial system more efficient. Examples include robotic trading, cashless payments, crowdfunding platforms, robo-advice, and virtual currencies (EP, 2017). The sector is sometimes classified as (a) 'traditional' - where mainly large technology firms support incremental innovation and efficiency savings in the financial services sector and (b) 'emergent' - where small innovative firms disrupt incumbent financial services firms providing radical breakthroughs that create new markets using new technologies. Both forms are seen to enhance the competitiveness of the EU economy (EC, 2017).

FinTech is often closely aligned with banking sectors in the economy in areas such as payments, credit, lending, retail investments, pensions, investment management and capital markets. However, similar technology advancements are occurring in related sectors of the economy. For example, the insurance sector (sometimes referred to as InsurTech) and the regulatory sector (RegTech) are differentiated although they are often deemed to fall under wider definitions of FinTech (EC, 2017).

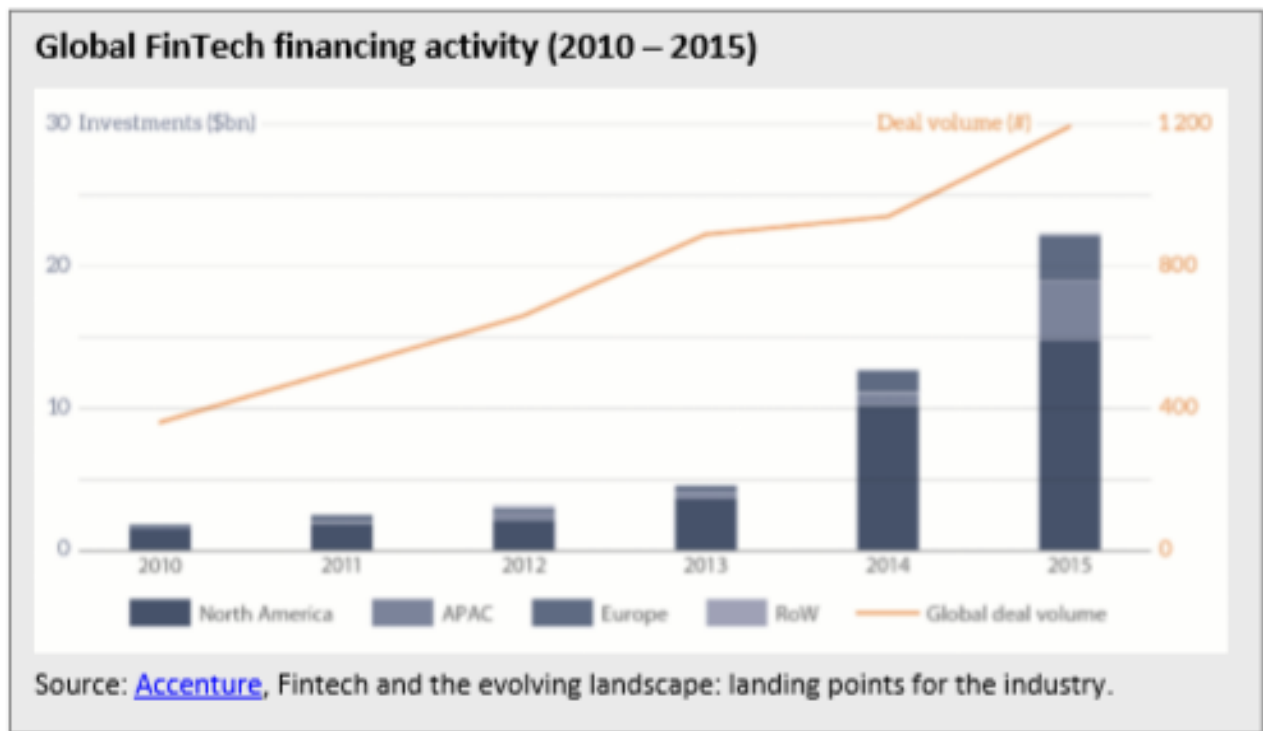
An initial search for data on the economic weight of the sector suggests relatively few timely and authoritative sources. In 2015, management consultants estimated that the Financial Services industry as a whole provides €731 billion or 5.9% of the EU's total GVA, employment for 6.4 million people across Europe and contributes almost €209 billion in taxes across the largest European economies (PWC, 2015)

The European Banking Federation representing over 32 national banking associations and 3,500 banks in Europe suggests that the FinTech sector employs about two million people. These banks include large and small organisations in a range of subsectors including wholesale and retail, local and international. The majority of banks are investing in related technologies – 92% in blockchain technology and 62% in financial services software and regulatory technology for example (EFB, 2017).

In a study for the UK government, researchers estimated that 25% of global FinTech projects in the last five years were in Europe, with half of these in London generating an estimated £20bn in the UK alone (GOS, 2015). More conservative estimates suggest that the sector generates £6.6bn (in 2015) and employed around 61,000 people (about 5% of the total Financial Services workforce in the UK (HM Treasury, 2016).



The value of global FinTech investment in 2015 grew by 75 % to US\$22.3billion. Corporates, venture capital and private equity firms have invested more than US\$50billion in almost 2500 global FinTech start-ups since 2010.



Source: EP (2017, p4)

The rapidly growing FinTech sector has its rewards and challenges (e.g. data and consumer protection issues, risk of exacerbating financial volatility and cybercrime) and is increasingly attracting political attention. The European Commission set up a Financial Technology Task Force (FTTF), the European Parliament's Economic and Monetary Affairs Committee (ECON) and the G20 (the Financial Stability Board are scrutinising FinTech. The broad scope of FinTech presents challenges to regulators associated with for example (a) rule-based regulatory frameworks that set out compliance obligations clearly but can be expensive and an obstacle to innovation and job creation (b) principle-based regulation which more flexible, but can create some uncertainty as to what exactly is expected in terms of compliance. Consequently, the institutional framework for FinTech continues to emerge and evolve (EC, 2017). Brexit provides an added level of uncertainty for European nations and the UK whilst negotiations continue to develop.





Technological innovation lies at the heart of many EU policy developments with consultations and actions launched in the context of Capital Market Union and retail financial services for example. The Digital Single Market Strategy for Europe impacts on the development of the FinTech sector as it aims to (i) to support digital infrastructure development (ii) improve access to digital goods and services and, (iii) design rules that foster technological development. Horizontal actions include digital induced business areas and implications for security and personal data protection and Payment Services. Beyond the Commission, EU policy discussion is also taking place in the European Parliament, European Economic and Social Committee in European Supervisory Authorities and within the European Central Bank and the European System of Central Banks.

The EC stance on regulation of the FinTech sector is that the framework should encourage firms operating in the single EU market to benefit from financial innovation and provide their customers with the most suitable and accessible products. It relies on three core principles:

- technological neutrality – policies should ensure that the same activity is subject to the same regulation irrespective of the way the service is delivered so that innovation is enabled and level playing field is preserved
- proportionality – reflecting the business model, size and systemic significance as well as the complexity and cross border activity of the regulated entities
- market integrity – should promote more market transparency to the benefit of consumers and businesses without creating unwarranted risks (e.g. market abuse, miss-selling, cyber security issues, systemic risks)

In the European Union, the European System of Financial Supervision consists of the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA) as well as the European Systemic Risk Board.

In the European Union the European System of Financial Supervision consists of the European Banking Authority, the European Securities and Markets Authority and the European Insurance and Occupational Pensions Authority as well as the European Systemic Risk Board. At the national level, [fully functional supervisory authorities](#) are the characteristic of financial centres around the world. However, the specific structures of individual supervisory authorities and their approaches can be very different.



II. Global trends and challenges

The goal of the European Commission is to develop a comprehensive strategy on Fintech and in 2016 they set up a [Financial Technology Task Force](#) (FTTF) with a view to formulating recommendations and proposed measures. The aim of the FTTF is to 'create the right conditions to support innovation and for a future-proof environment to emerge'. The FTTF seeks to find a balance between fostering innovation and supporting the pursuit of opportunities associated with financial technology while at the same time addressing any risks that may emerge. There is some consensus that a clear regulatory framework is required to instil public confidence in online services however the form and content of this system remains to be seen.

Most commentators suggest that regulatory challenges lie in the difficulty of keeping up to date with the rate of change in the services available in the marketplace. National regulatory authorities are faced with challenges not just of keeping up with change but also whether they should lead or follow technological-led change or remain technologically neutral along with the risks opposed by a lack of a harmonised regulatory approach across the Community. The growing gap between regulation and technology leads to numerous issues of concern related to issues such as e-identification, data, cloud services, cyber-security, payments, and digital skills (EC, 2017).

There are a number of key factors driving the development of the sector that include

- Significant technological advances that include (but are not limited to) artificial intelligence (AI), big data, blockchain, cloud computing)
- Monetisation of data that has seen a fundamental change in the way consumers pay for financial services (e.g. advertising and monitoring or re-selling of data to third-party companies)
- Infrastructure and devices that have led to a revolution in consumer connectivity allowing consumers and businesses to connect in new and innovative ways and transforming the market for e-commerce
- Economic conditions that have seen a lack of investment in technology by mature businesses operating in the Financial Services sector
- Radical innovations where FinTech companies are completely circumventing existing structures (e.g. Bitcoin). Mainstream consumers are increasingly likely to use new players as the traditional barriers of trust, credibility and familiarity are eroding and technology enables swift scalability.
- Incremental innovation where FinTech (once seen as a threat to incumbents promising disruption in an industry suffering from a loss of customer trust) is



increasingly seen as a complementary resource (e.g. collaboration, outsourced R&D)

- A new range of regulations promoting financial services companies to monitor their activities more robustly (and leading to the development of a burgeoning RegTech sector)
- European regulations such as MIFID II, PRIIPs PSD 2 will require incumbents to adapt quickly and to move away from legacy systems. With increased competition driving prices down and increased regulation driving compliance costs up some sectors are facing huge margin pressures and are looking for lower cost delivery models (including RegTech solutions)
- Skills shortages - Attracting and retaining high quality talent is repeatedly identified as one of the most prevalent challenges faced by FinTech companies
- Potential to address financial inclusion where there is increasing recognition of the role that FinTech may play in engaging the huge number of people that are not currently serviced by the financial services sector
- Uncertainties around Brexit (e.g. its impact on the business operating environment, access to capital passporting rights)

Factors and trends will be developed further in subsequent MentorCert Intellectual Outputs.

III. Best practices: responding to the challenges

Policy is widely recognised as a key lever in supporting the FinTech sector and a major differentiator between EU nations. At the European level, policy changes can help foster economic growth notably, the creation of a Digital Single Market creating over €415 billion in additional growth and 3.8 million new jobs in the EU. European frameworks such as PSD2 have also encouraged European banks to lead the way in terms of the implementation of real-time payments (EBF, 2017). The EC recognise the role that EU regulatory frameworks (and supervisors at the national level) can play in taking initiatives forward to better understand and support technological innovation in finance for both FinTech Start-ups and incumbents (EC, 2017). Some European supervisors have set up dedicated teams and departments to support FinTech developments and innovation hubs that aim to provide guidance to innovative firms (regardless of their size) and help them understand regulatory requirements. Other supervisors have started a more systematic monitoring of innovation by establishing a regular forum with relevant stakeholders. Others are setting up regulatory sandboxes to work with pre-selected firms in testing innovative technologies.



London's success as a global FinTech hub is reflective of the country's policy environment, including the combination of strong regulatory and tax incentives aligned with progressive government programs (EY, 2016). Key factors include London's position as a global financial hub in terms of both the overall competitiveness of its financial sector and the strength of its financial services human capital. A supportive regulatory regime – Financial Conduct Authority (FCA) – provides a range of tax incentives including Enterprise Investment Scheme, Seed Enterprise Investment Scheme, and Research & Development credits for companies with less than 500 employees. The FCA and other stakeholders have introduced a hub to support innovation through the integration of regulatory requirements and technology and acceleration of the procedures for international talent recruitment (Ryerson University, 2017).

Estonia is widely considered to be among the world's most vibrant digital economies, energised by forward-thinking, liberal policies and an exceptionally IT literate and highly educated society. A key enabler of advancement in the IT sector has been digital identity (e-ID), together with a willingness to accept digital by default. By 2005 citizens could use digital identities to sign documents, use internet banking, incorporate a company, file annual tax returns, register store rewards, vote, and access over 300 public services. Security has been enhanced by X-Road – a network which pulls together personal data from numerous decentralised databases only upon an authenticated request. These requests can also be monitored so users know what, when and why their data has been looked at. The Estonian example underlines three core principles which can advance use of digital financial services and the wider digital economy – identity, trust and functionality (GOS, 2015).

IV. Lessons for curriculum development

The FinTech sector presents a range of challenges and opportunities for higher education curriculum that seeks to develop the necessary technical and employability skills to successfully enter employment in the sector. Common university responses to FinTech skill shortages include curriculum reviews, inclusion of STEM programmes, FinTech specific MBA specializations, and various policy/white papers provided by Ministries of Education and universities.

There are opportunities for universities to develop and introduce FinTech-specific content within university programs such as Master of Business Administration (MBA) programs. These programs could include courses and topics such as: FinTech Analytics, Financial



Information Systems, Robo Advisors and Systematic Trading, Dealing with Data, Risk Management for FinTech, Application in Entrepreneurial Finance, FinTech Personal Finance and Payments, or Digital Currencies.

