

New Industrial Policy or New Industrial Revolution for Increasing European Competitiveness?

Mihaela BUICA^a

^a Student Ph.D., Academy of Economic Studies, Faculty of International Economic Relations, Bucharest, Romania, mihaelabuica2002@yahoo.com

ARTICLE INFO

Article history:

Received: April 10, 2016

Received in revised form: April 13, 2016

Accepted: April 15, 2016

Available online: April 20, 2016

KEYWORDS : European competitiveness, new industrial policy, new industrial revolution, Europa 2020 Strategy, Digitizing European Industry, economic and social implications

ABSTRACT

Digitalization is undoubtedly a reality all over the world and, in Europe, at the national and regional level of the Member States, amid spectacularly rapid development of the Information Technology and Communication sector (ICT) is currently implementing several initiatives concerning digitization industry, as well as Industry 4.0, Smart Industry, Industry du Future, etc. This "movement" in the development of industry is classified by experts in the field as "The fourth industrial revolution".

However, as any change, it can have either a positive or a negative impact upon the economy. As we can easily notice, considering the major positive impact of digitalization, there is a tendency of adopting such a position, without taking into account its negative consequences. As such, in this context we are faced with an important dilemma, a motivated choice between two different strategies for increasing European competitiveness: a moderate increase through classic industrial policy tools and a spectacular increase based on the new technologies derived from the global tendency toward digitalization, with its intended and unintended consequences, or a combination thereof.

Being faced with a vast research subject, which can form the basis of multiple papers covering its various aspects, this first part will use a comparative method in order to analyze the evolution, main points and the paths forward for the two facets of industrial policy at European level: the new industrial policy detailed in the Europa 2020 strategy and the so called new industrial revolution seen as a template of industrial modernization starting from the national level and being influenced by the global trend toward digitalization. This analysis was accomplished with the goal of presenting a clear image of the industrial policy as it is seen at European Union level and taking into account the opportunities presented by the new technologies and the long term tendencies that affect its growth.

As a conclusion, taking into account that society has known three other industrial "revolutions" with significant impact upon our way of thinking and our way of life, analyzing the various economic but also socio-political implications of a coherent industrial policy in the age of digitalization is an important and necessary step.

Introduction

Europe 2020 strategy [1] is, in essence, the strategy of the EU response to globalization, focusing both on the immediate challenge of the recovery and the long-term challenges, focusing on competitiveness ("sustainable recovery").

As part of the Europe 2020 strategy, by the end of 2020, the EU has set five essential objectives regarding employment, research and development, energy/climate, education,

social inclusion and poverty reduction, putting the spotlight on industrial policy with a view to stimulate economic growth and competitiveness in the production sector and the EU economy as a whole.

On the other hand, given the spectacular development of digital technologies and initiatives in this field, Member States have identified an opportunity to increase their competitiveness through adaptation and integration them in the industry. Thus, the new industrial revolution or the Fourth industrial revolution has started. The first revolution was triggered by water and steam, the second by electricity and the third by electronics and information technology. The Fourth is an evolved form and a continuation of the Third.

The European Commission has noticed this trend and the benefits it can bring the ICT to industry and launched a European strategy for the digital transformation of the industry which complements the Digital Single Market Strategy, the upgrade of digital infrastructure, and the numerous initiatives at Member States and regional level. As shown on the website of the European Commission regarding Digitising European Industry, this strategy aims to establish links between national and regional initiatives, providing the necessary degree of coordination and helping to reach critical mass where individual initiatives cannot achieve the right scale on their own.

So, there is an important subject, namely industrial policy which is expected to fulfil its role in the economy, in the face of strong and rapid global transformation and an economic and technological revolution which may represent an opportunity for economy but, in the same time, a threat for society "societal disruptions may include a further rise of unemployment, increasing inequalities and the impoverishment of the middle classes in developed countries, including in Europe" [2].

More than this, the results from two types of assessment of the Europe 2020 strategy, namely its assessment of the mid-term review of and the assessment of the European Semester, all the data indicate a low level of performance achieved so far within the framework of this initiative. Thus, within the European Semester, according to the EC Communication "2015 European Semester: Country-Specific Recommendations" [3], the Commission draws attention to the fact that the downward trend productivity growth has not been reversed and highlights the unacceptably high unemployment rate, increase of poverty and marginalization, large investment deficit, high private and public debt level and the non-performing bank loans.

All these negative aspects have obviously multiple causes rooted in a mis-managed global economy where limited national interests and powerful international actors clash with little regard toward the rise of economic inequality. While, the European Union tries, unsuccessfully until now, to present a united banner in these economic battles, its limited tools, like its industrial policy, can achieve their goals only in an integrated approach which takes into consideration all relevant socio-economic aspects.

