A CHANGING LABOUR MARKET – ECONOMIC RECOVERY AND JOBS

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Abstract

At European level, the labour market is faced with the same factors of change as the ones at global level: massive technology implementation has allowed for replacing especially middle-skilled jobs with automations, robots and mechanizations. Thus, an ascending trend is registered in the increase of the polarisation degree on labour market.

The existence of three simultaneous generations on the labour market for whom the adjustment to its changes is slowed down as result of austerity measures, diminished opportunities of training within organisations (at least during the period of the crisis), and the changes of perspective and of operating within organisations which is noticeable increasingly more in the post-crisis period. Lifelong learning is gains new values and is more frequently accompanied by the new concept of "agile learning".

Competitiveness, innovativeness, and performance will depend in this context on the way in which policies, actions and measures on the labour market addressing the labour force will succeed in providing solutions for adjusting the labour force to change and the new requirements from the perspective of competencies, skills, and knowledge.

The paper presents a brief review of the post-crisis trends on the EU-28 labour market, with emphasis on the New Member States and in particular with respect to Romania considering the needs of achieving the national and European goals of economic growth and social development.

Keywords: labour market, economic growth, jobs' polarisation, competencies, policies

Rezumat

La nivel european, piața muncii se confruntă cu aceeași factori ai schimbării ca cei remarcați la nivel mondial: implementarea masivă a tehnologiilor a permis înlocuirea mai ales a ocupațiilor cu nivel mediu de pregătire cu automatizări, robotizări și mecanizări. Astfel, se remarcă o tendință în creștere a gradului de polarizare a pieței muncii.

Existența a trei generații simultane pe piața muncii pentru care adaptarea la schimbare a fost îngreunată ca rezultat al măsurilor de austeritate, a oportunităților reduse de instruire în cadrul organizațiilor în care-și desfășurau activitatea (cel puțin pe perioada crizei), precum și a schimbărilor de perspectivă și de derulare a operațiunilor în cadrul organizațiilor, fapt care s-a intensificat în perioada de postcriză. Învățarea pe tot parcursul vieții capătă noi valențe și este tot mai des accompaniată de conceptual de "învățare agilă".

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Competitivitatea, inovativitatea și performanța vor depinde în acest context de modul în care politicile, acțiunile și măsurile de pe piața muncii adresate forței de muncă vor reuși în asigurarea soluțiilor pentru adaptarea acestei forțe de muncă la schimbare și la noile cerințe din perspective competențelor, calificărilor și cunoștințelor.

Lucrarea prezintă o scurtă analiză a tendințelor post-criză de pe piața muncii din UE-28, punând un accent deosebit pe Noile State Membre și în special pe România, având în vedere necesitățile de atingere a obiectivelor naționale și europene de creștere economică și dezvoltare socială.

Cuvinte-cheie: piața muncii, creștere economică, polarizarea ocupațiilor, competențe, politici

Cod JEL: F64, F66, I25, J21, J24, O14 Cod REL: 12A, 12I, 12A, 12Z, 18Z, 20F

1. Digitalization and computerization as impact factors in changing the labour market

Up to the middle of the 20th century, the labour market was defined in terms of demand and supply of labour force, in the ones related to education and training, to human resources' productivity, and those of human capital's competitiveness. Thus, it could be estimated that there was a certain correlation between technological progress, productivity increase and the training levels of labour force.

The baby-boom of the sixties and seventies ensured the labour resources for all industrial sectors, for services and agriculture, with reasonable levels of unemployment and without registering any worrying signs about diminishing replacement rates on the labour market, or about considerable deficits on fields and sectors. Also, the educational offer met to its largest extent the foreseeable and predictable demand for labour on short- and medium term.

Yet, by the end of the eighties and beginning of the nineties and up to now a paradigmatic change took place on the labour market regarding three determinant relationships: demand and supply, competitiveness, education/training and adjustment to the change of the human capital. The change was already implied by the implementation of increased requirements with respect to education (higher education targets of the European agendas and the Bologna process), and regarding vocational training (implementation and marked promotion of the requirement of lifelong learning) and was accompanied and dominated by evolutions that completely change the picture of economic predictability on fields and sectors. This change, to its vast majority, is due to the intense implementation of automation, robotics and digitalization and to the increasing importance given to those fields and sectors that became known as "knowledge-intensive".

In the present paper, considering the vastness of the topic, we shall limit the references to the countries of Central and Eastern Europe, from a comparative perspective to the countries from Western Europe and, more specifically, we shall focus on some selected countries from among the member-states of the European Union.