There are also opportunities to ensure that the curriculum addresses labour market and the needs of the economy. This requires universities to collaborate with a range of stakeholders in the development of the curriculum. For example universities may work in partnerships with the professions, FinTech businesses, business intermediary organisations and local economic development partnerships to improve the curriculum (especially in STEM fields) and to align it more closely with the needs of FinTech employers and the local economic development strategies.

Higher education institutions are also involved in a range of extra-curricular initiatives for students. For example, there are many examples of hackathons, mentorship programs, independent course offerings for specific skill enhancement, conferences, the promotion of women in the sector and both privately-funded and publicly-funded events. Additionally, recent trends in attracting and developing financial technology talent include the establishment of incubators and seed accelerator programs. These programs aim to accelerate successful venture creation by providing specific incubation services, focused on education and mentoring, during an intensive program of limited duration.

A rapid search for university programmes in the UK suggests that there are relatively few on offer e.g. [Manchester Metropolitan University](#), [Open University](#), [Strathclyde](#), [University of Oxford](#), [Imperial College](#), [Stirling](#), [Wrexham](#), [Falmouth](#) and others such as the [European Centre for Technology](#) and in the US [New York University](#) and the [FinTech school](#) and others signposted [here](#).



V. Definition of sectoral skill card elements

There are a range of skills and competencies required to be able to operate in the FinTech sector. Some of the core knowledge and skills required are summarised in the table below.

Understands the challenges related to regulatory reforms, technology, corporate governance, globalization and increased competition in the Fintech sector
Understands the sector and its implications for small business development.
Has a sound knowledge of the sector, the background of key players and how they are navigating the eco-system.
Understands how the sector functions, how value is created and the business support infrastructure.
Maintains current knowledge of major industry segments; reads major industry publications and attends relevant events; keeps current with trends in the market.
Collects, organizes, disseminates and analyzes relevant industry data and/or trends
Use personal experience and expertise to identify the needs of the client
Develop own networks and relationships to provide access to information, support and resources
Introduce the client to other sources of support

Adapted from the National Research Council Canada (NRCC, undated) and Institute of Enterprise and Entrepreneurs (IOFF, undated)

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Horizontal Issue: START-UP

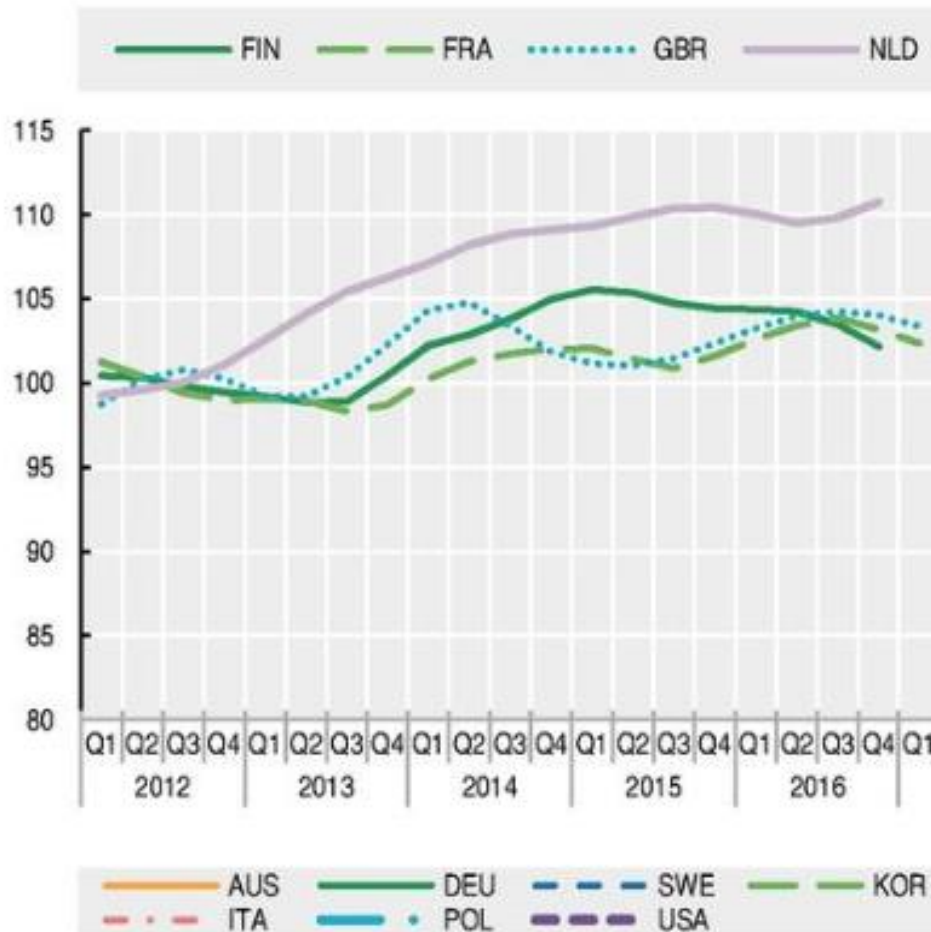
I. Brief overview of the horizontal issue: Start-up

Start-up enterprises, particularly those with the potential to innovate, create jobs and add social, environmental and economic value are a key element of European economies. However, few of these enterprises go on to grow to a substantial size and many of them will fail by the third year of operation (OECD, 2017). Statistics to determine how many start-ups there are in Europe are often incomplete or lack comparability due to different definitions applied to what constitutes a start-up. For example, the statistics may include self-employed (businesses employing no employees) and at times these businesses may be excluded or separated out from start-ups employing workers. Sometimes micro businesses (employing less than 10) are used as a proxy measure of business start-up activity although many of these businesses may be relatively mature. There is some variance related to the use of the age of a business and its classification as a start up with the OECD including businesses up to two years old and the European start-up monitor embracing businesses up to 10 years old (ESM, 2016). There are also blurred boundaries between activities undertaken in a pre-start-up phase and the start-up phase itself as illustrated in the Global Entrepreneurship Monitor that includes individuals in the process of starting a business (nascent entrepreneurs) and those starting businesses (under 42 months old).

The OECD publication, Entrepreneurship at a Glance provides an international comparison of start-up activity. The latest report (2017) suggests that the number of new businesses created has been rising in most OECD countries. At the same time, the number of bankruptcies has fallen back to pre-crisis levels in most of the economies surveyed. These positive signals are also observable when looking only at incorporated businesses, with creations trending upwards in ten of the twelve countries where data are available including Belgium, France, Italy, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Self-employment has also increased in recent years, in part reflecting the rise of the “gig economy” (See Figure 1).

Figure 1 Self Employment Rate



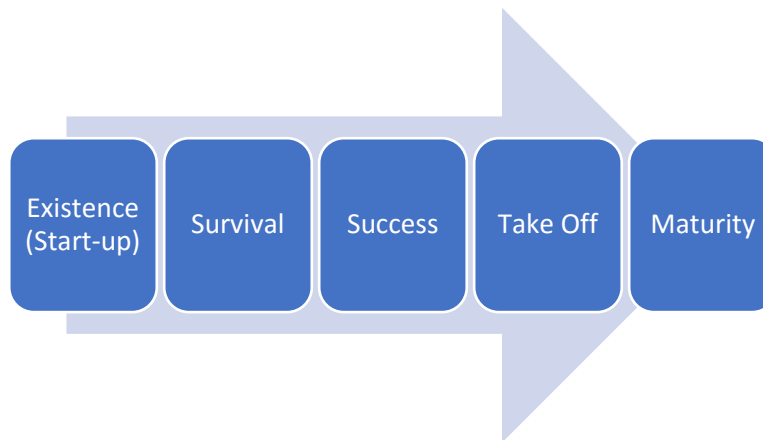
OECD (2017, p 28)

II. Global trends and Challenges

Much of the policy analysis is guided by assumptions about the start-up, survival and growth of small and medium sized enterprises (SMEs) influenced by life-cycle models of development embodied by for example (Figure 2), Churchill and Lewis (1983)⁶.

⁶ There are many other models including [Adizes](#), [Greiner](#) or [Petch](#)

Figure 2: Churchill and Lewis 5 stage growth model



Churchill and Lewis recognise that categorising the problems and growth patterns of small businesses in a systematic way that is useful to entrepreneurs is a challenging task. They argue that for owners and managers of start-up businesses, such an understanding can aid in assessing current challenges and anticipate key requirements at various points in the journey from small start-up to large, mature organisations (e.g. the need for delegation and changes in managerial roles when companies become larger and more complex). Churchill and Lewis suggest that the organisation in the start-up stage is a simple one where the owner-manager does everything and directly supervises a small number of subordinates. Systems and formal planning are often minimal or non-existent and the businesses strategy relies largely on survival. The owner-manager is the business and performs all the important tasks. He or she is the major supplier of energy, direction and with relatives and friends, capital.

However, many start-ups never mobilise sufficient demand for their goods or services, are able to deliver to the required consumer standards or generate the working capital necessary to sustain the business. In these cases the owners close the business when the start-up capital runs out and, if they are lucky sell the business for its asset value. In some instances, the owners cannot accept the demands the business places on their time, finances and energy and they quit. Others may learn from the experience and start again. The model suggests that those businesses that successfully negotiate the start-up phase continue their journey towards survival, growth and becoming a larger organisation. The OECD (2017) suggest that many newly created businesses fail within the first few years of life although there are big differences between countries. The one-year survival rate of firms started in 2013 was above 90 percent in Sweden, Luxembourg, Lithuania and Britain; between 60 and 70 percent in the Czech Republic and Poland; but below 55 Percent in the Slovak Republic.



Staged growth models have been criticised on a number of fronts including a tendency to oversimplify the complexity of start-ups and the challenges of leadership and management. In the thirty-five years since the publication of the Churchill and Lewis model a consensus has emerged amongst researchers that businesses do not develop according to a pre-set sequence of stages, rather they appear to evolve through their own unique series of stable and unstable states largely related to changes in the internal and external environment. Central to the survival and success of the enterprise is the leader's capability to find new knowledge, to resolve new challenges and an ability to implement this knowledge so that the business can succeed in a complex and competitive environment (see for example Phelps, 2007).

A number of models of business start up are proposed by academics and practitioners. For example the European Young Innovators Foundation (YIF, 2018) propose six stages that include

- Discovery – where the entrepreneur identifies a problem or opportunity, comes up with a solution and checks to see if anyone – especially potential users and clients – might be interested in the idea. This first phase requires developing a 'minimum viable product' that will provide a foundation to assess market need
- Validation – the entrepreneur moves from a hypothetical product to a first offer to the market. This will enable validation by the potential market.
- Efficiency – where the entrepreneur has to establish a viable business that can adjust to the environment. The aim is to increase the customer base in the most effective way possible, preventing growth from stifling the project.
- Scale – the entrepreneur has to prove the scalability of the business and its capacity to grow in a sustainable manner (keeping costs down). The entrepreneur has to be ready to compete in international markets. Access to further external funding can be a key element of this phase.
- Maintenance – where the entrepreneur establishes the structures to ensure the sustainability of the business
- Sale or renewal – the business model works or is seen to be credible and two routes are proposed (i) sell to a giant (ii) go public and try to become a 'unicorn'

There are several international institutes that provide an insight into global trends and challenges associated with start-ups. For example the [European Startup Monitor](#) (ESM) provides a comprehensive study of the European ecosystem. It identifies some demographic characteristics of founders e.g. on average 29.9 years old, 85.2% male and have 79% the citizenship of the country in which they set up their company. It also identifies sales and customer acquisition as the biggest challenge facing start-ups. The ESM shows that startups are international and cooperate with established companies to



cope with their challenges. Start-up entrepreneurs identified differences in legislation and regulation between countries as the biggest hurdle to internationalisation. A further example is an Annual Report published by Startup Genome and the Global Entrepreneurship Network (GEN) which provides an insight into features of eco-systems to support start-up including strategic startup, investment and policy insights. It draws on evidence from cities around the world including several in Europe.

At the micro level of the startup it is widely recognised that learning is an integral part of the personal development of leaders and start-ups. The emphasis of learning in a start-up enterprise is two-fold (i) the personal development of the individuals and (ii) the capability of the organisation to survive and reach its potential. Burgoyne and Hodgson (1983) identified three levels of learning which are relevant to leaders of start-up enterprises and useful to contextualise the mentoring process that lies at the heart of the MentorCert project.