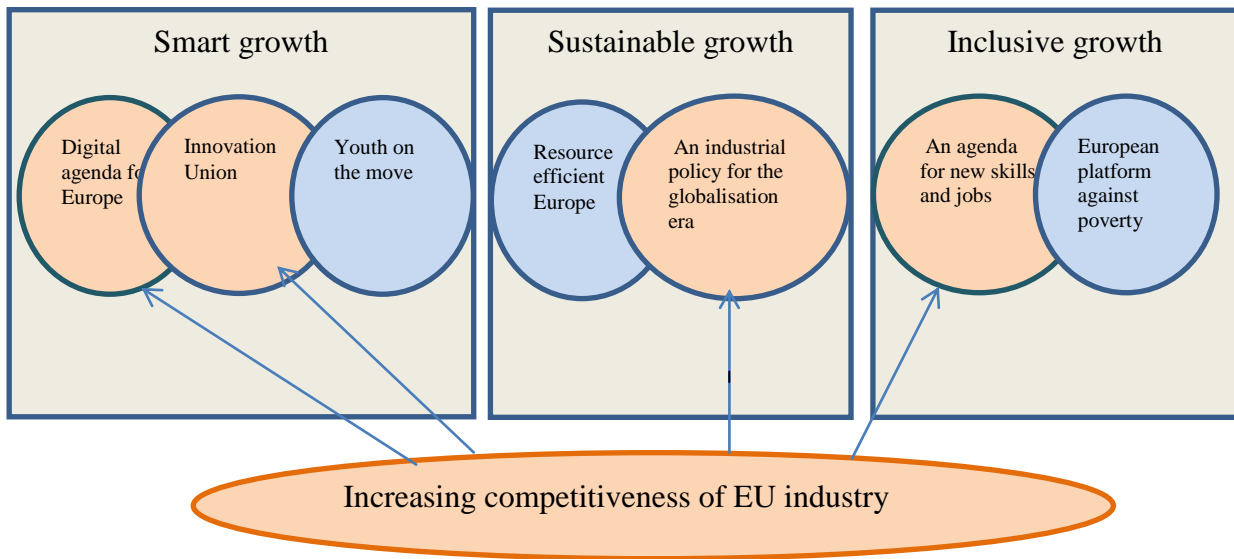
The New Industrial Policy in the Context of the Europe 2020 Strategy: Main Aspects of the Evolution, Purpose and the Path Forward

The concept of the new industrial policy appeared at the beginning of the century, interest in this area being stimulated by globalization, enlargement, fear of deindustrialization and slow European growth. Both the Lisbon European Council in 2000 and at Goteborg in 2001 recognized the key role of industrial policy in the European Union's support for achieving the goals.

The economic and financial crisis has put the EU in a position not only to recognize its weaknesses but also to profoundly rethink its management mode. Thus, in addition to adopting Europe 2020 strategy, important reforms of the rules of the EU's economic governance have been taken, which are intended both to counter the financial crisis and to strengthen economic and monetary union and to establish a political solid union.

To ensure core priorities thereof on smart, sustainable and inclusive growth, the Europe 2020 strategy proposes seven flagship initiatives, four of which are particularly important for industry competitiveness: "Innovation Union", "A Digital Agenda for Europe", "An industrial policy for the globalization era" and "New Skills for New Jobs". The other three flagships refers to the "Youth on the move", "Resource efficient Europe" and "European platform against poverty".

Figure 1: Flagships contribution to enhancing the competitiveness of EU industry



Source: Author own illustration based on European Parliament official data

The flagship initiative “An Industrial Policy for the Globalization Era” focuses on the central objective of this policy, namely promoting the competitiveness of European industry, with a focus on SME development and efficient use of resources. Such an initiative is designed to encourage entrepreneurs and businesses to use existing opportunities created through industrial policy instruments.

In support of increasing the competitiveness of industry, the European Commission intervened after the first Communication “An Integrated Industrial Policy for the Globalization Era Putting Competitiveness and Sustainability at Centre Stage” COM(2010) 614) [4] through a series of other communications:

- “Industrial Policy: Reinforcing Competitiveness” adopted on 14 October 2011, (COM (2011) 642) [5];
- “A Stronger European Industry for Growth and Economic Recovery” adopted on 10 October 2012, (COM (2012) 582) [6];
- “For a European Industrial Renaissance” adopted on 22 January 2014, (COM (2014) 14) [7].

Through these Communications the Commission requires Member States to make deep structural reforms in the economy, the business environment, the single market, SMEs and resource use and developing coherent policies for attracting new investments and creating a better business environment. In its Communication of 2014 “For a European Industrial Renaissance” [7], the Commission sets the target of 20% of GDP for production by 2020, in line with the Europe 2020 goals, focusing in this way on reversing industrial decline. Also the horizontal nature of this policy provides favourable conditions for industrial competitiveness, which is integrated into other EU policy areas such as trade, internal market, research and innovation, environmental protection, employment and public health. In the Table 1 there is an image of the main purpose and main points of these Communications.