Between these two categories of countries – developed and developing ones of the EU – the divergence seems to increase and turn more significant, and the determinant

factors for these increasing differences of the last period are, as opposed to other stages, triggered to a larger extent by the influences exercised by the increasing digitalization degree and access to high-tech at national and individual level; on the available capacities for investments in the fields which configure themselves now to shape the industry and services of the future, but also health, education and culture, on the possibilities of generating incomes especially by increased valuation of innovations, of research-development outcomes directly in enterprises for obtaining superior manufacturing and products, including vocational and professional expert training that meet the increased demand for flexibility. We wish to emphasize that at a level requiring more in-depth empirical but also mathematic-statistical analyses, these influences are, in their turn, shaped by complex sets of information, combined with the tradition, culture and way in which the institutions of these countries have managed to adjust to the changes triggered by technology, innovation and the development of the specific "knowledge-intensive" sector.

Moreover, another essential component is the current existence of three simultaneous generations on the labour market that find the beginnings of their active life and on the labour market in three distinct stages: (i) the baby-boomers generation that is approaching the retirement age and whose expectations in identifying a job on the labour market that meets both expectations and their skills are increasingly more restrictive; (ii) the transition generation for whom the automation process, respectively the growing complexity of all economic sectors was during their entry on the labour market or, at most, during the midterm of their active life and on the labour market / that is, this generation was the one 'forced' to ongoing adjustment and to learning 'on the go' the requirements of continuing more different contexts and in continuing change of the workplaces and, finally, (iii) the present generation of youths who grew up while the new technologies registered leaping progresses and who are now in the transition from school to labour market. The highest difficulties are encountered by this last generation who are faced, leaving aside the lack of experience, with two types of challenges since the beginning of the crisis, and even now in the post-crisis period: the challenge of overqualification which often forces them to get employment under their level of education or training, and the one of mismatch between the acquired skills and competences and the actual job requirements.

The policies on the labour market must address these three broad generational categories, and the objective of the Europe 2020 Strategy (75% employment) might not be reached, in the context of fragile economic growth and uncertain economic recovery which is based more on increasing the automation, robot-use and digitalization of manufacturing processes and systems, and less on the valuation of human resources.

2. The European context and Romania's particularities

Currently, economic growth is still uncertain as it is influenced by two types of associated complex phenomena: (i) maintaining the austerity imperatives while the financial-banking system continues to dominate by imposed restrictions the decisions in all other economic sectors; (ii) the increased appetite of public and private enterprises, irrespective of size and activity sector to maximise profits and diminish costs, preferably by quickly putting to good use the newest 'edge' technologies, automations and robots.

From these two phenomena, the one with maximum impact on the human capital and on the generations who are at the age of their active life and who are also

(potentially) in the labour market is the increased appetite of implementing swiftly and at a high rate the newest technologies for maximising profits and diminishing labour costs.

The last years were marked by the emergence of several types of disruptive businesses, and the use of new manufacturing types such as the 3D technology which meets several important objectives of the last decade: allows for delivering the customer according to the requirements right in its proximity, provides also the fingerprint of product localisation and uniqueness, and also meets the needs and demands of complexity management. Thus, this technology shall allow for exclusive or 'unique series' thus anticipating a trend that shall soon become, perhaps, the norm in certain select fields. A concrete example in this respect is the company Shapeways – a Philips Electronics company spinoff which created a market for users: these can choose their own design, materials and generate their own product by means of 3D equipment. Thereafter, the company takes over the manufacturing of the individualised product and the shipping to the customer. Moreover, as a sign of the success of this initiative, the company recently expanded to a decentralised manufacturing network model, by opening a factory of the future in Long Island, New York. This Factory has the capacity to manufacture 3 to 5 million products per year with the aid of about 50 3D printers.

Even though still a manufacturing niche, the 3D technology market proves thus that its applications cover a wide range that can be used by various fields and actual expansion possibilities from health to automotive industry. Just the same, completely automated manufacturing processes, in the absence of the human factor and performed by robots (examples could be the well-known high-tech Phillips razors, manufactured by means of a system built by Adept Technology, or the robots of the automated equipment supplier FANUC which in their turn are assembled by other robots without the need of human intervention during the actual manufacturing process)².