- Level 1 learning describes the assimilation of factual information and whilst this may help to inform business decision making at the operational level it does not usually have long-term developmental implications. It is nevertheless important in the start-up phase as new leaders may be tackling business issues (e.g. marketing, finance, recruitment, strategy) for the first time.
- Level 2 learning involves the transfer and assimilation of knowledge from one context to another. It also involves the application of new knowledge in the start-up context which may influence personal and enterprise development.
- Level 3 learning is important in terms of stimulating fundamental change, encouraging the individual to reflect on and question established ways of doing things and the underlying perceptions that drive behaviour

As well as recognising different levels of learning it is useful to identify some different forms of learning. In particular in the context of start-up, the importance of learning by doing, sometimes described as experiential learning which creates a gradual change in personal and/or organisational capability. Rarely is the learning process planned; rather it is the result of a series of reactions to events in which the start-up leader learns to process information, develop strategies and take decisions. This type of learning is often grounded in the business - experienced-based, non-routine and tacit in nature. Burgoyne and Hodgson differentiate between deliberate learning – how to solve an identified problem and more reflective learning when managers are thinking about the problem but not 'in the thick of it'. This is similar to Megginson's (1996) conclusion that learning is both planned and emergent. It is argued that in order to engage in higher level learning, start-up leaders need to proactively reflect on their experiences in order to learn how to learn more effectively. If the start-up leader relies too heavily on preconceived



perceptions and established ways of working formed through previous experiential learning, they may fall into a 'learning trap' as they rely on outdated situational stereotypes (West and Wilson, 1995).

For an enterprise to start-up, an individual or group of individuals will come across a variety of tasks that they need to complete. In many instances they will be completing these tasks and solving a variety of problems for the first time and will need to learn how to navigate them. How to become established in the marketplace, manage cash flow and deal with multiple business issues all at once are some of the most common challenges start-up leaders face. Many start-up leaders will be dealing with the challenges of establishing the business and some will be doing this whilst at the same time looking ahead to the future. Far from the straightforward process that is implied by some of the growth models, situated qualitative research reveals the start-up phase as a difficult and sometimes traumatic process with leaders often having to learn harsh and sometimes expensive lessons as mistakes are made.

It is also important to recognise that business leaders may have to experience difficulties at first hand in order to develop higher level learning outcomes from what occurred and to fully understand the value in avoiding the same mistakes occurring again in the future. This brings into question just how much start-up leaders can learn vicariously and how much they need the experience to learn from.

III. Best practices in answering the start-up challenges

Start-up leaders may need and seek practical support of immediate value as they face a steep learning curve establishing the enterprise. More reflective or long term development may only be necessary as the start-up leader establishes a firm foundation for the business. One of the most important decisions facing an entrepreneur relates to the type of business they want to develop. A simplistic way of looking at this is whether it is mainly a substitute for a different job, a lifestyle business or a growth business. The start-up leader will need to align their personal goals with their business goals both in terms of work-life balance but also in terms of the development of a sustainable business and the balancing of social, cultural, environmental and economic goals (as contrary to some stereotypes not all small business leaders seek profit maximisation).

One important issue to recognise is that mentoring support will be highly contextual and individualised. Effective support will be aligned with the specific needs of the start-up leader in relation to their business. To create such facilitative, dynamic assistance requires a detailed knowledge of both the start-up leader and the business. At the start of the relationship the start-up leader is probably looking for encouragement, positive support,



helpful advice and useful ideas. This is particularly relevant for people who have not had any previous experience of starting and running a business. In the start-up phase the mentoring approach is more likely to be tactical than strategic i.e. winning the first customer, getting the cash in quickly, keeping correct financial records etc. The mentor in this situation is often someone who not only understands what the mentee is experiencing but can also give meaningful and immediate practical advice. Within this process, a mentor can also help the start-up leader to step back from what is happening and engage in more reflective learning as to the nature of the problem/opportunity and what the most effective solution may be.

If start-up requires basic advice – getting sales and creating an infrastructure the second phase required mentees to change gear especially during the 9-18 month period which can be the most challenging time for start-ups. Mentors will need to encourage their mentees to develop or keep an eye on their business plan as a way of monitoring the progress being made and to determine the platform for survival or growth. It often requires the mentor to keep the mentee motivated and encourage them to persist. (Cull, 2006). The mentor can be more strategic and developmental and involve bringing forward the experience of the start-up leader to understand more clearly events that have happened and where the enterprise is at present in order to try to avoid certain critical incidents or more prolonged critical periods that may threaten the sustainability of the enterprise in the future. Gibb refers to this as 'generative learning' and describes it 'an interactive process of reflecting on the vision, performance and capability of the business and the ways in which new threats and opportunities impact upon it (Gibb, 1997, p19).

During the mentor-start-up leader relationship there will be times when the mentor offers a safe place for the mentee to share their agenda, interests and goals and to offer support by listening, asking the right questions and drawing out the mentees own answers to problems. At other times, particularly when the start-up leader is inexperienced, the mentor may be called upon to stimulate questions, offer creative ideas, challenges, knowledge, success stories, models and tools.

There are a number of good practice principles that can underpin mentoring with business start-up leaders. These include

- Screening of prospective mentors
- Matching of mentors and mentees
- Pre-match and ongoing training
- Frequency of contact



Both mentor and mentee must want to have a relationship. There is a view that most tricky issues can be navigated if there is willingness to do so on both sides. The technical skills and experience of the mentor are important as are attitude and personality. There is a need for good chemistry and this can be enhanced if there is a willingness to listen to each other

In contrast there is a danger when any of the following conditions apply

- Social distance
- Mismatch between the values of the mentor and mentee
- Inexpert or untrained mentors
- Mismatch between the aims of the mentoring scheme and the needs of the person being mentored
- A conflict of roles where it is not clear if the mentor is acting on behalf of the mentee or another person/institution

Indicators of a relationship not working include

- Lack of communication
- Lack of follow through
- Lack of commitment
- Lack of respect

There is a range of examples of good practice in Europe that may be found in the work of organisations such as the [Global Entrepreneurship Network](#), [Start-up Europe](#) and [the European startup network](#). MentorCert project partners in Budapest suggested further examples including

- governmental initiatives: [Hungarian National Training House](#), [TechCity](#), [Be Startup Manifesto](#), [MaGIC Malaysia](#)
- university based initiatives: [Zell Entrepreneurship Program](#), [Team Academy](#)
- for-profit business initiatives: [KiBu](#) sponsored by T-Systems, [K&H Start](#) it sponsored by KBC
- non-profit initiatives: [Demola](#)
- mixed initiatives: [Design Terminal](#), [Bridge Budapest](#)



IV. Lessons for curriculum development

A curriculum for training start-up mentors will contain concepts and theories relevant to mentoring and an assessment process that allows the learner to demonstrate a

- Clear grasp of relevant concepts
- Ability to link theory to practice, and
- Ability to communicate clearly in the relevant discipline at the expected level for the qualification

It will include elements of co-production of materials between stakeholders involved including entrepreneurs, mentors, academics etc. It will draw extensively on practice-based learning which is explicitly designed to reflect the start-up context and professional practice. It may include learning which is work-based or immersive in nature and reflect the start-up context and preference for 'learning by doing' exhibited by entrepreneurs.

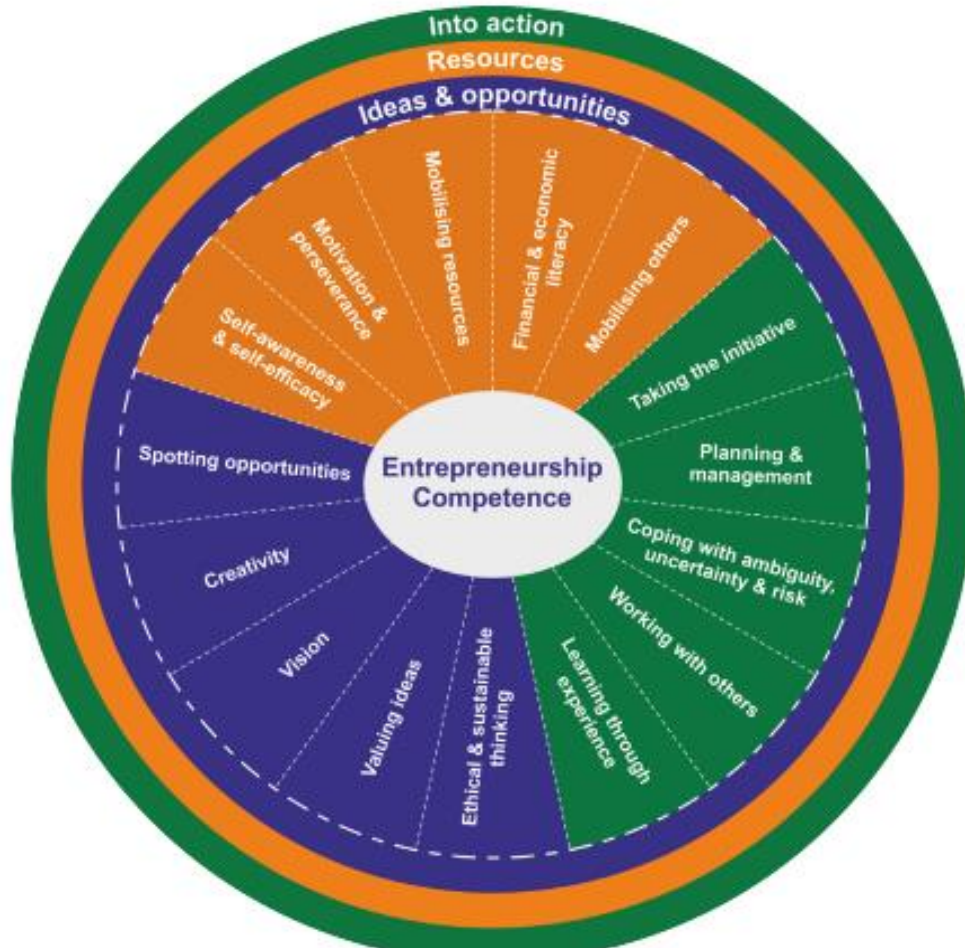
The curriculum can include elements of work-related learning including guest lectures by entrepreneurs who have successfully navigated the start-up process, case studies that highlight the opportunities and challenges associated with start-up that reflect the sectors featuring in Mentor Cert.

It may also be necessary to recognise that many enterprises are started by more than one individual – as a partnership or team – and that learning may be collaborative and distributed which can be reflected in the curriculum.

With the development of e-learning, technology may play a role in the development and delivery of a curriculum that reflects (to an appropriate degree) the benefits afforded by e-mentoring.

Ethical issues associated with manipulation, control and use of power should not be ignored and should form part of mentor education and assessment. The ethical issues may reflect business (sector) or cultural variances between nation states.

The [EntreComp Framework](#) established by the European Commission can be used as a reference for the design of curricula in the formal education and training sector. . It can also be used for activities and programmes in non-formal learning contexts (for instance, to foster intrapreneurship with existing organizations). It aims to establish a bridge between the worlds of education and work as regards entrepreneurship as a competence.



EC (2016) p6

V. Definition of skill card elements

The start-up process requires the entrepreneur to develop a range of hard and soft skills. In the current version of the Trust-Me Skill card, the hard skills are largely related to specific business skills such as marketing, finance (budgeting) and employing and managing workers (HRM). The soft skills are associated with for example adult learning styles, communication and conflict management. These skills directly or indirectly map onto the EntreComp framework introduced above. However there would appear to be some areas notably vision, planning and coping with ambiguity, risk and uncertainty that



may usefully inform the development of the MentorCert Framework. The notion of learning through experience, relationships with others, generative learning and the need for a strategic orientation to support the sustainability and development of start-up business are also key characteristics that emerge from this review.

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Horizontal Issue: NASCENT ENTREPRENEURS

I. Brief overview of the horizontal issues

Entrepreneurship can be understood as the art of making it happen with creativity and motivation. It consists of the pleasure of realizing with synergism and innovation any personal or organizational project, in permanent challenge to the opportunities and risks. It is to take proactive behaviour in the face of issues that need to be resolved. Entrepreneurship is the awakening of the individual to the full use of his rational and intuitive potentialities. It is the search for self-knowledge in the process of permanent learning, in an attitude of openness to new experiences and new paradigms (Baggio & Baggio, 2015).

However, entrepreneurship is not a monolithic concept, rather it is a dynamic process and it has several interdependent dimensions. Hence, in order to have holistic understanding about the concept. Entrepreneurial activities are defined in terms of organizational life-cycle approach (nascent, new venture, established venture) the types of activity (high growth, innovation, internationalization) and the sector of the activity (total early stage entrepreneurial activity TEA, social entrepreneurial activity SEA, employee entrepreneurial activity EEA). It also provides insights on ambitious entrepreneurial activity (both from the stand point of an owner-managed venture and of an entrepreneurial employee) - Figure 1.

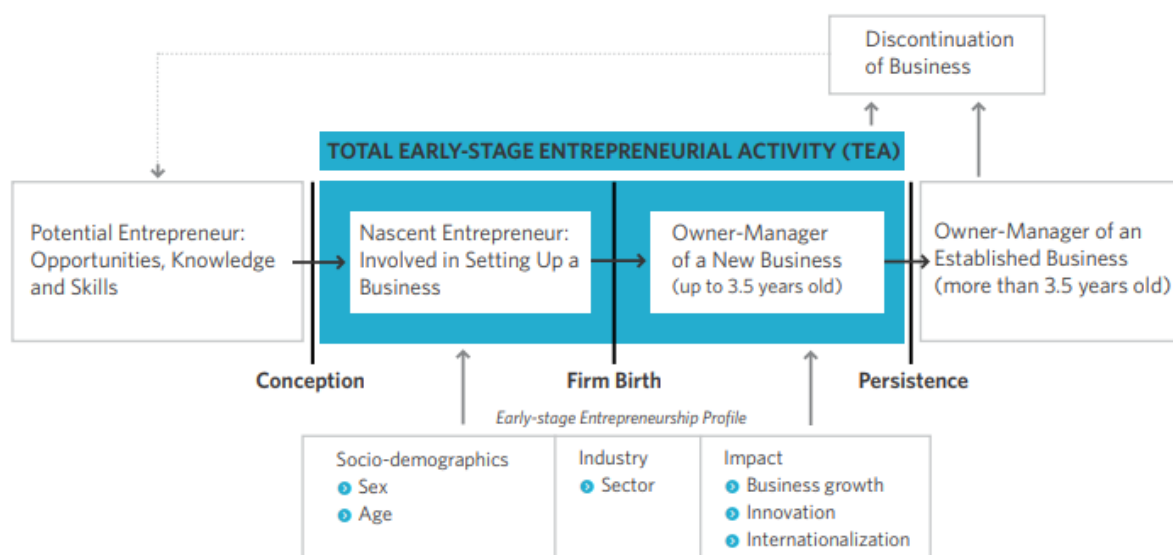


Figure 1 – The entrepreneurship process and operational definitions.