Table 1: Main purposes and points of the Communications of the CE for industrial policy in the context of the Europe 2020 strategy

Communications	Main purpose	Main points
“An Integrated Industrial Policy	The 2010 Communication focused on promoting an	The flagship initiative of the Europe

for the Globalisation Era. Putting Competitiveness and Sustainability at Centre Stage" COM(2010) 614)	integrated industrial policy for the globalisation era, by prioritising competitiveness and sustainability. This Communication resulted in an integrated industrial policy strategy encompassing competition, trade, innovation and energy.	2020 strategy The general framework of the industrial policy till 2020
"Industrial Policy: Reinforcing Competitiveness" (COM(2011) 642);	A yearly initiative that looks specifically at the competitiveness of the Member States, based on the European Competitiveness Report 2011 and the Member States' Competitiveness Performance and Policies	The Communication identifies 6 areas necessary to make significant progress towards the Europe 2020 goals: (1) structural changes in the economy; (2) the innovativeness of industries; (3) sustainability and resource efficiency; (4) business environment; (5) the single market; (6) small and medium-sized enterprises.
"A Stronger European Industry for Growth and Economic recovery", (COM(2012) 582);	The Communication launched a new partnership between the EU, Member States, and industry. It focused on four pillars: (1) investments in innovation; (2) better market conditions; (3) access to finance and capital, human capital, and skills; (4) six task forces put in place to boost investment in innovation.	As a result of this communication: (1) task force reports were launched; (2) a High-Level Group (HLG) on Business Services was to identify ways to strengthen the growth of the sector in the EU; (3) mainstreaming of this policy priority across all sectors is in progress; (4) the Mercosur and Asean Intellectual Property Rights (IPR) helpdesks are in place; (5) the Entrepreneurship Action Plan was adopted; (6) 'Missions for Growth' have been undertaken; (7) the competitiveness of small and medium sized-enterprises (SMEs) has been prioritized in EU countries' Cohesion programmes for 2014-2020.
"For a European Industrial Renaissance", (COM (2014) 14).	The European Council recognised the importance of a strong industrial base and identified both production and investment as key drivers for EU economic growth and jobs.	The Communication puts forward new actions to speed up the attainment of: (1) mainstreaming industrial competitiveness in other policy areas to sustain the competitiveness of the EU economy; (2) maximising the potential of the internal market; (3) implementing the instruments of regional development in support of innovation, skills, and entrepreneurship; (4) promoting access to critical inputs in order to encourage investment; (5) facilitating the integration of EU firms in global value chains.

Source: Author own interpretation based on official data at <http://ec.europa.eu/growth/industry/policy/eu>

As a conclusion of the plans for the future for EU Industrial policy, EC made a top of priorities [8] which include:

-fostering competitiveness;

- encouraging innovation by supporting actions related to innovation and research;
- promoting businesses that produce in a sustainable and socially responsible way;
- working to ensure that enterprise and industry has access to resources, including finance, skilled labour, energy, and raw materials;
- a well-functioning internal market;
- promoting a business friendly environment;
- supporting the internationalisation of EU enterprise and industrial goods and services;
- providing support for the protection of intellectual property rights (IPR);

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs is empowered to achieve the industrial policy goals by supporting it across all EU policy area

Approaching the subject of the rebirth of the industrial policy and implicitly regaining its place on the priorities list of the European Commission, Franco Mosconi in his latest book from 2015, "The New European Industrial Policy: Global Competitiveness and the Manufacturing Renaissance" [9], states in "Act I- Industrial Policy" from "Prologue in two acts", the fact that industrial policy is back at the top of the priorities list of the European Agenda starting in December 2002 with the Commission's Communication "Industrial Policy in an Enlarged Europe" (COM(2002) 714) [10] which includes also a contribution from the author.

New industrial revolution: main aspects of the evolution, purpose and the path forward

According to the dictionary.com the definitions for term "revolution" is „a sudden, complete or marked change in something" or to the British Dictionary is "a far-reaching and drastic change, especially in ideas, methods, etc.". So, when we are speaking about industrial revolution we have to have in mind that we are speaking about change, possible complete change or a far-reaching and drastic change.

The new industrial revolution or "The Fourth industrial revolution" is considered by industry experts to be the present stage of development of the industry, according to the classification for industrial technology development. An image of this classification is given in Table 2.

Table 2: Industrial revolution

	Time periods	Technologies and capabilities
First	1784 - mid 19 th century	Water and steam powered mechanical manufacturing
Second	Late 19 th century -1970s	Electric-powered mass production based on the division of labour (assembly line)
Third	1970s-Today	Electronics and information technology drives new levels of automation of complex tasks
Fourth	Today-	Sensor technology, interconnectivity and data analysis allow mass customisation, integration of value chains and greater efficiency

Source: author based on data from EPRS | European Parliamentary Research Service) Briefing September 2015 "Industry 4.0 Digitalisation for productivity and growth"

This new industrial revolution had been triggered in particular by the spectacular development of digital technologies and initiatives in this field from the Member States which have identified an opportunity to increase their competitiveness through adaptation and integration them in the industry.

