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THE CHANGING NATURE OF WORK. BRIEF AUDIT OF HUMAN CAPITAL IN ROMANIA

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Abstract: *The new picture of a person's life in the digital age assumes another philosophy of life, which practically cancels an important sequence with which we were accustomed: the educational cycle, the work cycle and the retirement cycle. The fact that the evolution of the technology will have a major impact on the way there we work and live has become a reality that we cannot longer ignore. More and more studies have lately analyzed the impact that technology will have on jobs in the near future. It is estimated that many of the skills sets associated with the future jobs will contain elements that are not considered "basic" today. There are analyzes that show that more than half of the children who begin their high school education today will have jobs that not currently exist. In these circumstances non-cognitive skills could to help individuals "to adapt better changing work and life environment". It is clear that the future of human resources is a digital one. Which means that the labor market is within a fundamental change. The lack of skills for digital jobs will be a major impediment to the development of many companies in the future. Romania is currently in the top of the countries with the biggest discrepancy between the need for staff and the capacity to fill the vacant positions. Looking from this perspective how prepared is it? Does it have a strategy for the future concerning the development and training of the key personnel to cover the lack of skills from present?*

Keywords: *analytical reasoning, artificial intelligence, cloud computing, critical thinking, DESI, digital skills, labor market, non-cognitive skills, unconventional patterns*

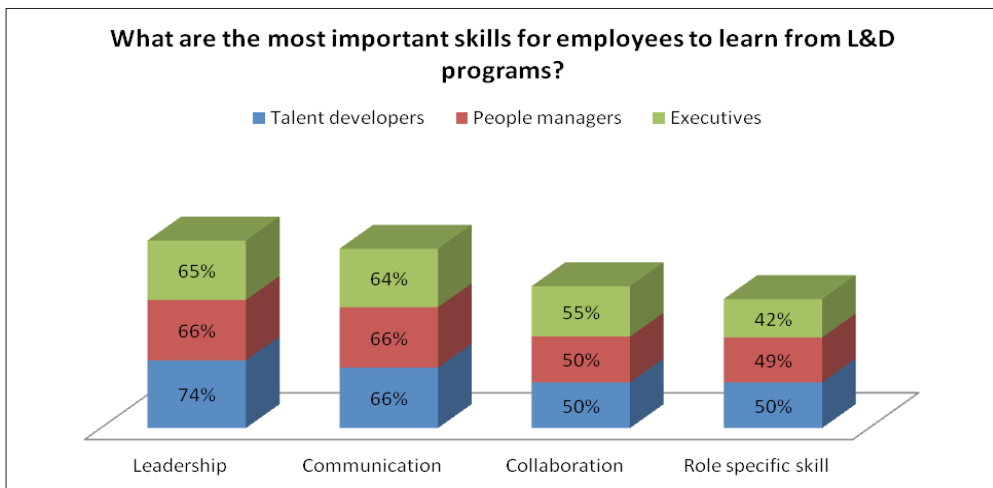
JEL Classification: *A14, F6, I25, J24*

1. General context

Beyond the controversies that arise in the public policy debate regarding the changing nature of work and skills it is an undeniable reality that technological changes have given rise to new forms of employment worldwide. Many of these are different from traditional “work”. They transform, on the one hand, the traditional relationship between employer and employee, and on the other hand, they are characterized by unconventional patterns and jobs.

According to an analysis on the networking LinkedIn, employers were interested in 2019 of a very interesting combination between the hard and soft skills of the employee, in which creativity is at the top of the desired attributes (Charlton, 2019). Practically, the conclusions were the same with those from the World Economic Forum’s Future of Jobs Report (2018), which has concluded that it is not excluded that with the advancement of technology and the automation, the human skills such *originality*, *initiative* and *critical thinking* grow greatly in value. The specialists argue that a “moderate level of digital skills and strong non-cognitive skills are expected to be required for most jobs in the future”.

Figure 1. What are the most important skills for employees to learn from L&D programs?



Source: Charlton, 2019 - LinkedIn Desired Skills

Basically, on the one hand, here are the top 10 skills required by employees in 2019 according to LinkedIn:

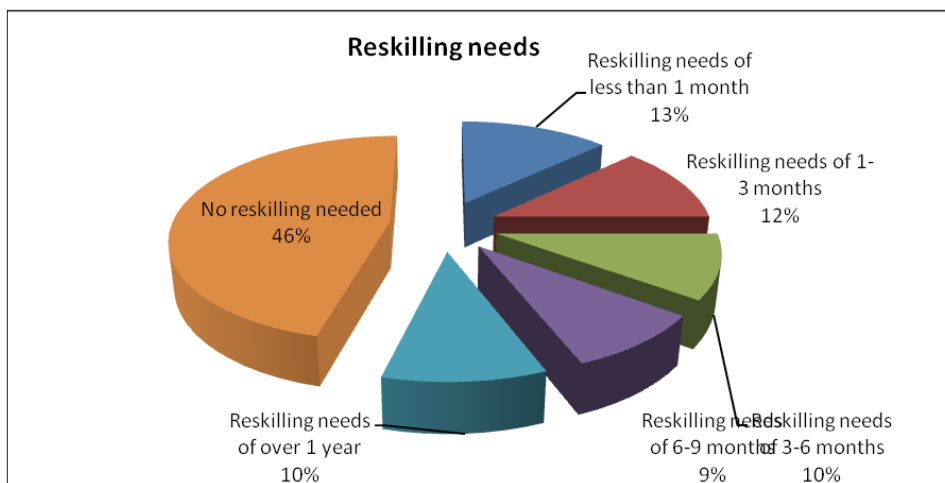
Table 1. The top skills companies needed most in 2019

	The top 5 soft skills companies needed most in 2019	The top 5 hard skills companies needed most in 2019
	Creativity	Cloud computing
	Persuasion	Artificial Intelligence
	Collaboration	Analytical Reasoning
	Adaptability	People management
	Time management	UX Design

Source: Charlton, 2019 - LinkedIn Desired Skills

On the other hand, the data show that there is an increase in the instability of competences due to the technology that changes the profiles of many current jobs for which different skills who are required. Which means that many unemployed people will need significant retraining and improvement in the coming years.

Figure 2. Expected average reskilling needs across companies, by share of employees 2018-2022



Source: World Economic Forum, 2018 - The Future of Jobs Survey

It should also be emphasized that it is certain that by 2030, according to specialists, about 210 million people worldwide will have to change their occupation and about 800 million workers worldwide will be exposed at risk of labour disruption.

The dynamics of these changes will surely build the following two strategies in the field:

- On the one hand, the education system will try to respond to the future demand for skills, emphasizing rather on equipping people with non-cognitive skills (skills who help individuals to anticipate the change);
- On the other hand, because formal education will probably not be sufficient, the implementation of a lifelong learning approach will become more than a functional requirement.

2. Digital Economy and Society Index Report 2019 Human capital¹

Since 2015 The European Commission has been monitoring the digital competitiveness of each Member State, currently targeting the following areas:

- the degree of readiness for using 5G networks,
- digital skills above the elementary level,
- basic skills in software (at least elementary competencies),
- ICT specialist,
- graduates in the ICT field,
- people who have never used the internet,
- professional social networks,
- taking an online course,
- consultations and online voting,
- online sales by individuals,
- large volumes of data,
- exchange of medical data,
- electronic prescriptions. (European Commission, 2019a)

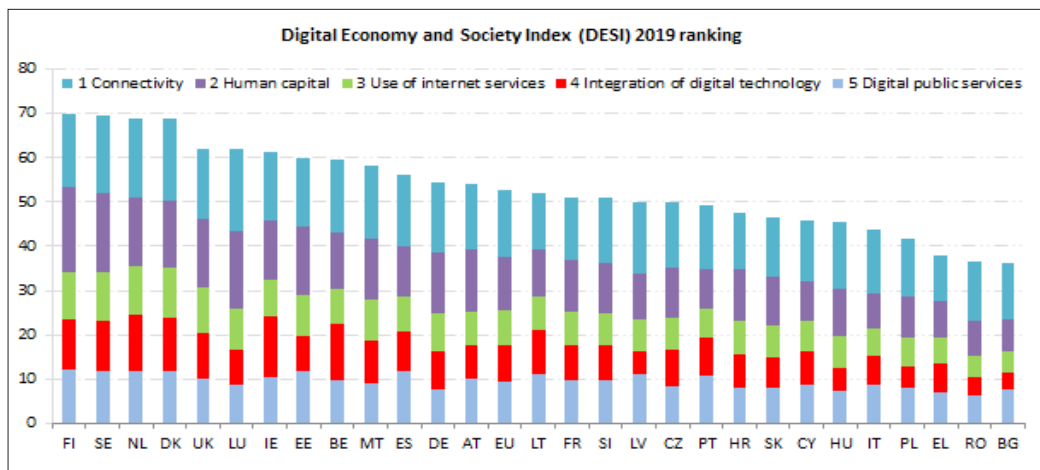
According to the DESI country reports that combine data from the DESI indicators in the five dimensions of the index with observations on the policies and practices specific to each country, the following observations can be made (see Figure 2, European Commission, 2019a):

- Nordic countries and the Netherlands scored the highest ratings in DESI 2019 and “are among the global leaders in digitalisation”;
- United Kingdom, Luxembourg, Ireland, Estonia and Belgium are the countries who closely follow the group of countries with a very high DESI index;

¹ The Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe’s digital performance and tracks the evolution of EU member states in digital competitiveness

- Even the EU as a whole needs improvement to be competitive on the global stage.
- In this European ranking Romania and Bulgaria occupy the last places and “still have a long way to go”.