According to Amorós and Bosma (2014) a nascent entrepreneur is defined as a person who is now trying to start a new business, who expects to be the owner or part owner of the new firm, who has been active in trying to start the new firm in the past 12 months and whose start-up did not yet have a positive monthly cash flow that covers expenses and the owner-manager salaries for more than three months.

It requires successful undertaking of a broad range of managing activities (e.g., the development of a marketable product or service, financing, finding rooms for the new business, acquisition of materials and inventories, marketing, and the generation of the first sales) (Samuelsson & Davidsson, 2009).

Socio-cultural factors such as norms, values, social networks, social perceptions and the degree of cultural acceptance of, and support for are important for Nascent Entrepreneurship. Communities traditionally associated with business and trade have leveraged networks and natural webs of interdependence, in building informal ecosystems that provide credit support, infrastructure, socialization and risk management. Encouraging Nascent Entrepreneurship involves widening the social base of capital, which in turn also means enlarging networks and including access to new entrepreneurs from communities that are not traditionally associated with business (Vagesh, Sunena, & Udhaya, 2017).

Formal and informal associations play a key role in nurturing Entrepreneurship. The task of ensuring greater social acceptability for Nascent Entrepreneurship also requires dissemination of best practices, documenting unsuccessful ideas as well as other entrepreneurial experiences at all levels. Reward and recognition at various levels, from local to global, also help in promoting Nascent Entrepreneurship (Vagesh et al., 2017).

The statistic shows the nascent entrepreneurship rate in European countries in 2017. The nascent entrepreneurship rate refers to the percentage of population who are currently a nascent entrepreneur, i.e., actively involved in setting up a business they will own or co-own; this business has not paid salaries, wages, or any other payments to the owners for more than three months. In 2017, about 3.4 percent of the respondents from Germany were involved with setting up a business – Figure 2 (GEM, n.d).

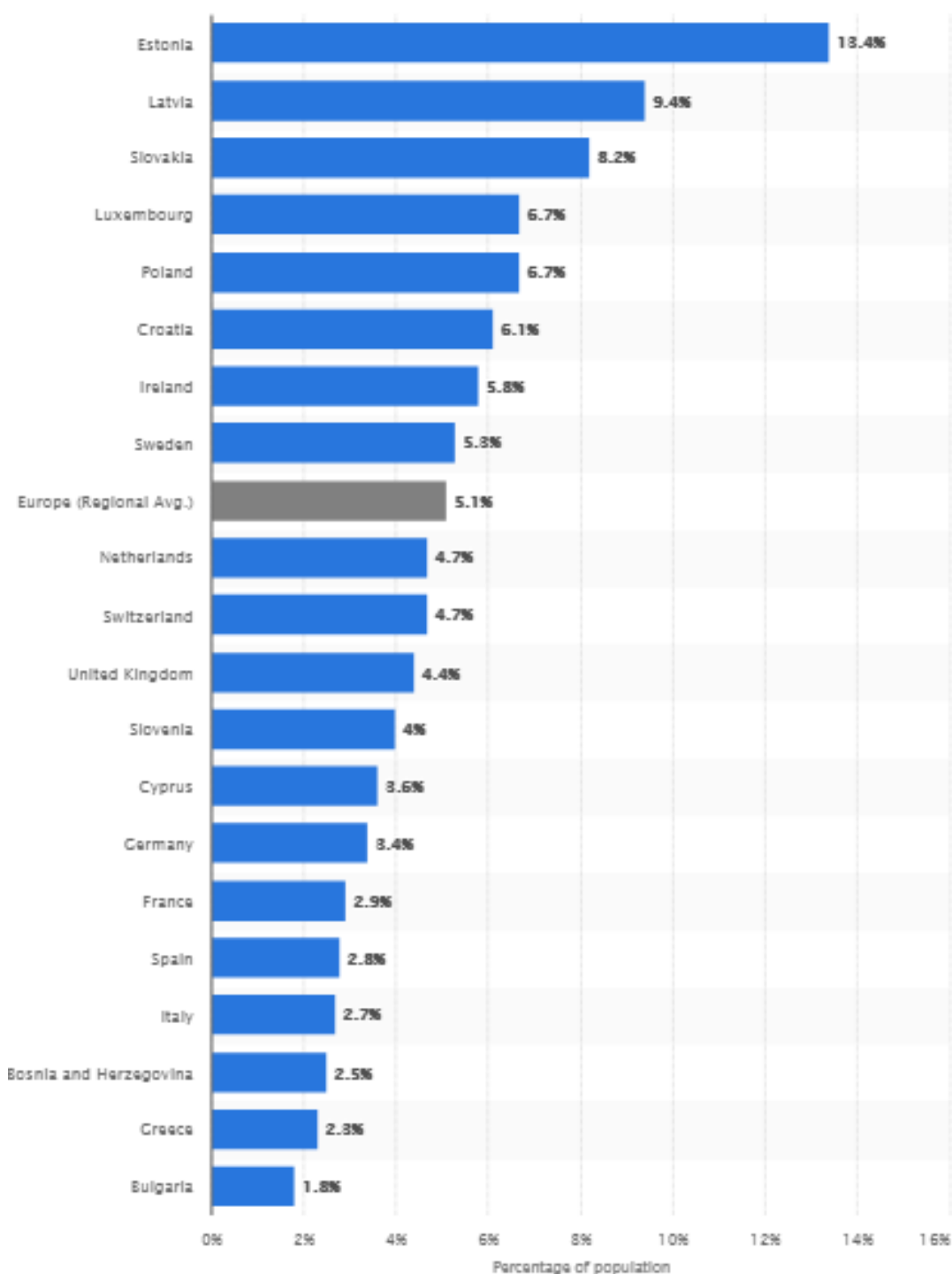


Figure 2 - Percentage of population involved in setting up a new business in Europe in 2017, by country.





II. Analysis

Entrepreneurship has played important roles for an economic growth and development of nations (Van Stel, Carree, & Thurik, 2005). Entrepreneurship contributes employment creation, productivity, growth, and innovation (Van Praag & Versloot, 2007). Shane and Venkataraman (2000) defined entrepreneurship as the process by which individuals pursue opportunities without regard to resources currently under control including the discovery, evaluation and exploitation of opportunities (Tripopsakul, 2017).

Necessity entrepreneurship is focused primarily on needs; whereas opportunity entrepreneurship is mainly operating based on voluntary engagement or unique market opportunity. The following table represents the major motivating factors regarding to pull (necessity) and push (opportunity) entrepreneurs (Ivanova et al., 2017).

Opportunity Driven Entrepreneur	Necessity Driven Entrepreneur
Market opportunity	Unemployment
High economic profit	Lower education
Social recognition	Language barrier
Personal development	Dissatisfying labour market
Independence and autonomy	Family pressure
Rejecting stereotypical feminine identities	Lower income

PROBLEMS AND OUTCOMES IN NASCENT ENTREPRENEURSHIP:

1. People setting up a business may face numerous unexpected obstacles and difficulties, and these may take longer to resolve than expected.
2. New ventures can be resource-hungry and sometimes acquiring these resources may prove more difficult, expensive, or time-consuming than originally planned.
3. Information may be difficult to obtain, prove unreliable, lack in specificity, or turn out to be irrelevant. Governmental regulations may delay the process. A new competitor may capture the targeted customers. Furthermore, one may dislike particular aspects of venturing, for example book-keeping or selling.
4. The market may prove to be less interested in one's product or service than was initially hoped for, which can make it difficult to keep up initial levels of enthusiasm. All these difficulties accrue to uncertainty regarding the market, the business environment, and one's own capabilities. These can be compounded by conflict arising among the business partners.
5. Personal or family problems may intervene making the list of potential setbacks, and obstacles endless. Nascent entrepreneurs (NE) try to solve these issues, mitigate their impact, or work around them. For instance, being rejected for a bank loan may be



problematic for those who have no other financing options but is less of a problem for someone who has not offered the bank any collateral yet, or who has a family member who has expressed willingness to invest. Whether something is experienced as a problem is determined by one's aims and expectations, response options, and response actions as much as by objective features.

6. Inventories of objective occurrences of issues would obscure underlying heterogeneity in whether an objective issue was actually experienced as problematic or not. Therefore, when studying problems the research has to focus on subjective assessments of whether problems were encountered
7. Lack of self- confidence.

ENTREPRENEURIAL FRAMEWORK CONDITIONS:

Finance: The availability of financial resources, equity, and debt for small and medium enterprises (SMEs) including grants and subsidies.

Government policies: The extent to which taxes or regulations are either size-neutral or encourage SMEs.

Government programs: The presence and quality of direct programs to assist new and growing firms at all levels of government (national, regional, and municipal).

Entrepreneurial education and training: The extent to which training in creating or managing SMEs is incorporated within the education and training system at all levels (primary, secondary, and post-school).

R&D transfer: The extent to which national research and development will lead to new commercial opportunities and is available to SMEs.

Commercial and professional infrastructure: The presence of property rights and commercial, accounting, and other legal services and institutions that support or promote SMEs.

Entry regulation: It contains two components - (1) Market Dynamics: the level of change in markets from year to year, and (2) Market Openness: the extent to which new firms are free to enter the existing markets.

Physical infrastructure and services: Ease of access to physical resources i.e. communication, utilities, transportation, land or space, at a price that does not discriminate against SMEs.

Cultural and social norms: The extent to which social and cultural norms encourage or allow actions leading to new business methods or activities that can potentially increase the personal wealth and income.

Conceptual Framework: The conceptual framework includes several individual and demographic factors (gender, age, geographic location. These individual attributes facilitate entrepreneurship activities.



III. Best practices of answering to the challenges

The mandate of public policy is the improvement of the economic performance of a place, i.e., policymakers are requested to make the most out of scarce local resources and factors (Audretsch 2015).

Therefore, adequate strategies have to be implemented in order to facilitate value creation and enable market participants to effectively contribute to regional economic wealth and prosperity. Since the level of entrepreneurship as well as the propensity of entrepreneurial interaction among regional entities constitute important cornerstones of regional development strategies, entrepreneurship and innovation policies are increasingly considered as essential instruments in shaping a region's competitiveness to achieve superior economic performance (Audretsch and Walshok 2013).

The formation and management of entrepreneurship and innovation networks as well as respective ecosystems increasingly gain complexity due to three reasons: an increasing number of involved entities; an increasing density in terms of collaborations; a wider geographical distribution. In the course of addressing these challenges, public policy needs to provide an effective framework for innovation which offers opportunities for knowledge-based entrepreneurship (Karlsson and Warda 2014).

Governments worldwide have adopted various direct and indirect policy measures to create conducive environments for (nascent) entrepreneurs which should facilitate the exploitation of entrepreneurial opportunities and the creation of new ventures. However, respective initiatives have recently aroused serious criticism by renowned scholars like Shane (2009) or Brown and Mason (2014) who argue that the majority of entrepreneurial firms are micro firms with limited growth potential generating only few jobs, thus little wealth. They call for a recalibration of entrepreneurship policies which should deliberately promote technology based, high-growth companies, i.e., create incentives for innovative high technology firms instead of the "typical" start-up companies.

In its strive for becoming an innovation leader in Europe and the world, Germany has launched several policy initiatives in both the public and the private sector to leverage existing local factors and resources and increase the number of entrepreneurial opportunities exploited by (nascent) entrepreneurs in knowledge intensive, high-technology sectors. With the Leading-Edge Cluster Competition and the Excellence Initiative, policymakers aimed at encouraging entrepreneurial action by creating fertile environments for (nascent) entrepreneurs and lowering entry barriers associated with the creation of entrepreneurial firms. Especially the Leading-Edge Cluster Competition thereby tried to create a positive climate for technology-based innovation and high-growth start-ups. By fostering public-private sector interactions, both political programs succeeded in achieving synergistic outcomes resulting in a multitude of innovative business start-ups and spin-offs able to compete globally.



Thus, nascent entrepreneurs were enabled to absorb knowledge spill overs and transform new ideas and knowledge into innovative marketable products and services. The sole focus on high-technology, high-growth entrepreneurship is a necessary, yet not sufficient approach for fostering nascent entrepreneurship comprehensively.