Table 3: Digitising industry initiatives across the Europe

EU Country	National initiatives	Regional initiatives
Germany	Platform Industrie 4.0	It's OWL (Ostwesfalen-Lippe)
	Smart Service World	Alianz Industrie 4.0 (Baden-Wurttemberg)
	Autonomik fur Industrie 4.0	
	Allianz Industrie 4.0 BW	
France	Industrie du Futur	FoF Ile-de-France
Portugal	PRODUTECH	-
Spain	Industria Conctada 4.0	-
	Basque Industry 4.0	
	MDI 4.0 -TECNALIA	
Belgium	Made Different	Flanders Make/iMinds (Flanders)
United Kingdom	High Value Manufacturing Catapult	Action Plan for Manufacturing (Scotland)
	Innovative UK	
	EPSRC Manufacturing the Future	
Netherlands	Smart Industry	-
Denmark	MADE – National Initiative	-
Sweden	Produktion 2030	-
Finland	FIMECC PPP Programmes	-
	Industrial Internet Business Revolution	
Poland	INNOMED	-
	INNOLOT	
	CuBR	
	BIOSTRATEG	
Latvia	Riga IT Demo Centre	-
Austria	Produktion der Zukunft	-
Italy	Fabrica Intelligente	Ass Fabnr Intell Lombardia
Greece		Operational Programme in Region Western Greece

Source: author based on data from <https://ec.europa.eu/digital-agenda/en/digitising-european-industry>

One of the key challenges for European cooperation is the integration of all these initiatives in a coherent approach, whose goals complements each other and contributes to main objectives of the policy. This involves using policy instruments, financial support, coordination and legislative powers that function as a trigger for further investment.

Member states can contribute by using public-private partnerships, pooling resources to help development in areas like cloud infrastructure and standards setting.

Examples of such cooperation practices cover a wide range of activities like the chemical, ceramics and engineering industries in the case of "The Sustainable Process Industry through Resource and Energy Efficiency" (SPIRE), robotics, lasers and sensors in the case of "ICT Innovation for Manufacturing SMEs" (I4MS) or digital value creation in the case of "Smart Anything Everywhere".

While these are only the seeds of future projects they provide a glimpse into the future of European funding as it targets key areas for improvement with significant possibilities of multiplication into adjacent branches of industry.

By far the most popular term used within this industrial revolution or the so called "Fourth industrial revolution" is Industry 4.0 and it is originated in Germany. In the words of German Chancellor Angela Merkel, Industry 4.0 is "the comprehensive transformation of the whole sphere of industrial production through the merging of digital technology and the internet with conventional industry" [11].

The Deloitte Study of 2014 "Industry 4.0 Challenges and solutions for the digital transformation and use of exponential technologies" [12] identifies four main characteristics of the fourth industrial revolution:

-The vertical networking of smart production systems, with a strong orientation towards individualized needs;

-Horizontal integration, by means of a new generation of global value-creation networks, including integration of business partners and customers, and new business and cooperation models across countries and continents;

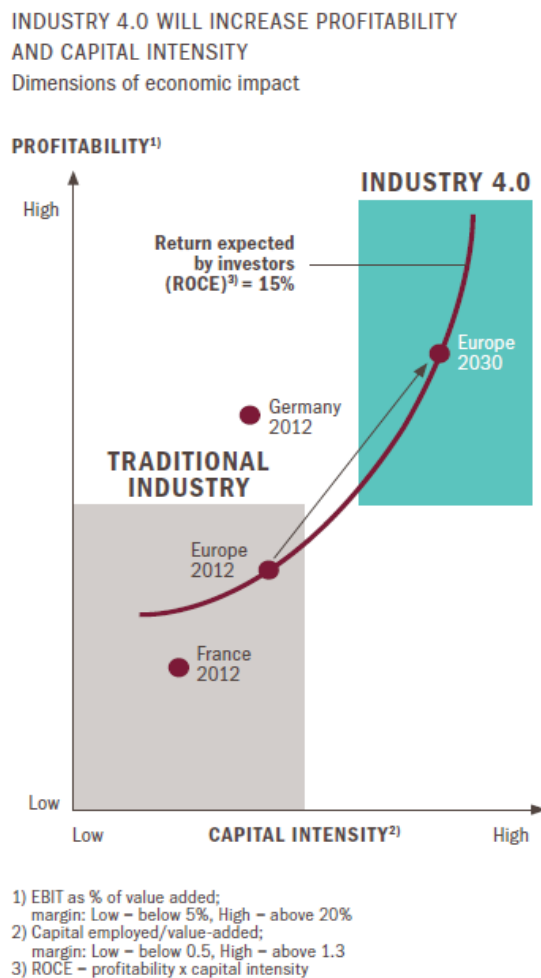
-Through-engineering throughout the entire value chain, taking in not only the production process but also the end product –that is, the entire product life cycle;

-Acceleration through exponential technologies.