Thus, it can be noticed that the main dissociation which constitutes a risk factor at European and national level is the one between the requirements of a changing economy as result of the processes triggering the 4th industrial revolution and the actual mitigation capacities by which assurance could be provided that this type of economic growth shall not turn into a higher threat for the labour force and its employment chances.

The answer needs to be identified and approached on three essential levels:

- i) institutionally by reconfiguring the institutions so as to ensure the agreement between the imperatives of economic growth and the social ones that were for a long time neglected in favour of pursuing the economic goals;
- ii) the public-private cooperation level for identifying measures, actions and innovative methods for stimulating labour demand and managing the complex economic context which is continuously changing;
- iii) expanding the collaboration between the public and private sector and the educational and vocational/professional training system for encouraging measures and actions of skilling re-skilling specialisation and professionalization and this especially because part of the reasons for skills' mismatch is found in the occupations, professions and specialisations that imply the complete valuation of STEM competences, of cognitive

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https://www.atkearney.com/paper/-/asset_publisher/dVxv4Hz2h8bS/content/new-manufacturing-technologies/10192

and creative capacities in fields that are shaped now and which shall determine the future as result of the technological progresses based on 3D, artificial intelligence, nanotechnologies, biotechnologies and on the internet of things in industries and services.

The current situation brings back to the forefront the Keynesian idea about the relationship between technological progress and job creation proven also by the study from 20133, which reconfirmed the main trends regarding employment. In this study, Osborne and Frey (2013) drew attention to the fact that several jobs vanished during the crisis and their (re)creation is improbable as result of the intensive implementation of automated solutions – even if not as radical as the ones mentioned above – at the level of companies. The authors concluded that there are such risks for about 47% from total occupations in the US4, and the European think-tank from Brugess calculated that these risks vary between 47% for Sweden and Great Britain, and that the probability increases to up to 62% in the case of Romania with respect to occupations⁵.

This observation is confirmed, to a certain extent, if we consider the evolution of occupations in Romania, and in particular of the occupations in the knowledge-intensive industries and services. Thus, the percentage of professionals in technology and knowledge-intensive sectors at national level increased from 10.1% in 2008 (NACE Rev. 2) in Romania to 13.5% in 2014, yet the gap remains considerable considering the rapid development of employment in the United Kingdom from 14.3% (2008) to 24.5% (2014), that is above the EU-28 average employment of 18.6%. The employment for this category of professionals was constant in all selected countries, but UK had the steepest increase (see Table 1). Another observation that can be made, is that among the selected countries, similarities can be noticed in the developments recorded by the New Member-States and the former member-states of convergence and cohesion (Spain, Portugal, Greece).

Table 1. Professionals' employment in technology and knowledge-intensive sectors at national level, by type of occupation 2008-2014, (NACE Rev.2) in %

Country	2008	2009	2010	2011	2012	2013	2014
European							
Union (28							
countries)	13.8	14.3	14.6	17.8	18.1	18.4	18.6
Bulgaria	12.3	12.7	13.0	15.5	15.3	15.6	16.6
Czech							
Republic	11.0	11.6	10.4	12.6	13.8	14.5	15.0
Germany	14.4	14.9	15.2	17.4	16.7	16.7	16.9
Greece	14.8	14.8	15.3	17.7	18.7	19.5	18.8
Spain	12.9	13.9	14.5	16.3	17.1	17.6	17.5

³ Frey, Carl Benedikt, Osborne, Michael A. (2013). The Future of Employment: How susceptible are jobs to computerization?,

⁴ ibidem

http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

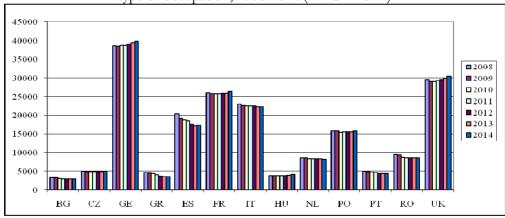
⁵ http://bruegel.org/2014/07/the-computerisation-of-european-jobs/

France	13.6	13.8	14.1	16.6	17.2	17.1	16.7
Italy	10.4	10.3	10.0	13.3	13.7	14.2	14.3
Hungary	13.9	14.7	15.0	15.9	16.3	16.2	15.5
Netherlands	19.6	19.8	19.9	22.6	22.9	23.9	24.4
Poland	15.0	15.9	16.5	17.1	18.0	18.4	18.8
Portugal	9.1	9.6	10.1	14.4	15.2	15.6	17.0
Romania	10.1	10.3	10.7	13.8	13.4	13.0	13.5
United							
Kingdom	14.3	14.8	15.2	24.1	23.9	24.4	24.5

Source: Eurostat data, htec_emp_nisco2

The above image becomes even more worrying, if we consider the overall employment in technology and knowledge-intensive sectors for the entire period 2008-2014 by occupations (NACE Rev.2). It shows that one major reason for the increasing discrepancies between the New Member States (NMS), the former member-states of convergence and cohesion and the Old Member-States can be found in the developments in these sectors that shall register the highest increases also in the future (see Fig. 1).