Welter et al. (2016) call for a reconsidered perspective on public policy interventions that should embrace the heterogeneity of entrepreneurship. As we mentioned earlier, Kuratko (2016) argues that a more diverse approach to effective public policy and entrepreneurship is needed to balance the different types of entrepreneurial ventures which coexist within entrepreneurial ecosystems. Thus, public policy should rather enlarge and improve the total pool of ventures instead of limiting its focus exclusively on high-growth firms (Morris et al. 2015).

Accordingly, different, more effective strategies should be adopted for the different types of ventures which help address imbalances within regions and strengthen local competitiveness to finally augment regional economic vitality. Future research on entrepreneurship and associated policies should consequently incorporate the highlighted multifaceted view on (nascent) entrepreneurship, thus provide a holistic view on the effects of public policies on entrepreneurial activities.

More studies are needed which evaluate the impact and effectivity of public policy interventions aimed at increasing regional wealth. As public money is a scarce resource, further guidelines and strategies for policymakers have to be developed to fulfil Audretsch's (2015: 126) mandate of the strategic management of places as he states that "places are competing against other places, some of which have a coherent and compelling strategy to enhance economic performance. Surely, these places will have better development prospects than places lacking such a strategy."

IV. Lessons for the curriculum development

Entrepreneurship and entrepreneurial competencies has been extensively studied (Mitchelmore & Rowley, 2010). Entrepreneurial behaviour is the result of a motivation to achieve a goal and the competencies necessary to achieve it. Following, according with Robles and Zárraga-Rodríguez (2015) a summary of the literature review, illustrating the 20 competencies that are considered important and influential for achieving entrepreneurship effectiveness:

1. Risk assumption - Ability to tolerate ambiguity and uncertain situations and make sound decisions in this situation, while being able to control own emotions;
2. Autonomy/ self-determination - Capacity for making independent decisions based on a clear understanding of the possibilities and the responsibility that it entails;



3. Search and analysis of information - Ability to find and share useful business information for problem-solving using the full potential of the company;
4. Quality of work - Ability to work intensively and tenaciously to achieve the objectives, seeking continuous improvement;
5. Communication - Ability to listen, ask questions, express ideas and concepts effectively;
6. Self-confidence - Ability to address new challenges with an attitude of confidence in their own possibilities, decisions or views;
7. Develop social networks/ generation of support networks - Ability to create and maintain a network of contacts with agents that are or will be useful in achieving the goals;
8. Dynamism - Ability to work hard and continuously in changing situations, with many different partners;
9. Change management - Ability to adapt to different contexts, situations, people and media quickly and appropriately;
10. Initiative - Willingness to take action, create opportunities and improve outcomes without an external requirement;
11. Innovation - Ability to produce an original, unexpected and appropriate (timely, useful) new work according to the needs of the context;
12. Integrity - Ability to act in accordance with what is said or considered important;
13. Leadership - Ability to guide the action of human groups in a certain direction by creating an atmosphere of energy and commitment, setting goals, following up these goals and giving feedback that integrates the views of others;
14. Self-control - Ability to regulate themselves and know their own limitations;
15. Results orientation - Ability to promote, guide and select behaviour in order to achieve the goals;
16. Social mobility - Ability to raise or lower position in the scale of economic well-being;
17. Negotiation - Ability to lead or control a discussion creating an environment for collaboration and making lasting commitments to strengthen the relationship;
18. Troubleshooting - Ability to flexibly assume boundary situations and overcome them and ability to handle contradictions;
19. Responsibility - Ability to maintain consistency between actions, behaviours and words, taking responsibility for their own mistakes;
20. Teamwork - Ability to actively participate in the achievement of a common goal, subordinating personal interests to team objectives.



V. Definition of sectorial skill card elements

Based on the sector descriptions the responsible partners compile a maximum 1 page sectorial skill/competency cards for mentors - as a complementary element (supplement) to the revised TRUST ME skill card

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Horizontal Issue: MATURE ENTERPRISES

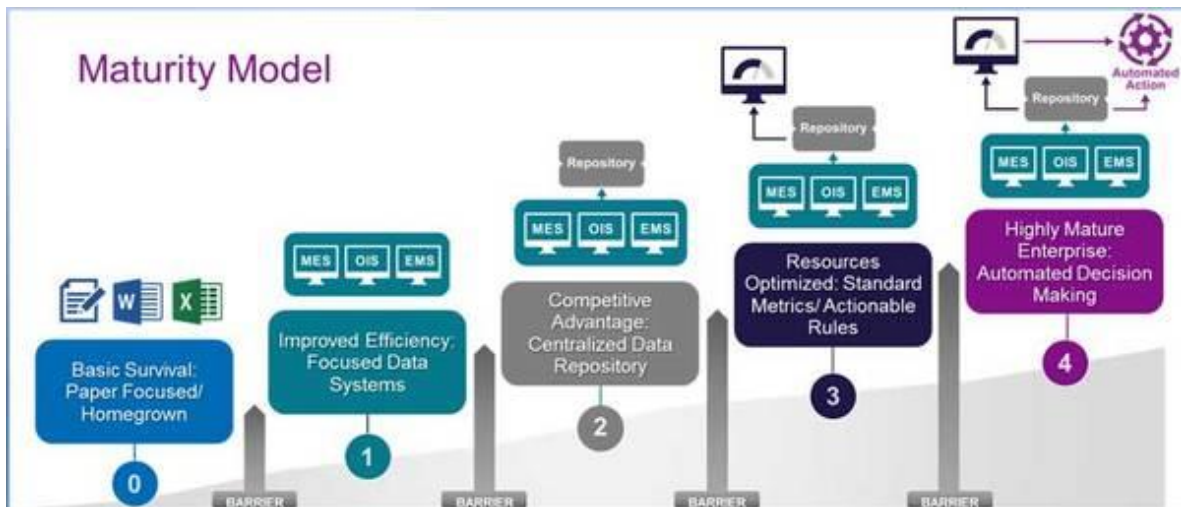
I. Brief overview of the horizontal issue

Running a business is closely connected with having knowledge about the current market. Business managers must continually contribute to the improvement of the quality of services provided. Running a company at some stage is forced to take action to move to the next level. If the entrepreneur does not make a decision about the development of his business, in the long term the company may not generate income, which in turn will contribute to the dismissal of employees, lack of financial liquidity, and even bankruptcy.

There are many researches presenting the existing ways and definitions on entrepreneurial levels. These activities can significantly increase the quality of the company being developed and, above all, help to save money and time, which is the most important from the point of view of the entrepreneur.

Standard data and rules are available to speed up the transition from level 3 to level 4 in the enterprise information system maturity model, where automated decision-making creates a highly developed and mature enterprise. The maturity model of the enterprise information system presents the general context for understanding enterprise systems and a set of criteria for assessing the needs of the enterprise system. It also helps in determining the next steps to increase the effectiveness of the decision (and the bottom line). The Figure 1. shows the maturity model, levels 0-4.

Figure 1.



Source: <https://www.controleng.com/single-article/highly-mature-enterprise-meet-the-challenges-of-enterprise-information-systems>

In order to talk about the resources of a mature enterprise and about what creates it, it is best to recall the words of Bill Genovese: "Enterprise Architecture provides a great advantage of "Cloud Computing", "Big Data", and the "IoT"

When it comes to considerations about a mature enterprise, all kinds of information technology and IT technology become obvious. The Enterprise Technology Framework defines the technology services and functions (IT functions) required to support business applications and data, including shared application services, shared data services, common system services, network services, security services, platform services, and tools to management used to support the provision of IT services. It also helps to define the specificity of the business line that may be required, or in the case of "defined software" and the enabled hybrid cloud model, which system or application must remain in the data center in the company. This reference structure can help define service definitions, rules and patterns of private and limited services, and help define business principles in a hybrid cloud delivery model and how best to access (and secure) in the structure and unstructured data outside the organization, which are currently intercepted and delivered via sensors and technological devices in various entities, geographical locations, and even people. In the case of the desire to establish a mature enterprise, it is impossible to avoid informatization and digitization.

In order to run a mature enterprise, it becomes obvious to plan and run a company's development strategy, that is, a broad-based logistics. Some people think that spending



time planning is a waste of time. However, this is not true. There are more and more studies in this area and the conclusions are clear. Time devoted to creating a strategy of action is sometimes not lost, it is only an investment that brings profits.

Source: <https://networking.cioreview.com/cxoinsight/organizations-that-have-a-mature-enterprise-architecture-function-are-better-positioned-to-take-advantage-of-emerging-and-converging-technologies-nid-10484-cid-9.html>

Logistics issues can be closed in the following elements:

- IoT - internet of things – it is a broadly used application of information technology in building a consciously developing enterprise. Computerization applies to every area of activity that is expected to generate profits.
- Environment and technology - apart from the fact that the enterprise is supposed to bring profit, matters related to the environment are a very important issue. It is important that the consumption of resources and energy is as sustainable and ecological as possible.
- Analytics and advanced machine learning - despite the all-embracing digitization, it is often the case that employees, especially the elderly, are not trained in the use of information techniques. This leads to the weakening of the workforce and, as a result, to the lack of desired effects.
- Cloud and Satisfaction - if the work does not bring satisfaction, it is ineffective, which makes the company management and customers unpleasant with the work of the enterprise. The company needs optimization activities that will make each employee feel an important part of the entire enterprise.
- Connected applications & EDI - EDI has long been the basis of communication in logistics, but its strict formats and standards make it difficult to transmit data in real time. The RESTful Web and JSON services will appear as preferred data transmission technologies, and in some cases they will replace EDI-based communication. As more and more mobile applications are being built to automate data capture, especially on the business basis and during data transfer, these applications will be able to work with many existing systems and form an integral part of the IT business side.
- Security - security in the era of computerization should be constantly monitored due to significant components. The use of protective systems does not end with their installation, but must be constantly monitored and repaired in the event of a



failure. All system reviews and updates must be done regularly using the latest technologies, as the data leak of a given company may end with adversity.

In order to consciously run any type of enterprise, one should be aware of the tools that exist to increase the standards of services provided and how to use them correctly. Undoubtedly, each young company aims to develop and reach the level of a mature, highly prospering company that can be called highly a mature enterprise.

A very mature company focuses on the automation of manual activities performed routinely in response to analytics. The goal of the Level 4 maturity model is to eliminate recurring decisions so that staff can concentrate on more difficult and more complex issues. As usual, the aim of raising the maturity model is to increase productivity. Automatic decisions can include both simple and complex. The organization has to determine if the efficiency increase is sufficient for the costs of automation. It is important to understand the type of automatic decision making that takes place at this level. The goal is not to help the staff make a decision in which the actual decision making is a manual action. The plant production line schedule is a good example of this type of decision making. The application determines the best schedule to comply with the restrictions. The planner decides to order a line based on this information. In this case, the application is a tool for making manual decisions.

Level 4 focuses on making decisions that are fully automatic. In this case, manual consent may be required to make a decision, but the decision and the decision-making process are fully automated. A good example is the automatic integration with the computerized maintenance management system (CMMS). The analytics are used to determine if the CMMS request must be started for the machine in the production hall (based on operational characteristics and working time values).

Moreover, Level 3 organization would provide relevant information to staff based on a rule that can be appealed. In turn, a manual action would be performed to register the request in CMMS. At level 4, this is done automatically with the integration between the analytical system and the CMMS - probably without manual interaction. If manual interaction is required, the action is simply an approval action. After confirmation, the request is automatically registered by the system. This issue can be captured in an interesting way to talk about natural floor.

Increasing the maturity of the organization brings many benefits. Accordingly, as discussed in these articles, large expenditures and dedication are needed to implement the model. In addition, as noted earlier, the number of systems is inversely proportional to their level of maturity.



Natural floor is a concept introduced to better define the characteristics of a mature enterprise. The activities related to the floor in the company are usually delayed in adopting new technologies and concepts in comparison with other industries. As a result, the production hall is one of the last business operations that has reached level 4 of the maturity model. However, one can argue that the floor of the plant is one of the best environments for automatic decision making.

Many examples of level 4 maturity meet daily. For instance, credit card and analytics can automatically decide to deactivate your credit card to prevent fraud. The same approaches can be used in the production hall to make automated decisions and get the same efficiency. Starting the implementation of automation in an enterprise can be easily captured. The best way to determine what you need to automate is to examine actions at level 3. Review the manual actions based on useful information provided by the analyst. Identify and rank the most repetitive activities, especially those that occur most often and in the same way. From this list, check the risks associated with the automation of each activity.

First, you should look for the most repetitive actions (which should get the most efficiency through automation), which have the lowest risk for implementation. It is important to build credibility and trust in the first implementations. Making bad decisions can lead to failures at the start, which generally leads to discouragement of automation. This is one of the most impactful events that prohibit an organization from reaching Level 4 maturity.

Start with a few small implementations and keep them within the organization to reduce the impact of possible failures. Although the most effective automatic decisions usually involve many business operations streams, and even external organizations, it is important to first build on small successes. Do not be tempted to start with a great venture that can only provide effective, high-risk results.

II. Analysis

Many analyzes have been carried out for many years on how to develop enterprises. Many of the ideas have been created by experience. Many of the best tools were created by the mistakes of their predecessors.