According to Roland Berger’s study “Industry 4.0 The new industrial revolution. How Europe will succeed” [13], at the basis of successful industrial strategies and maintaining a leading position stand innovation, automation and sophisticated processes. The author promotes a change arguing that reindustrialization should be much more than simply rebuilding the old-fashioned production structures, which disappeared some time ago. In his view, a successful approach for reindustrialization should take into account the changing environment and alignment of processes, production and products to the new situation. Europe's industrial future must be “imagined and designed to cross the borders”.

From an economic point of view, Industry 4.0 is an opportunity to increase the profitability and intensity of capital (Fig. 2) and to change the economic rules of industry, specifically to overcome the tendencies of deindustrialization from some European countries.

Figure 2: Influence of Industry 4.0 towards the increase of profitability and intensity of capital

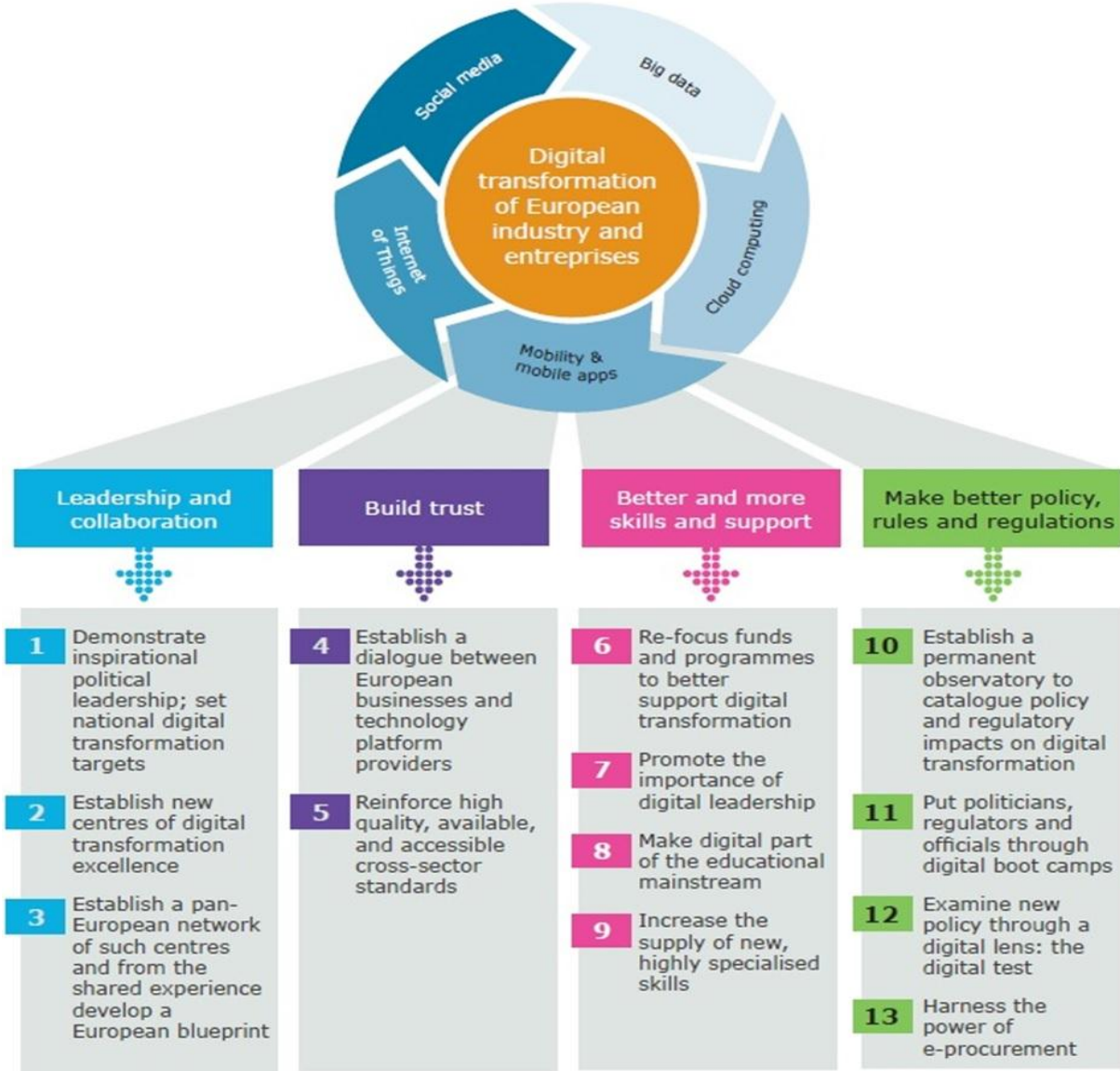


Source: Berger, R., 2014, “Industry 4.0 The new industrial revolution How Europe will succeed”

Concerning the European approach to digital transformations, in "A report of the Strategic Policy Forum on Digital Entrepreneurship: Digital Transformation of European Industry and Enterprises" [14], (Forum established by DG Internal Market, Industry, Entrepreneurship and SMEs), we can notice the huge growth potential through digitalization. Modern technologies and revolutionary innovations have a massive transformative power, representing essential instruments that will allow EU to reach its objective from the Europe 2020 strategy to become a smart, sustainable and inclusive economy.