Fig. 1 Employment in technology and knowledge-sectors at the national level, by type of occupation, 2008-2014 (NACE Rev.2)



Data source: Eurostat data, htec_emp_nisco2

Employment and making full use of the potential provided by the knowledge-intensive sectors in EU-28 and Romania shall become even more relevant in the following years, as the time horizon 2020 represents a true challenge in this context, in particular for the former convergence and cohesion member-states and the New Member States (NMS).

The percentage of employment in knowledge-intensive industries and services reflects the almost complete reorientation of European and world economies on one hand, and on the other opens new dimensions regarding internal competitiveness between the member-states of the European Union. In this respect, we mention the situation corresponding to the year 2012, when Romania was placed, unfortunately, on the last position with respect to employment in such fields, with a percentage of under

30% in total employment, whereas the same percentage was of over 50% for the developed economies of the EU-28.

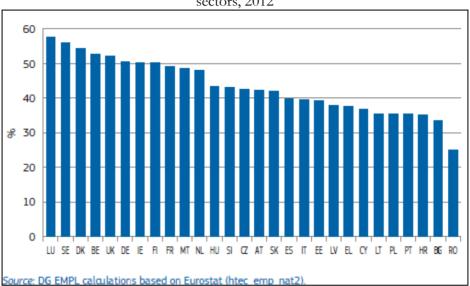


Fig. 2 Employment percentage in knowledge-intensive manufacturing and services sectors, 2012

In the period preceding the crisis, over 30 million new jobs were created. Yet, by the end of 2008 almost 6 million of them vanished, and unemployment continued to register 2 digit figures, the peak being a rate of 11% of EU-27(28) unemployment up to the year 2013. Unemployment continued to generate severe effects, the last statistical data for the months of August 2015 indicating a seasonally adjusted unemployment rate of 11%, on relative decrease against 11.5% in August 2014 for the Euro area. As a whole, at EU-28 level, the unemployment rate was of 9.5% in August 2015, relatively stable as compared with July 2014 and on a decreasing trend against 10.1% in August 2014⁶.

The trends regarding unemployment are increasingly more comparable with the gap referred to between Northern and Western Member-States and the ones of Central, Eastern and Southern Europe, with the lowest unemployment rates recorded in Germany (4,5%), the Czech Republic (5.0%) and Malta (5.1%), and the highest in Greece (25.2% in June 2015) and Spain (22.2%) for the same period⁷, whereas in the NMS the highest long-term unemployment rates were registered in Croatia where from an unemployment rate of 6% in 2007 before the outbreak of the crisis, the unemployment reached 10.1% in 2014 for the age group from 15 to 74 years of age. Romania succeeded to maintain long-term unemployment at relatively reasonable levels, where from 3.2% (2007) it decreased to 2.8% for the age group 15 to 74 years in 2014.

Despite maintaining low levels of long-term unemployment, the situation is not encouraging and the explanations can be found, in our opinion, one hand in the failures

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 $^{^6\} c. europa. eu/eurostat/statistics-explained/index. php/Unemployment_statistics\#Main_statistical_findings$

⁷ According to Eurostat statistics.

recorded by Romania on several issues: firstly in delayed reform processes, and lacking monitoring and evaluations before initiating a new 'reform in reform' such as in the case of the education system; the delay in putting to good use the vocational training, retraining and improvement opportunities for the existing labour force partly because of the still predominant use of mostly passive social protection measures, instead of the active measures on the labour market, and on the other hand to the unpredictability of the business environment associated with strict and rigid regulations on the labour market that do not encourage either the business environment nor the individuals to be more involved in such projects and programmes.

A risk derived from the above-mentioned is the loss of the competitive advantage in Romania: if up to now it was alleged that there is the attractiveness of the cheap and well-skilled labour force, as of the 2000s this attractiveness decreased constantly.

The increase in the labour costs is an additional factor of discouragement in the context in which the 'reform in reform' of the educational system generated and continues to generate delays of curricula adjustment at all levels to the new trends of the economy and society.