Many entrepreneurs claim that all theoretical considerations do not pass the exam in reality. This is a misperception of reality, because many years of research and development of existing solutions gives very good results, which confirm the statements of large corporations. Just take into consideration the risk and invest in innovative, proven methods of improving the efficiency of your business. Statistics say that more and more



employers are willing to invest in modern techniques to improve the quality of services provided.

By experimental methods, based on theoretical considerations and research, three basic principles of creating an automated enterprise were created.

1. Cooperation: As with all other levels of maturity, success requires the cooperation of many parties. Plant floor workers need to understand the impact of automation and its impact on day-to-day work. The controlling staff (who can sometimes be an external supplier or integrator) must understand the various systems to make modifications and provide continuous support.

IT staff are required to handle network connectivity and other basic system functions. Managing personnel must approve the process and understand the consequences of the changes. In the construction industry, without any cooperation between employees and staff, no construction work would be carried out. In addition, construction companies have a huge responsibility.

In the event that there would be no cooperation between individuals, there could be a construction disaster which is a threat to human life. Money plays a big role in every company, and in Civil Engineering, investments are very expensive, hence it is worth investing in construction companies in optimizing work and learning how to cooperate.

2. Incorporating failure: Failure must be included as part of the normal operation of the automatic decision and related activities. Each decision should specify what the failure in the context of the decision means. What are the necessary corrective actions in the case of an incorrect decision? What happens if the automated decision-making process is unable to perform actions based on the result?

Occasionally a notification or an emergency mechanism is required. In other cases, this may affect the production or modification of production. It is very dangerous for businesses to be discouraged from the lack of expected results. Many enterprises make a known mistake and withdraw from innovative methods to develop and strive for a mature enterprise.

3. Continuous review: One of the most important issues in the case of company development is the continuous monitoring of successes and failures. This will allow you to determine in a single place where the company is located. Keeping statistics on the success (and failure) of automated decisions and their impact on efficiency



helps to understand the overall effectiveness. An uninterrupted and planned review of these statistics is necessary to maintain the level 4 maturity.

This data should be made available to all members of the collaborative team and evaluated over time to identify trends. Analyze failures that appear during the process and customize your response plans. Monitoring results also allows deciding which methods are good for a mature enterprise and which are not. A good idea is to ask experienced people from outside the company how they think development is created and in which level they would define a given company. It should be remembered that the self-assessment of own achievements is always subjective and may be burdened with a certain error.

III. Best practises to answering to the challenges

Many young companies think that spending time wondering "What should be the next step?" it is irrelevant. This is wrong thinking, because this way of understanding is extremely important when we want to get better results.

The maturity model provides a context for understanding enterprise systems. It provides a set of criteria for assessing the needs of the enterprise system and helps determine the next steps to increase the efficiency of decisions and the bottom line. It also helps owners communicate better with integrators, suppliers and other suppliers. Although it is presented as well-defined steps, the maturity model is not a rigid process. The organization may be at different levels in various business operations. The model includes a guide and presents a plan of action for organizations and their partners to increase their system maturity and, accordingly, their overall success. Running a mature company cannot exist without interpersonal communication. It is undoubtedly one of the most important skills, because every company first and foremost create people. The conscious development of an enterprise is closely related to the flow of information and thus to the development of soft skills among employees.

A direct response to the attempt to create a mature enterprise is investing in the development of soft skills among staff, and thus meeting the challenges posed in today's market.

Best practices example for being "matured" - CONSTRUCTION INDUSTRY

When it comes to a construction company, technology has a lot to offer. All informers and theoretical data say that the best way to develop construction companies is wide-ranging activities with BIM (Building Information Modeling). BIM is a kind of new design



technology that provides arbitrarily wide information about the object, allowing you to analyze it under any criteria using specialized programs.

BIM makes life easier for all those who take part in the investment process, from the design team by the investor, the developer to the institutions maintaining the building, and then, in the distant future. It is useful for companies dealing with the destruction of urban tissue for new investments. Building Information Modeling is a direct response to the demands placed on the growing construction company.

These benefits are some of the direct benefits that BIM provides. In addition to these benefits, there is also what is often referred to as the "human side" in BIM. This technique drives a new process in the organization that encourages the project team (owners, architects, engineers, general contractor, subcontractors, suppliers, etc.) to work together to achieve optimal performance in the project. Thanks to this, the company can become more mature and ready for bigger challenges. It gives pride of work to all parties and maintains responsibility for mistakes.

Then there are obvious marketing benefits. Simply put, the owners who understand the benefits of BIM are more likely to choose contractors who use BIM tools and a joint construction process because they are all on the same page when it comes to the quality of the resource (project) built. The Figure 2. shows BIM Revenue by Market Segment in 2012-2020.

Figure 2.



Source: <http://www.naylornetwork.com/ngc-nwl/articles/index-v2.asp?aid=243060&issueID=28743>

Best practices example for being "matured" - FOOD INDUSTRY

Creating a mature company can take place on many industrial coatings. A good example of this is the creation of a gastronomic business. In this type of enterprise, it is easy to distinguish features that are necessary to develop business operations. In the case of gastronomy, optimization is not very important because restaurants create a lot of food waste, which is a pure waste, and thanks to the application of new management technologies, it is possible to avoid these losses.

Figure 3 shows the suggested progress of the food management system in the catering industry. This scheme is directly based on the maturity of the processes that are necessary for the proper development of the enterprise. The minimum system starts from the bottom left corner and continues counterclockwise to appear in the upper left corner, with the food safety embedded in the corporate DNA.

In addition, it should be added that the role of waiters and service are important in the catering industry. Customer satisfaction is largely dependent on service, so it is worth devoting more attention to the training and development of soft staff skills. It is worth paying attention to the work of chefs. Raising the skills of cooking the chefs will be directly transferred to the speed of cooking and, above all, will reduce the loss in the preparation of meals.

Figure 3. Levels of Food Safety Management Systems





Best practices example for being "matured" - TOURISM INDUSTRY

Creating a company at some stage will need a strategy that does not just cause losses. Building the right strategy can not be limited to theoretical considerations but must be supported by appropriate experience. Such experience can be available not only to large companies that exist for a long time on the market but also smaller ones that dared to invest in appropriate technologies at the beginning. This is another example of the fact that investing time and money in new technologies such as computerization of communication or any projects is very effective in long-distance perspective.

Running a tourism business can have an unbelievable impact on their purpose, creating jobs, contributing to GDP growth, introducing new markets for goods and services, increasing the visibility of the area, while protecting the local environment and preserving cultural heritage. However, all these benefits do not automatically occur, but must be adequately integrated with the sustainability of any previously understood principles.

Here are some of the most common rules available in many studies:

- Developing the concept of tourism assessment: the development of enterprises dealing with sustainable tourism starts with an assessment that analyzes both the supply and demand for tourism products and services that lead to thoughtful and researched concepts that cover the basis of product ideas, market understanding and local feasibility. Starting from the concept stage, Solimar helps companies assess their possible contribution to local communities and the surrounding environment.
- Business planning: Business plans serve as a "road map" for product development and take into account conservation and development objectives and clearly define the resources needed to achieve these goals. This is another step useful when making decisions and determining the goals to be followed by the company.
- Planning operations: A business plan created is useless if it is not run by a proper manager. It must be a trained person with specific skills and awareness of the important tasks assigned to him. As in the previous examples, employees are an absolute basis in running a business.
- Trip planning and guide training: Local guides act as 'ambassadors' for their communities and destinations, and guided tours are an essential service that a travel company offers. However, it is very important to constantly improve the skills of the guides and give them satisfaction in their work.



- Sales and marketing: The lack of an effective sales and marketing strategy often leads to well-planned and run business. Many small tourism enterprises have no technological or financial opportunities to successfully enter the market. However, it is worth investing in employee cadre training and creating a good business plan, because these actions will bring concrete benefits in the future.

IV. Implications for curriculum

Mentor training curriculum should cover the following aspects as minimum:

Interpersonal communication.

This is one of the most important skills that a mentor or leader should have. All activities carried out by the enterprise are based on communication, therefore proper care of this issue will be successful in the future. In relation to this topic, the theme of soft skills closely matches. The skill of selling, advertising and marketing is very much related to the use of soft skills. It should be remembered that every gesture and body language is also one of the ways of communication. It is not advisable to downplay this topic, because thanks to the mastery of soft skills, communication will quickly grow, and thus benefit the entire company. The skills described above are not only needed at the level of the customer - the seller but also should be considered important in the company's environment and culture.

It is not uncommon that individual departments in a company can not cooperate properly through communication errors. Communication is the skill you need to learn like any other skill. It is very important that the management staff wants to introduce and learn different communication techniques, because it will directly transfer to all teams working within a given company, which will bring benefits. Learning new skills shows employees that they are an essential part of the company, and these contributions and commitment to learning these skills are of great importance to the entire team. This directly implies satisfaction and satisfaction of the individual, which will translate into better development and a mature enterprise.

Increase the quality

- Documentation of processes. In particular, small and medium-sized enterprises, to improve the quality, it is advisable to document any activities that happen in time. There are many computer programs on the market that help to organize time and keep records of activities performed. This is directly related to the use of information technology in the company, as was previously written.





- Find and define quality problems. Employees and management must be aware of the mistakes made and the possibility of their occurrence. The company must be open to self-criticism and listen primarily to all employees, because any attention can contribute to improving the services provided. It often happens that some problems are hidden for fear of criticism and at some stage the effects of such concealment will not be avoided. It is important to reward employees who are trying to capture and identify quality problems.
- Fix the problem for the customer. Making mistakes is obvious when the company is being built. The most important thing is to make a lesson from mistakes. When the error is underestimated, you can lose the customer, so it is also important to repair the mistakes made. The client will notice efforts so that he can get the correct opinion on the services provided, because there are many companies that downplay the mistakes. When a problem occurs, troubleshooting the customer always has to be the highest priority.
- Prevention of making the same mistakes. It is often believed that the implementation of the three previous rods is sufficient, however, this is not enough. It is extremely important to prevent and monitor the possibility of making the same mistake. After each failure, consider the team what caused the problem and what should be done to ensure that the network will be repeated. Documenting processes should help in this matter.

Making decision.

Making decisions is always risky. An appropriate technique can be to create a list of profits and losses and realistic consideration of the possibility of possible errors. In the company, all decisions are made by the management, but all employees should be responsible for their actions.

Computerized Maintenance Management System (CMMS).

Broadly understood computerization is inevitable in the case of conscious and effective business development. The market offers many programs and applications that broaden the possibilities of communication. Today IT maintenance is getting cheaper which should encourage companies to use these services. Business management is mainly based on communication, which is difficult to imagine today without using an internet connection and the right equipment.



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Horizontal Issue: TRANSITION

I. Brief overview of the horizontal issues

During the next decades, thousands of entrepreneurs will retire, usually without formal succession plans, so the next-generation relatives, former employees, or outsiders will assume leadership of these now-mature enterprises, hopefully bringing their own visions and initiatives and becoming, in every sense, re-entrepreneurs. Re-entrepreneurial leaders will encounter challenges that differ radically from those confronted by traditional entrepreneurial leaders. Re-entrepreneurial initiatives should create new visions and missions and should culminate with reimagined and revitalized enterprises. (McEnany-Strutton, 2015). The potential business priorities in European Union based on the KPMG European Family Business Barometer (2017) are the following: educate and train new staff, internationalization and export into new market, attract new talent, improve profitability, became more innovative, increase turnover, diversity more products and services. McEnany and Strutton (2015) based on Schumpeter's innovations theory, developed seven rules for help the transitions process as prospects for successful redirection:

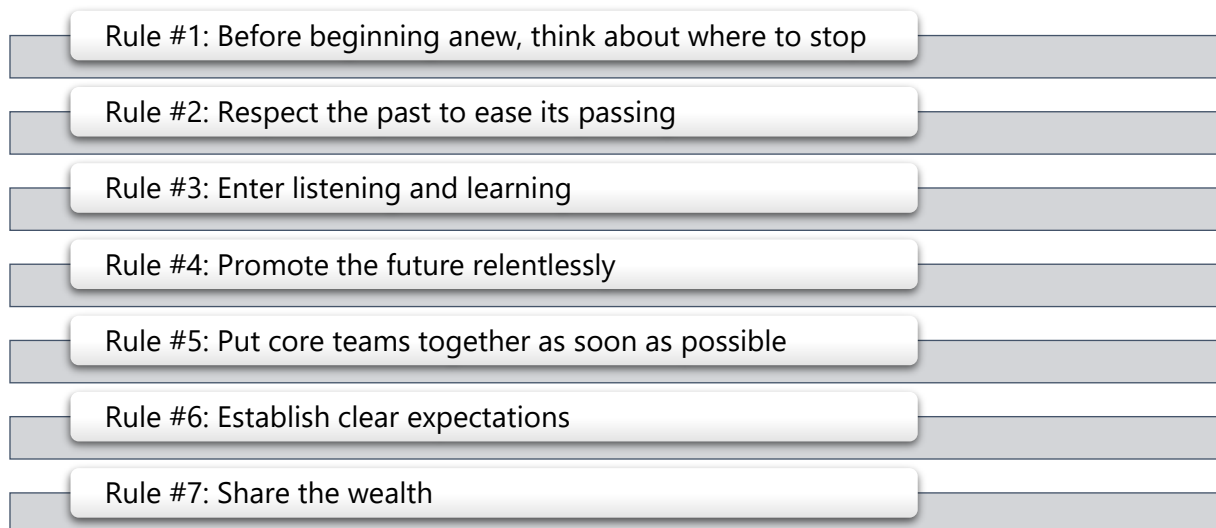


Figure 1: Seven rules to manage a successful transition and a revitalized enterprise

Source: own compilation based on McEnany – Strutton, 2015, pp. 405-408.