During the respective Forum an action plan was published (Fig.3), that includes 13 recommendations to accelerate the digital transformation of European industry, of its enterprises in all sectors of the economy, in order to create new opportunities for Europe.

Figure 3: Plan for digital transformation in the EU proposed by the Strategic Policy Forum on Digital Entrepreneurship



Source: European Commission, DG Internal Market, Industry, Entrepreneurship and SMEs, 2015, "Digital Transformation of European Industry and Enterprises. A report of the Strategic Policy Forum on Digital Entrepreneurship"

According to the Forum participants, the Single Digital Market is particularly valuable and the EU should move fast in approaching this subject. Concerning the proposed action plan they highlight the necessity of involving all stakeholders from industry, social partners, academic environment, political decision-makers from national and local level in order to act on all issues from their competence areas.

Moreover, through its Communication of January 2014 "For a European Industrial Renaissance" [7], the European Commission noted that the digital transition „is underway in the global economy" and emphasize the importance of digital technologies by defining them as key elements of productivity growth of European industry and urged Member States to integrate new technology opportunities in the industry such as cloud computing, new applications of the Internet industry, factories intelligent robotics, printing and design in 3-D.

Long-term tendencies affecting the growth

This chapter deals with the main findings of some of the most important and representative documents, studies and papers in this field, whose analysis reveals the long-term trends affecting growth, as shown below.

Along with Communication, "Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth" [15], the EC Commission has performed a review of the Europe 2020 Strategy in order to improve it for the period 2015-2020.

According to this Communication, the analysis of the situation after four years reveals that "a gradual recovery has set in since 2013 and is expected to continue", however more realistic scenario is that the likely growth trajectory over the period 2010-2020 looks like a "sluggish" recovery (i.e., approximately 1.3% per year). At the time of launching of the Strategy several growth scenarios were taken into account, the most important of them referring to: a return to "strong" growth, a scenario of "sluggish" recovery or the risk of a "lost decade".

In the chapter concerning the "Summary of the main lessons learned" from the "Results of the public consultation on the Europe 2020 strategy for smart, sustainable and inclusive growth (Executive summary)", COM(2015) 100 [16], the Commission outlined the SWOT analysis of the Europe 2020 Strategy, as seen in Fig. 4.

Figure 4: Europe 2020 strengths, weaknesses, expectations and threats

<p>STRENGTHS</p> <ul style="list-style-type: none"> -Overwhelming support for an EU-wide jobs and grow strategy; -Consistency of the area covered by Europe 2020 with the challenges to be tackled; -Relevant and mutually reinforcing targets; -Some already tangible progress: the EU is on course to meet or closely approach the targets on education, climate and energy; 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> -Lack of visibility of the flagship initiatives; -Need to improve the delivery and implementation of the strategy; -Insufficient involvement of the relevant stakeholders; -Far from reaching the targets on employment, research and development and poverty reduction;
<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> -Actors willing to play an active role in the strategy; -Close monitoring of the strategy through the European Semester; -Alignment of Europe 2020 with the Commission's priorities (job, growth and investment); 	<p>THREATS</p> <ul style="list-style-type: none"> -The crisis has amplified divergences across and within Member State; -Political nature of the targets and lack of ambition of Member States.

Source: "Results of the public consultation on the Europe 2020 strategy for smart, sustainable and inclusive growth (Executive summary)", COM (2015) 100 final, Brussels

Long-term tendencies affecting the growth specified in the Communication "Taking stock of the Europe 2020 strategy" [15] refer to: social change, globalisation and trade, productivity developments and the use of information and communications technology (ICT) and the pressure on resources and environmental concerns.

Also, relating to the long-term tendencies, in the study of European Strategy and Policy Analysis Systems 2016 (ESPAS) "Global Trends to 2030: Can the EU meet the challenges ahead?" [2] authors have identified out five global trends, these refer to: widening inequalities, vulnerability of the sustained development of the world economy in front of challenges and weaknesses in the globalisation process, revolution in technologies involving

digitization, managing scarcity of resources and the interdependence of countries and global governance.

In Table 4 there is a parallel view between long-term tendencies affecting the growth specified in the Communication "Taking stock of the Europe 2020 strategy" [15] and Global trends according to the "Global Trends to 2030: Can the EU meet the challenges ahead?" 2016 (ESPAS) [2]. As we can easily notice, in both documents, there are the same long-term tendencies which can affect the growth.