Figure 2. Digital Economy and Society Index 2019 ranking / EU



Source: European Commission, 2019a

3. New forms of employment in Europe

Most of the discussions in the EU regarding the new forms of employment carry the burden of the several fears that in fact means following:

- What needs to be done to reach a more flexible and inclusive labor market?
- What should be the way of legalizing the employment practices that have not yet been declared?
- What needs to be done to ensure a real social protection and sound working conditions?
- How to avoid an unexpected tension created within the process of replacing standard jobs with less favorable terms of employment for workers?

Beyond the size of these debates, it is a certainty that the dynamics in the field are very high, according to specialists at least 9 new forms of employment have already been identified in the Europe countries since 2000 (see Table 2):

- **Employee sharing** – practically „an individual worker is jointly hired by a group of employers to meet the HR needs of various companies”, that means „permanent full-time employment for the worker”;
- **Job sharing** – practically hiring more workers to complete one job together, by combining two or more part-time jobs into a full-time position;
- **Interim management** – practically the temporary hiring of highly qualified experts for a specific project or to solve a specific problem (integration of external management capabilities in the organization);
- **Casual work** - practically the employer is not obliged to assure work regularly to the employees, but has the flexibility to request them in on demand;
- **ICT-based mobile work** - practically the workers can do their job from anywhere at any time, „supported by modern technologies”;
- **Voucher based work** - practically, the payment of services with a voucher „purchased from an authorized organization that covers both wage and social insurance contributions”;
- **Portfolio works** - practically a self-employed person who works for several clients in the same time, but on a small scale for each of them;
- **Crowd employment** – practically an online platform which replaces the employers and the workers „often with larger tasks being split up and divided among a ‘virtual cloud’ of workers”;
- **Collaborative employment** – practically the freelancers, the independent employees or micro-enterprises „cooperate in some way to overcome limitations of size and professional isolation” (Eurofound, 2015).

Table 2. New forms of employment identified in Europe countries

	Employee sharing	Job sharing	Interim management	Casual work	ICT – based mobile work	Voucher – based work	Portfolio work	Crowd employment	Collaborative employment
Austria	x					x			x
Belgium	x			x	x	x		x	x
Bulgaria	x								
Croatia				x					
Cyprus					x		x		x
Czech R	x	x	x					x	
Denmark					x		x	x	
Finland	x								
France	x		x	x	x	x			x
Germany	x				x			x	x

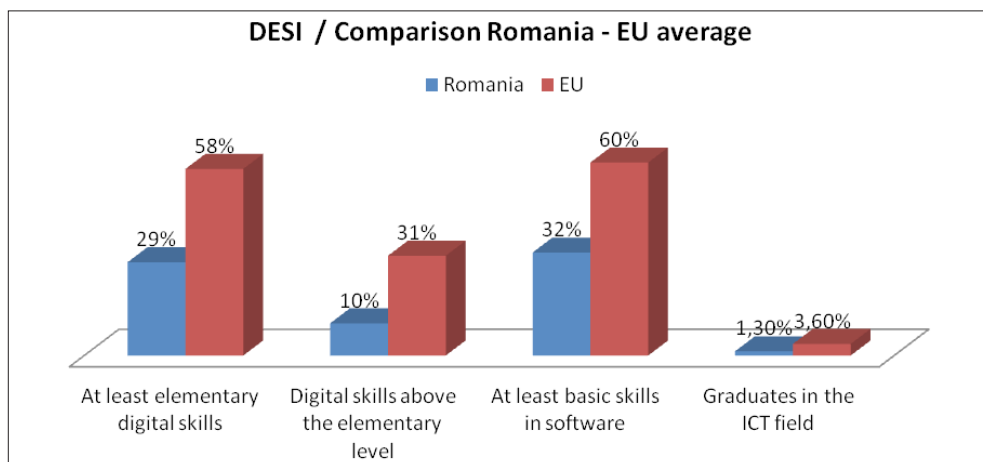
Greece	x		x		x	x	x	x	x
Hungary	x	x	x	x	x				
Ireland		x		x					
Italy		x		x		x	x	x	x
Latvia			x		x		x	x	
Lithuania					x	x	x	x	x
Luxembourg	x								
Netherlands				x	x		x		x
Norway			x		x		x		
Poland		x							
Portugal					x		x	x	
Romania				x					
Slovakia		x		x					
Slovenia		x		x					
Spain					x			x	x
Sweden				x	x				x
UK		x	x	x			x	x	