The main milestones and tasks in a transition process are the following:

1. Understand the main challenges of the organization: making a new digital ecosystem and business model, the effort of the digitalisation and automatization to the main operation. It can be apply the Design thinking, the Business model Canvas, the Pimento Map or the Lean management principles.
2. Have a clearly defined, professional corporate governance system. The means of professionalism such as the managerial accounting and controlling methods applied, and creating the functional and hierarchic corporate structure, applying outer professionals like consultants, mentors, coaches, mediators, applying family corporate governance methods efficiently help the family businesses' sustainable operation. Making the roles clear in the form of succession plan can contribute to minimalizing struggles inside the firm. Creating inner control mechanisms can be an effective solution to enforce the owner's interests or to neglect the principal-agent problem.
3. Establish and plan a strong and structured leadership succession process and the strategic change example by Gestalt cycle (Figure 2).

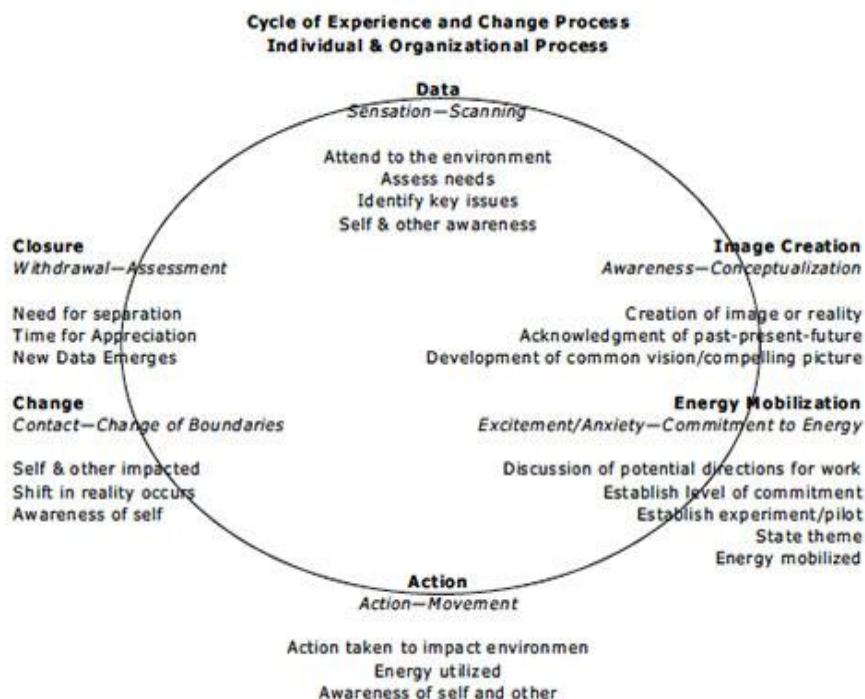


Figure 2: Elements of the Gestalt cycle as an organizational change process

Source: Carter, John D. (2001-2) *Systems: Levels of Intervention. Becoming A Better Intervener Training Manual: Gestalt Institute of Cleveland: Organizations and Systems Development Center, pp. 48-51*



4. Carefully managing of the finance, cultural, socio-emotional components of the integration process is very important, because the transition is one of the most important processes of a business's life cycle due to its substantive effect on the firm's strategy, culture, goals, values, structure, staff, and survivability (Ahlers et al, 2014).

II. Analysis

The transition as a process

The transition-planning process has two main goals:

- (1) the selection of the successor, which includes setting criteria or defining a pool of possible candidates;
- (2) the preparation for the transfer of management control as well as ownership shares from an older to a younger generation (Sharma et al., 2003).

Numerous examples around the world show that succession is also a challenging process that many businesses struggle with (Mussolino - Calabro, 2014), in particular with defining the right timing, finding the right successor, and managing the transition process in a fortunate way (Sharma, 2004). Three key elements of the process are the follow: a leader (who hands over the leadership role), a successor (who takes over the role), and a mechanism (by which the transition takes place) (Davis, 1982).

The generational transition usually passes off without formal or informal transition plan.

We have to take stock of the four important phases of the transition planning process (Murray, 2003):

- (1) The trigger phase,
- (2) The preparation phase,
- (3) The selection phase, and
- (4) The training phase.

The first step in transition planning is an incumbent's readiness to hand over the business. This is often initiated by a trigger (Murray, 2003), which consider one's own exit from a business can be a result of developmental pressures such as age or health, internal forces



such as family, a predestined succession candidate, company management, or external pressure for a change, for example, from accountants or customers (Gersick et al, 1999).

One important aspect of succession readiness is an incumbent's willingness to hand over the business (Brun de Pontet et al, 2007).

The leading tasks in this phase are the following (Le Breton- Miller et al., 2004):

- Creating an initial vision of how the business should operate in the future,
- Clarifying the goals, rules, and guidelines that every internal stakeholder must follow during the succession process,
- Defining the time plan and upstanding the milestones.

The third phase includes three major tasks such as:

- Defining the pool of candidates, criteria for and rules of selection,
- Creating the communication plan, which can share news about the succession to stakeholders (such as employees, suppliers, or customers), and
- Making guidelines for the successor's future training.

In the training phase, when the successor has been chosen, the transition process enters the training phase, in which he or she is trained and prepared for new role. Therefore the quality of the incumbent–successor relationship is important because those commitments have a positive effect on transition planning and successor training (Lansberg - Astrachan, 1994).

The influencing factors of the success in the transition process are based on the international literature:

Fit between successor's career interests and the business; acceptance of individual roles successor and propensity of the successor to take over; trust in successor's abilities and intentions; incumbent's interest outside the business, propensity of the incumbent to step aside; presence of an active advisory board, extent of succession planning; expected payoffs from the business; agreement to continue the business (Sharma et al, 2003).

Alternative succession routes in family firms can be:

- internal generational succession without succession planning (due to atypical family events),
- interim- or gap-management,
- trust,
- merger,
- the sale to a third party,
- the management buy-out [MBO] or buy-in [MBI],
- liquidation or close-down.



The relationship between professionalization and the successful transition

Professionalization is the process through which professional managers become part of the firm at the management or ownership level by entails the adequate formal training and education of individuals as so called professional managers (Songini, 2006). Professionalization and succession processes may occur during the various phases of the organization life cycle. Based on Greiner life cycle model (1972) we can explore the evolution of management control systems throughout a firm's life cycle. More studies have defined the management accounting as a common language which is capable of transferring organizational knowledge during processes of coordination and integration within and across the firm's boundaries (Busco et al 2007). The means of professionalism such as the managerial accounting and controlling methods applied, and creating the functional and hierarchic corporate structure, family members' training, applying outer professionals like consultants, mentors, coaches, mediators, applying family corporate governance methods efficiently help the family businesses' sustainable operation. Making the roles clear in the form of succession plan, will, family constitution can contribute to power struggles inside the family. The descendants' conscious education, training can also lead to prevent conflicts if because of the parental direction each potential successor in the family business can prove his abilities in the area matching his qualification. Creating inner control mechanisms can be an effective solution to enforce the owner's interests or to neglect the principal-agent problem. For this, however, it is necessary for the family to have self-control, and add informal corrections in favour of advancing the company's interests.

Outcomes and effects of the transition

The transition is a three-phase process, which includes an ending, a neutral zone, and a new beginning (Bridges, 2003); where the ending is characterized as letting go of old assumptions and behaviours. Based on Bridges (2003) the neutral zone is the core of the transition and is characterized by the replacement of old behaviours with new. Effective transition takes courage, patience and fortitude. The new beginning is just that, with new skills and a new outlook on the way forward. The individuals and teams need to go through all of the phases to make a successful transition. The most organizations ignore the ending, pay little attention to the neutral zone and expect the new beginning to simply happen. This inattention is one of the main reasons why many organization change initiatives are prolonged.



The end of this transition process can be a great possibility to learn and forgetting. The firm can forget the bad behaviour pattern and can apply new methods, new business perspectives, new partnership etc.

The transition can give it a chance to

- review the business activities,
- do major developments,
- change multi-element of marketing strategy,
- expand to other industries or modify the existing range with minor changes,
- using new technologies opening new markets and launching a related product lines,
- open new markets,
- make a so-called digital strategy,
- connect to networks,
- increase the private equity and finance the growth,
- start the process of internationalization and professionalization,
- become a public company with diffused ownership,
- run by a professional manager.



III. Best practices of answering to the challenges

Rothwell (2009) identified ten trends and fifteen characteristic in the area of the effective succession planning and management. They are the following:

10 trend in succession planning and management	15 characteristics element in effective transition management
1. The need for speed.	1. Top Management Participation and Support
2. A buyer's market for skills.	2. Needs-Driven with External Benchmarking
3. Reduced loyalty among employers and workers.	3. Focused on accelerating the development of individuals with verified advancement potential.
4. The importance of intellectual capital and knowledge management.	4. Dedicated Responsibility
5. The importance of values, ethics, and competencies.	5. Succession Planning and Management Extends to All Levels
6. More software to support succession.	6. A Systematic Approach
7. The growing activism of the board of directors.	7. Comparison of Present Performance and Future Potential
8. Growing awareness of similarities and differences in succession issues globally.	8. Clarification of High-Level Replacement Needs
9. Growing awareness of the similarities and differences of succession programs.	9. Specific Developmental Programs Established and Conducted
10. Managing a special issue: CEO succession	10. An Obligation to Identify and Prepare Successors
	11. Developmental Programs Establish Familiarity with Who, What, When, Where, Why, and How
	12. Developmental Experiences Encourage Critical Questioning
	13. Succession Planning Emphasizes the Qualities Necessary to Surpass Movement to the Next Higher-Level Job
	14. High Potentials Work While Developing
	15. Formal Mentoring Emphasized

Table 1: Trends and elements of the effective succession planning and management

Source: own compilation based on Rothwell, 2009, pp. 51-63.

IV. Lessons for the curriculum development

The literature highlights several elements in firm succession process, example the personnel characteristics of the main actors: incumbent and successor, example the incumbent's attitude toward debt, the incumbent's financial knowledge, the incumbent's risk propensity and the incumbent's experience with debt (Koropp et al, 2013).

Furthermore there are several business and environmental factor, which we have to manage or control. The core internal and external elements (business and macro-economic factors) of the transitions process can be illustrated by Figure 3:

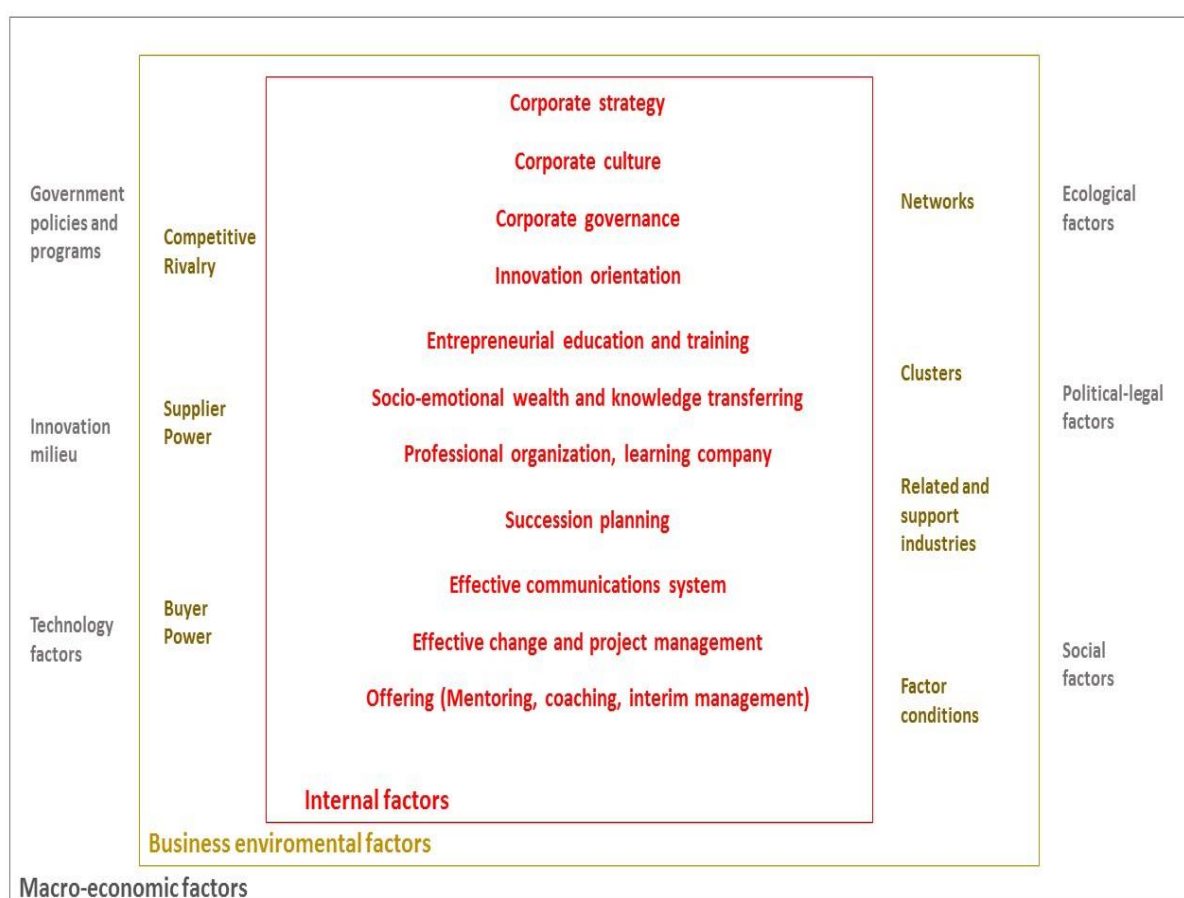


Figure 3: Factors of successful succession management

Source: own compilation



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Concluding remarks and recommendations for the curriculum development

As mentioned earlier the former TRUST ME project delivered a training programme aiming at developing the generic skills and competencies of the business mentors. European experiences, however, call attention to importance of the sectorial specificities and the varieties of problematic situation connected to the different stages of SME life-cycles. Mentors must be trained to be able to tackle the variety of these situations.