Table 4: Parallel view between long-term tendencies affecting the growth specified in the Communication "Taking stock of the Europe 2020 strategy" and Global trends according to the "Global Trends to 2030: Can the EU meet the challenges ahead?" 2016 (ESPAS)

Long-term tendencies affecting the growth specified in the Communication "Taking stock of the Europe 2020 strategy"	Global trends according to the "Global Trends to 2030: Can the EU meet the challenges ahead?" 2016 (ESPAS)
Social change	Widening inequalities
Globalisation and trade	Vulnerability of the sustained development of the world economy in front of challenges and weaknesses in the globalisation process
Productivity developments and the use of information and communications technology (ICT)	Revolution in technologies involving digitization
The pressure on resources and environmental concerns	Managing scarcity of resources
	The interdependence of countries and global governance.

Source: Author own interpretation based on data from Communication "Taking stock of the Europe 2020 strategy" and Global trends according to the "Global Trends to 2030: Can the EU meet the challenges ahead?" 2016 (ESPAS)

The same study "Global Trends to 2030: Can the EU meet the challenges ahead?" [2] revealed to us three structural revolutions „that are forging a more complex and insecure world": economic and technological revolution, social and democratic revolution and geopolitical revolution.

But, in analytical study "Industry 4.0" 2016 which "aims to inform the debate about the role of industrial policy at an EU level in supporting Member States (MS) and enterprises as regards the transformation required to connect digital technologies with industrial products and services" [17], carried out by CSES for the European Parliament, in the SWOT table (Fig. 5), we can see near strengths and opportunities which everyone speaks, weaknesses and threats of the Industry 4.0.

Figure 5: Industry 4.0 – SWOT table

<p style="text-align: center;">STRENGTHS</p> <ul style="list-style-type: none"> • Increased productivity, (resource) efficiency, (global)competitiveness, revenue • Growth in high-skilled and wellpaid jobs • Improved customer satisfaction –new markets: increased product customisation and product variety • Production flexibility and control 	<p style="text-align: center;">WEAKNESSES</p> <ul style="list-style-type: none"> •High dependence on resilience of technology and networks: small disruptions can have major impacts •Dependence on a range of success factors including standards, coherent framework, labour supply with appropriate skills, investment and R&D •Costs of development and implementation •Potential loss of control over enterprise •Semi-skilled unemployment •Need to import skilled labour and integrate immigrant communities
<p style="text-align: center;">OPPORTUNITIES</p> <ul style="list-style-type: none"> • Strengthen Europe’s position as a global leader in manufacturing (and other industries) 	<p style="text-align: center;">THREATS</p> <ul style="list-style-type: none"> • Cybersecurity, intellectual property, data privacy • Workers, SMEs, industries, and national

<ul style="list-style-type: none"> • Develop new lead markets for products and services • Counteracting negative EU demographics • Lower entry barriers for some SMEs to participate in new markets, links to new supply chains 	<ul style="list-style-type: none"> • economies lacking the awareness and/or means to adapt to Industry 4.0 and who will consequently fall behind • Vulnerability to and volatility of global value chains • Adoption of Industry 4.0 by foreign competitors neutralising EU initiatives
--	--

Source: EP, "Industry 4.0 Analytical Study" – Study for the ITRE Committee (Committee on Industry, Research and Energy), 2016

CONCLUSIONS

The aim of this entire policy is that industry should account for approximately 20 % of GDP by 2020, from 15.1 % currently according to the Communication "For a European Industrial Renaissance" [7].

As can be seen at the half way point for Europa 2020 strategy, the partial results for all these objectives are beneath expectations.

At the same time, there is an interesting movement regarding digitalisation of everything, including industry, across Europe which "guarantees" fundamental changes and real results in terms of economic growth and competitiveness (according with the public information on European Commission site related to Digitising European Industry, "recent studies estimate that digitisation of products and services can add more than €110 billion of annual revenue in Europe in the next five years"). Also, as can be observed, many European country adopted this idea and, at the same time, the idea is supported at EU higher levels like the European Commission and the European Parliament. Regarding this, the European Commission launched on 19 April 2016 the first industry-related initiative of the Digital Single Market package through the Communication "Digitising European Industry. Reaping the full benefits of a Digital Single Market" COM(2016) 180 [18] in order for the European economy to be ready for the "emerging challenges of digital products and services", such initiatives establish specific goals and policies, which target specific areas for improvement.

We are talking today about the terms as digital single market, digital economy, the strategy of Digitising European Industry in order "to maximize the benefits from digital technologies in every industrial sector in Europe" [19]. The economic and technological revolution is confirmed and the most recent studies reveal and emphasize the huge potential for growing competitiveness through digitalisation.

Industry is one of the pillars of the European economy and "now more than ever, Europe needs industry and industry needs Europe" [1], but at what price? In my opinion, to understand this „price“ the real one, there is a need for more and complex studies. A part of this potential price we can see as threats in SWOT analysis from Analytical Study "Industry 4.0" [17]: "Workers, SMEs, industries, and national economies lacking the awareness and/or means to adapt to Industry 4.0 and who will consequently fall behind".