A fact is certain: the current trends of development for the industrial and services' sectors shall generate jobs and in complex occupations and professions, cross- and interdisciplinary, dominated by the use of high- and medium-high-tech. Yet, the essential condition for achieving new and better jobs according to these developments is the extended and institutionally regulated collaboration between public and private institutional stakeholders on one hand, and on the other hand of these stakeholders with the educational systems and the social ones in order to provide some guarantees for retaking a sustainable, intelligent, and 'green' economic growth at EU-28 level.

This finding is supported also by the outcomes of the first pan-European CEDEFOP Survey⁸ which, among others, mentions that the majority of new jobs, professions and trades shall be increasingly more acquired on the job, which implies also the need for more investments – as these were much diminished during the crisis period – in fostering, developing and diversifying knowledge and skills.

Thus, a new concept which is recently more often associated with lifelong learning becomes important, respectively 'agile learning'9, which represents an additional chance in the tenuous adjustment of the labour force to the changes in industry, services and in the economy and society as a whole.

Even the expectations of the active population in the labour market confirm this approach: 47% of the adult individuals active in the labour market of EU-28 were witness and continued to be active while the technologies they used changed at a fast pace, and they assume that also in the future they will have to deal with this type of

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 $^{^{8}\} http://www.cedefop.europa.eu/en/news-and-press/press-and-media/press-releases/europe-needs-better-jobs-better-matched-skills-cedefop$

⁹ By agile learning (as a first tentative definition) is understood the capacity of adjusting skills, competences and abilities acquired within an organisation, or based on a certain type of education/vocational training and which were employed in a certain job to other, various, different and flexible contexts, in different fields of specialisation than the previous one in which learning took place with respect to competences, skills and knowledge.

process; moreover, 21% of these individuals believe that many of their competences and skills shall become obsolete in the following five years. Noteworthy and an indicative is also that the majority of those interviewed were professionals and technicians in ITC and financial sectors, including manufacturing and services¹⁰.

If we link agile learning to expectations expressed in this survey, we find that one of the main issues determined at European level by the differing educational systems, but also by the institutional culture regarding education and learning is the one about the options of each member-state for encouraging to a wider or lesser extent learning on the job and, implicitly, for encouraging in the future agile learning.

Additional attention should be given to the concerns about the wide differences on fields and sectors about the interrelationships between formal and informal learning.

Thus, one of the most restrictive fields with respect to informal learning is represented by humane sciences, languages and arts, followed by other social sciences, whereas informal education on the job is mostly representative for security, transports, person services, health and health care related services (see Fig. 3).

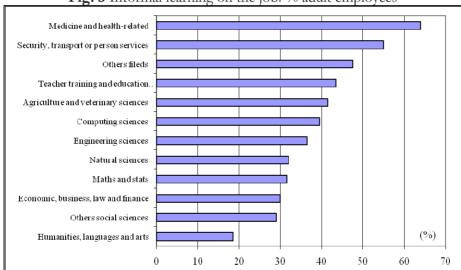


Fig. 3 Informal learning on the job. % adult employees

Data source: Cedefop, European Skills and Jobs (ESJ) Survey, 2014

In Romania, the dual education system is still in an incipient stage as measures are necessary to encourage its development, along with increasing the emphasis on active labour market measures, and curb down the present tendency of putting to good use mostly passive social protection measures.

Moreover, the education system, the business sector, the manufacturing and services' sectors should strengthen their collaboration for promoting research-development and innovation at national level considering the existence of a worrying gap

 $^{^{10}}http://www.cedefop.europa.eu/en/news-and-press/press-and-media/press-releases/europe-needs-better-jobs-better-matched-skills-cedefop$

in this respect between Romania and EU developed countries, but also between Romania and some of the NMS.

Encouraging alternative educational paths, with the possibility of transiting and promoting from one system to the other, as well as encouraging employers to support lifelong learning, and skilling/re-skilling courses could contribute to avoid increasing the disjunction regarding the economic development on the main axes as configured by the industrial and services' sectors between Romania and its main competitors from Central and Eastern Europe.

Also, such an approach would have as effect also the increase of productivity and of the value added of products' and services' at national and European level.

Identifying methods and ways of recognising competences, knowledge and skills acquired informally on the job, as well as promoting agile learning on the job would provide for increased chances of employment for those seeking a job, for maintaining a well-trained and skilled labour force, with constantly updated knowledge and competences.