Source: Eurofound, 2015, *New forms of employment*

4. Romania – short overview

The world is changing. The new digital technologies will produce substantial changes in people’s lives. New patterns of socio-economic life are likely to emerge. More than half of employees worldwide feel threatened by automation. And many more will have to learn new digital skills. How prepared is Romania from this perspective? A comparison between Romania and the EU regarding DESI (Digital Economy and Society Index) identifies some serious issues:

Figure 3. DESI / Comparison Romania - EU average



Source: European Commission / DESI Report 2019

According to the Country Report 2019 Romania is currently ranked 27th :

Table 3. Overview of Romania

	Romania / Rank	Romania / Scores	Scores / UE
DESI 2019	27	36,5	52,5
DESI 2018	27	35,4	49,8
DESI 2017	28	32,0	46,9

Source: European Commission, 2019

- Romania has the best results in the “Connectivity” dimension, due to the large-scale availability of high-speed and very high-speed broadband networks (especially in urban areas);
 - But the Romania has ranks 22nd in terms of connectivity, because the progress has been slow;
- The digitization of the economy has lagged behind, given that more than one fifth of Romanians have never used the internet and less than one third have basic digital skills;
- Romania has the worst performance in terms of digital public services among all member states (even if it ranks 7th in terms of the share of e-government users);
- The digital gap between urban and rural areas is very high in Romania;
- In terms of human capital size, Romania ranks 27th among EU countries, well below the EU average. The levels of basic and advanced digital skills remain the lowest among EU Member States (see Table 4).

Table 4. Human capital and digital skills / Romania versus EU

	Romania				EU DESI 2019 Value
	DESI 2017 Value	DESI 2018 Value	DESI 2019 Value	Rank	
At least elementary digital skills	28% 2015	29% 2017	29% 2017	28	57% 2017
Digital skills above the elementary level	9% 2016	10% 2017	10% 2017	28	31% 2017
At least basic skills in software	30% 2016	32% 2017	32% 2017	27	60% 2017

IT specialists	1,9% 2015	2% 2016	2,1% 2017	27	3,7% 2017
IT specialists (women)	1,2% 2015	1,2% 2016	1,3% 2017	16	1,4% 2017
Graduates in the ICT field	NA 2014	5,4% 2015	4,9% 2016	6	3,5% 2015

Source: European Commission / DESI Report 2019/ Romania

Regarding the use of Internet services the picture looks like in the Table 5:

Table 5. Use of Internet services / Romania vs EU

	Romania				EU DESI 2019 Value
	DESI 2017 Value	DESI 2018 Value	DESI 2019 Value	Rank	
People who have never used the internet (% people)	30% 2016	27% 2017	21% 2018	24	11% 2018
Internet users (% people)	56% 2016	61% 2017	68% 2018	27	83% 2018
News (internet users)	63% 2016	69% 2017	69% 2017	24	72% 2017
Music, video and games (internet users)	67% 2016	67% 2016	63% 2018	28	81% 2018
Video on demand (internet users)	6% 2016	6% 2016	10% 2018	26	31% 2018
Video calls (internet users)	45% 2016	53% 2017	51% 2018	15	49% 2018
Social networks (internet users)	74% 2016	82% 2017	86% 2018	1	65% 2018
Professional social networks (internet users)	6% 2015	6% 2017	6% 2017	25	15% 2017
Following an online course (internet users)	4% 2016	5% 2017	5% 2017	23	9% 2017
Consultations and vote online (internet users)	4% 2015	5% 2017	5% 2017	23	10% 2017
Banking services (internet users)	8% 2016	11% 2017	10% 2018	28	64% 2018
Shopping (internet users)	18% 2016	23% 2017	26% 2018	28	68% 2018
Online sales (internet users)	5% 2016	4% 2017	5% 2018	26	23% 2018

Source: European Commission / DESI Report 2019/ Romania

According to Workforce Disruption Index study (PwC, 2019), until 2029 approximately 600,000 jobs in Romania will be affected by technological advancement. More precisely about 275,000 jobs will disappear (from production, agriculture and utilities), while 325,000 will be created (especially in health, education and services). For this to happen, there is a requirement for employees to acquire new digital skills or develop existing ones, adapting them to the new professions.

Conclusions

- The current high level of inconsistency of the workforce competencies of the Romanian companies will limit in the following years their innovative capacity;
- To fully benefit from the digital economy, Romania needs to ensure the increase the number of IT specialists and also the training of teachers and the workforce for the new digital era.

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