As a conclusion, digitalization is undoubtedly a reality and, taking into account the fact that "Economic realities are moving faster than political realities" [1], it is important to know exactly what industrial policy means in the age of digitalisation and which are the implications for both economy and society, in order to come up with a realistic way forward.

REFERENCES:

- [1]. Communication from the European Commission, 2010, "EUROPE 2020 A strategy for smart, sustainable and inclusive growth", Bruxelles, COM(2010) 2020 final, p.3, Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [2]. ESPAS (European Strategy and Policy Analysis Systems), 2016, "Global Trends to 2030: Can the EU meet the challenges ahead?", p. 7, Internet Source: <http://europa.eu/espas/pdf/espas-report-2015.pdf>, (accessed on May 2016);
- [3]. Communication from the European Commission, 2015, "2015 European Semester: Country-specific recommendations", COM(2015) 250 final, Brussels, p.2,4, Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);

- [4]. Communication from the European Commission, 2010, "An Integrated Industrial Policy for the Globalisation Era -Putting Competitiveness and Sustainability at Centre Stage", Bruxelles, COM (2010) 614 final, Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [5]. Communication from the European Commission, 2011, "Industrial Policy: Reinforcing competitiveness", COM(2011) 642 final, Bruxelles, Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [6]. Communication from the European Commission, 2012, "A Stronger European Industry for Growth and Economic Recovery -Industrial Policy Communication Update", Brussels, COM(2012) 582 final, pp.6- 46; Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [7]. Communication from the European Commission, 2014, "For a European Industrial Renaissance", Bruxelles, COM(2014) 14 final, Introduction p. 1; Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [8]. http://ec.europa.eu/growth/industry/policy/eu/index_en.htm, (accessed on May 2016);
- [9]. Mosconi, Franco "The New European Industrial Policy: Global Competitiveness and the Manufacturing Renaissance", 2015, p 3, ISBN: 978-1-138-79282-1 (hbk), ISBN: 978-1-315-76175-6 (ebk)
- [10]. Communication from the European Commission, 2002, "Industrial Policy in an Enlarged Europe", COM(2002) 714 final, Brussels, p.2, Internet Source: http://ec.europa.eu/invest-in-research/pdf/download_en/industrial_policy_enlarged_europe.pdf, (accessed on May 2016);
- [11]. Davies, Ron, EPRS | European Parliamentary Research Service, Briefing September 2015 –"Industry 4.0 Digitalisation for productivity and growth", p. 2, Internet Source: http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI%282015%29568337, (accessed on May 2016);
- [12]. Deloitte, 2014, "Industry 4.0 Challenges and solutions for the digital transformation and use of exponential technologies", p.3, Internet Source: <http://www2.deloitte.com/content/dam/Deloitte/ch/Documents/manufacturing/ch-en-manufacturing-industry-4-0-24102014.pdf>, (accessed on May 2016);
- [13]. Berger, Roland, 2014, THINK ACT "Industry 4.0 The new industrial revolution How Europe will succeed", pp.5-22, Internet Source: http://www.rolandberger.ro/media/pdf/Roland_Berger_TAB_Industry_4_0_20140403.pdf, (accessed on May 2016);
- [14]. European Commission, DG Internal Market, Industry, Entrepreneurship and SMEs, 2015, "Digital Transformation of European Industry and Enterprises A report of the Strategic Policy Forum on Digital Entrepreneurship", pp.10-21, Internet Source: http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8188, (accessed on May 2016);
- [15]. Communication from the European Commission, 2014, "Taking stock of the Europe 2020 strategy for smart, sustainable and inclusive growth", Brussels, COM(2014) 130 final/2, pp. 5-21, Internet Source: http://ec.europa.eu/europe2020/pdf/europe2020stocktaking_en.pdf, (accessed on May 2016);
- [16]. Communication from the European Commission, 2015, "Results of the public consultation on the Europe 2020 strategy for smart, sustainable and inclusive growth (Executive summary)", COM(2015) 100 final, Brussels, Internet Source: <http://eur-lex.europa.eu> (accessed on May 2016);
- [17]. European Parliament, 2016, "Industry 4.0" Analytical Study_ Study for the ITRE Committee (Committee on Industry, Research and Energy), p. 7, Internet Source: http://www.europarl.europa.eu/ReqData/etudes/STUD/2016/570007/IPOL_STU%282016%29570007_EN.pdf, (accessed on May 2016);
- [18]. Communication from the European Commission, 2016, "Digitising European Industry. Reaping the full benefits of a Digital Single Market" COM(2016) 180, Internet Source: <https://ec.europa.eu/digital-single-market/en/news/communication-digitising-european-industry-reaping-full-benefits-digital-single-market>, (accessed on May 2016);
- [19]. <https://ec.europa.eu/digital-single-market/en/economy>