Informal learning on the job, combined with developing essential skills and competences for agile learning will allow on one hand for increasing employment opportunities at individual level and, on the other hand, it represents one of the factors contributing to increasing productivity at national level, regional and local level. The reasons is that the informal environment allows for improving competences by ensuring improvement of the already gained competences, and also acquisition of either complementary or completely different new ones, which are useful in the respective context and can be applied further in diversified other contexts.

Romania is faced with multiple risks, of socio-demographic nature, respectively rapid population ageing, youths' migration which is also a massive brain-drain; risks generated by the educational system due to postponed, delayed or partial reforms which impeded the design of curricula in accordance with the current demands of an increasingly more competitive and constantly changing labour market; risks generated by the industrial and services' sectors in particular with respect to high-tech and medium-tech competitiveness.

3. Instead of conclusions

The labour market was and continues to be affected by rapid changes in: (i) the economic environment (changes in the nature of jobs, of job requirements, increasing complexity, change of organisational structures for mitigating the demands of the new industrial development stage); (ii) in the used technologies (internet, automation, digitalisation, artificial intelligence, nanotechnologies, biotechnologies, etc); (iii) social change with increasing representativeness of the middle-class (in particular in the developing countries of the EU-28); (iv) swift urbanisation; (v) the demographic change, that is ageing population – the common trait of both developed and developing countries of the EU-28. All these developments, combined, have as outcome a change in the social perceptions and expectations of the current generations, as the economic framework changes also, along with the concepts regarding standards of living, the quality of life, all influenced by the facilities provided with respect to having access to and making use of high-tech products and services, inclusively for health, and finally by redefining, thus, the work-life balance.

The jobs lost during the crisis period will never be recovered based on the premises created by the programming exercise 2000-2010. At the same time, the technological progress along with the implementation of innovation which from an institutional viewpoint were not very well managed considering the agreement and relationships with other relevant institutions and the impact on the labour market and the human capital risk to increase divergence and discrepancies with respect to wages, investments, competitiveness, etc. on medium- and long-term.

In order to attenuate divergence at European level, all member-states would require measures of economic and social policy directed towards:

- i) redesigning the educational system but by avoiding reform in reform methods, or successive reforms that do not allow for evaluations of the outcomes up to the time of the new reform, or for better and closer coordination and collaboration with the main systems and subsystems of the business environment, including main stakeholders and companies in industry and services;
- ii) evaluating and recalibrating the structure of national economies for identifying main competitive advantages based on selective country, region etc., specialisations;
- iii) reconfiguring social systems for increasing their flexibility and for their better and swifter adjustment to changes in the economic environment;
- iv) evaluating and updating contractual forms in the field of labour legislation which currently characterise the labour market, in fact, this could be actually the first important step, if more in-depth analyses are made not only regarding demographic trends, but also the decisive changes characterising the generations born after 1990: many youths tend to maximise their opportunities by punctual cooperation with companies, start-ups, even if they are not the entrepreneurs setting these companies up, or by collaborating with other types of companies and innovative organisations and abandoning the consecrated success models of the past such as, for instance, employment with multinational companies and corporations.

This approach is more than necessary in the current stage of uncertainty and difficult creation/generation of new jobs, and the supply of punctual activities, for a determined period of time, and other such formulas of activity begin to exceed not only in volume, but also as practical achievement the traditional evaluation formulas according to the classification by temporary labour contract, determined period labour contract, part-time contract, etc.

Future generations begin to perceive these contractual conditions as a new and full of challenges framework for their personal and professional development, which allows them to particularise and individualise their career path and maximise incomes during the entire active lifetime.

Yet, this type of economic behaviour includes also risks for the social insurance systems, for the national fiscal systems and even for the individual in question, if not accordingly managed.

This is precisely the type of challenges that must be answered to by the European institutions and institutional frameworks in the next period. Therefore, a fresh approach is necessary with respect to institutions and their filtering based on certain criteria that would answer to a corresponding set of questions: are these strong, stable institutions for which the improvement could generate better outcomes? Or they are institutions and institutional

frameworks created to mitigate punctually some certain circumstances and states-of-affairs? As an example, there could be instances in which an institution could become useless or even counterproductive. The answer to these questions by taking into account the current stage of industry and economy change allows for establishing their economic and relevance and importance, but more importantly, for their correct framing into a new socio-economic context triggered by the knowledge society and economy that will change decisively also the labour market in the following ten to twenty years.

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