As the sectoral descriptions presented above demonstrated the current trends and challenges enterprises have to face in various sectors and in various stages of their operation are very diverse and hardly to compare. Our aim, however, was to collect those knowledge, skill and competence elements that can cover these diversities and are of utmost importance for a mentor in his/her work when providing support to the client(s).

The next session is based on the sectorial reviews complied by the MentorCert partners. The tables summarize the most important sectorial level challenges and trends alongside with the statements concerning skill and competence gained from the sectorial descriptions. The tables provides a review of the skills and competencies identified by the project partners in their contributions.



Horizontal issues

Construction

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - Stimulating demand: Efficiency improvements in existing buildings and renovations have the highest potential to stimulate demand - Training: Improving specialised training and making the sector more attractive, in particular for blue-collar workers, technical colleges and universities. - Innovation: More active uptake of new technologies. - Energy efficiency and climate change: Buildings account for the largest share of total EU final energy consumption (40%) and produce about 35% of all greenhouse emissions. - low margins - ever more difficult contract conditions - increasingly punitive legislative environment - lack of rationality in the market - "forced growth," - uncertain consumer confidence 	<ul style="list-style-type: none"> - Managing time efficiently - Practice basic skills, even if you do not need them anymore - Don't be arrogant but be confident - Understand other engineering disciplines - Give good presentations - Risk and reward - effective time management - Lean Management
Sectorial trends	
<ul style="list-style-type: none"> - Automation and abundance; - BRICs: Brazil, Russia, India, China, India and globalisation; - Climate change and energy; - Demography and ageing; - E-everything, information, technology, computers, everything electronic 	



Agrofood

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - Consumer Engagement, Consumer Behaviour and Perception of Food: consumers increasingly distrust the food sector + digital revolution & new technologies - Demographic Changes: tremendous increases in the average lifespan of a person - Insufficient Resources: securing a continued supply of high quality raw materials will surely become one of the great challenges - Sector Maturity: As a result of a growing raw material supply, there was a need to develop new machinery and technologies to process and preserve agricultural products - 99% of food and drink companies in Europe are small and medium sized enterprises (SMEs) - wide cultural diversity - great variety of regional culinary traditions 	<ul style="list-style-type: none"> - The following are some of the university qualifications required in the agro-food industry's areas of activity: Food Sciences Technology; Biotechnology; Biology; Winemaking; Food Technology and Management; Human Nutrition and Dietetics; Agro-Food Engineering; Biological Systems Engineering; Industrial Technologies Engineering; Chemical Engineering; Chemistry; Pharmacy Business Administration and Management; Marketing and Market Research; and Marketing and Commercial Management. - continuous learning and retraining through professional life - specialisation: food innovation, nutrition, agro-food biotechnology, eco-friendly agriculture, aquaculture, management of food companies and the commercial management of food wholesalers
Challenges for SMEs	
<ul style="list-style-type: none"> - The Single Market: The European Single Market is the EU food and drink industry's main market, with around 90% of turnover generated within the EU - Innovation for growth: diversity in innovation (using technology to better assess consumer preferences, improving production efficiency, making business practices more 	<ul style="list-style-type: none"> - ability to work alone or in a team (often multidisciplinary) - capacity for analysis and anticipation, in order to understand and foresee changing habits and demand preferences - ability to adapt to new technologies - flexibility in carrying out new duties - dynamism and innovativeness - a critical outlook



<p>environmentally sustainable, etc.), limited human resources, lack of personnel with a strong scientific or technology background</p> <ul style="list-style-type: none"> - International markets - Employment and skills: identifying and recruiting new employees is difficult, especially if the candidates don't have the educational background and skills necessary to fit the industry's changing needs - Upstream and downstream relationships in the food chain 	<ul style="list-style-type: none"> - the ability to evaluate the social, ethical and environmental implications of professional activity - an aptitude for communication - capacity for negotiation - ability to retrain and acquire new knowledge throughout professional life - leadership - effective delegation of responsibilities - strategic orientation -
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Tourism

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - Europe traditionally has 50 % of the total tourists' arrival (615 million) - More than two out of three of nights were spent in five Member States: Spain (16 %), France (14 %), Italy (14 %), Germany (14 %) and the United Kingdom (10 %) - the average income of employees in the accommodation and catering sector still remains lower than the overall average - The majority of employees in hotels and restaurants have a level of education that corresponds to "lower secondary" or "upper secondary" and this group is larger than in the overall workforce of the EU27. - high mobility of employees: labour shortage in the sector - In many European countries the education system is not adequate enough to provide a qualified workforce in hospitality industry - the need for tourism employees to learn guest service skills and the culture to serve - ensuring high quality services 	<ul style="list-style-type: none"> - IT knowledge for all levels of employees, - leadership/management skills, - food and health, tourism/hospitality knowledge, - social skills such as different languages.
Sectorial trends	
<ul style="list-style-type: none"> - Women travelling alone will grow - Preference of travel giving experience - New destinations i.e. destination making a step forward - Strengthening the sustainable tourism 	



Financial technology (FinTech)

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - 'traditional' and 'emergent' firms and innovations - diffusion of new financial technologies outside the banking sector - increased risks: data and consumer protection issues, risk of exacerbating financial volatility and cybercrime - challenges to regulators (rule-based vs principle-based regulation) - three core principles: technological neutrality, proportionality, market integrity 	<ul style="list-style-type: none"> - Common university responses to FinTech skill shortages include curriculum reviews, inclusion of STEM programmes, FinTech specific MBA specializations, and various policy/white papers provided by Ministries of Education and universities. - develop and introduce FinTech-specific content within university programs such as Master of Business Administration (MBA) programs. These programs could include courses and topics such as: FinTech Analytics, Financial Information Systems, Robo Advisors and Systematic Trading, Dealing with Data, Risk Management for FinTech, Application in Entrepreneurial Finance, FinTech Personal Finance and Payments, or Digital Currencies. - extra-curricular initiatives for students: hackathons, mentorship programs, incubators, accelerator programmes,
Sectorial trends	
<ul style="list-style-type: none"> - significant technological advances (AI, blockchain, etc) - monetisation of data - infrastructure and devices - a lack of investment in technology by mature businesses - radical & incremental innovations - changes in regulatory environment - increased price competition (need for low cost delivery models) - skills shortages - financial inclusion - uncertainties around Brexit 	



Horizontal issues

Nascent entrepreneurs

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - unexpected obstacles and difficulties - lack of resources - administrative barriers - lack of market interest - personal or family problems - lack of self-confidence 	Entrepreneurial skills and competencies: <ul style="list-style-type: none"> - 1. Risk assumption - 2. Autonomy/ self-determination - 3. Search and analysis of information - 4. Quality of work - 5. Communication - 6. Self-confidence - 7. Develop social networks/ generation of support networks - 8. Dynamism - 9. Change management - 10. Initiative - 11. Innovation - 12. Integrity - 13. Leadership - 14. Self-control - 15. Results orientation - 16. Social mobility - 17. Negotiation - 18. Troubleshooting - 19. Responsibility - 20. Teamwork
Sectorial trends	



Start-up enterprises

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - owner-manager does everything and directly supervises a small number of subordinates - systems and formal planning are often minimal or non-existent and the businesses strategy relies largely on survival - the owner-manager is the business and performs all the important tasks - many start-ups never mobilise sufficient demand for their goods or services, are able to deliver to the required consumer standards or generate the working capital necessary to sustain the business - leader's capability to find new knowledge, to resolve new challenges and an ability to implement this knowledge is a critical factor - importance of different levels (1, 2, 3) of both individual and organisational learning - non-formal learning: experimental, learning-by-doing, etc. - 	<ul style="list-style-type: none"> - practical support of immediate value as they face a steep learning curve establishing the enterprise - supporting the start-up leader to align their personal goals with their business goals - creating facilitative, dynamic assistance - detailed knowledge of both the start-up leader and the business - providing encouragement, positive support, helpful advice and useful ideas - mentoring approach is more likely to be tactical than strategic i.e. winning the first customer, getting the cash in quickly, keeping correct financial records etc - giving meaningful and immediate practical advice - encouraging their mentees to develop or keep an eye on their business plan as a way of monitoring the progress being made and to determine the platform for survival or growth - to keep the mentee motivated and encourage them to persist
Sectorial trends	



Mature enterprises

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none">- new technologies and automation- increased need for cooperation between the various actors involved into the business- learning from failures- need for continuous monitoring of successes and failures	<ul style="list-style-type: none">- support the investment in the development of soft skills among staff- Building Information Modeling (BIM) methodology
Sectorial trends	



Enterprises in transition

Sectorial challenges	Skills and competencies mentioned
<ul style="list-style-type: none"> - understand the main challenges of the organization: new digital ecosystem and business model, the effort of the digitalisation and automatization to the main operation. - have a clearly defined, professional corporate governance system - establish and plan a strong and structured leadership succession process and the strategic change - creating an initial vision of how the business should operate in the future, - clarifying the goals, rules, and guidelines that every internal stakeholder must follow during the succession process, - defining the time plan and upstanding the milestones. - 	<ul style="list-style-type: none"> - Finance and legal environment - Government policies and government programs - Entrepreneurial education and training - Socio-emotional wealth and knowledge transferring - Professional organization, learning company - Succession planning - Effective communications system - Corporate governance - Effective change management - Mentoring, coaching, interim management - Corporate entrepreneurship and intrapreneurship
Sectorial trends	
<ul style="list-style-type: none"> - educate and train new staff - internationalization and export into new market - attract new talent - improve profitability - become more innovative - increase turnover, - develop more products and services. 	



The results of our sectoral analyses suggest that the both in case of the vertical and horizontal issues, mentor competences are quite diverse and hardly to compare as the institutional environment, the technological progress and economic circumstances affect the actors differently. The collected skills and competencies are disparate, containing both hard and soft elements. The other problem is that sectoral trends can change very rapidly, consequently the related competencies may become obsolete very quickly.

To overcome this dilemma, the consortium partners had a series of consultations and decided to identify the possible overlaps between the various issues and to define those key competencies that may serve as a common basis for the training material development. According to our final results mentors should behave in an altruistic and assertive manner and should be aware of the ethical principles and consequences of their activities. They should represent a holistic view of the problems SME owners have to face with but have to be a specialist in a particular economic field simultaneously. An ideal mentor is able to create and maintain positive and trustful human relations and inspire cooperation. The mentors' way of thinking is analytical and practice-oriented. He/she possesses high-level project management skills (e.g. is able to set objectives, clarify the assignments and give feedback), promotes the culture of learning and has advanced skills of transferring knowledge. Finally, two key competencies have been selected for the two types of issues. In case of horizontal issues, the main field of activities is strategy making, therefore strategic planning competencies are of utmost importance. These competencies include 1., analytical skills, e.g. the ability to analyse and evaluate the business activities of the client firm, depending on its maturity stage; 2., communication skills; 3., decision making skills, e.g. the ability to provide support to the SME owners in making decisions; 4., leadership skills and 5., problem solving skills, e.g. the ability of structural problems solving. In order to strengthen strategic planning competencies, the training course should provide knowledge on value creation methodologies.

In case of horizontal issues, the main task of the future mentor is to be able to understand the ecosystem of a particular sector, within the mentored enterprise operates. This competence comprises 1., the ability to collect, analyse and interpret data on the sectoral trends and challenges; 2., the ability to identify the key economic problems in a sector; 3., the ability to understand technological and market trends and 4., the ability to provide direct support to the mentees in solving his/her sector-related problems. The future mentors should possess various methodologies that support designing the enterprises' operation in the future, accordingly.

The next table summarises the key competencies in case of both vertical and horizontal issues, alongside with the relevant hard skills areas that should be developed during the MENTORCERT trainings.



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	Key competence	Hard skill areas connected to the competencies
Strategic orientation (horizontal issues)	Strategic planning	Value creation models
Entrepreneurial development (vertical issues)	Understanding the ecosystem	Futures





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