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DRAFT REPORT

on digitising European industry
(2016/2271(INI))

Committee on Industry, Research and Energy

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CONTENTS

	Page
MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION	3
EXPLANATORY STATEMENT	10

MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on digitising European industry (2016/2271(INI))

The European Parliament,

- having regard to Article 173 (Title XVII) of the Treaty on the Functioning of the European Union, which concerns EU industrial policy and refers, among other things, to the competitiveness of the Union's industry,

having regard to Articles 9, 11 and 16 of the Treaty on the Functioning of the European Union,
- having regard to the Commission communication of 19 April 2016 entitled ‘Digitising European Industry - Reaping the full benefits of a Digital Single Market’ (COM(2016)0180),
- having regard to the Commission communication of 19 April 2016 entitled ‘European Cloud Initiative - Building a competitive data and knowledge economy in Europe’ (COM(2016)0178),
- having regard to the Commission communication of 19 April 2016 entitled ‘ICT Standardisation Priorities for the Digital Single Market’ (COM(2016)0176),
- having regard to the Commission staff working document of 19 April 2016 entitled ‘Quantum technologies’ (SWD(2016)0107),
- having regard to the Commission staff working document of 19 April 2016 entitled ‘Advancing the Internet of Things in Europe’ (SWD(2016)0110),
- having regard to the Commission communication of 2 July 2014 entitled ‘Towards a thriving data-driven economy’ (COM(2014)0442),
- having regard to its resolution of 19 January 2016 on Towards a Digital Single Market Act¹,
- having regard to its resolution of 9 March 2011 on an industrial policy for the globalised era²,
- having regard to its resolution of 16 June 2010 on EU 2020³,
- having regard to its resolution of 15 June 2010 on Community innovation policy in a changing world⁴,
- having regard to the Commission communication of 28 October 2010 entitled ‘An

¹ Texts adopted, P8_TA(2016)0009.

² OJ C 199 E, 7.7.2012, p. 131.

³ OJ C 236 E, 12.8.2011, p. 57.

⁴ OJ C 236 E, 12.8.2011, p. 41.

Integrated Industrial Policy for the Globalised Era Putting Competitiveness and Sustainability at Centre Stage' (COM(2010)0614),

- having regard to the Commission communication of 3 March 2010 entitled 'Europe 2020 – A Strategy for Smart, Sustainable and Inclusive Growth' (COM(2010)2020),
- having regard to the Commission communication of 6 October 2010 entitled 'Europe 2020 Flagship Initiative: Innovation Union' (COM(2010)0546),
- having regard to the Commission communication of 4 July 2007 entitled 'Mid-term review of industrial policy - A contribution to the EU's Growth and Jobs Strategy' (COM(2007)0374),
- having regard to the Commission communication entitled 'A Digital Single Market Strategy for Europe' (COM(2015)0192) and the accompanying Commission staff working document (SWD(2015)0100),
- having regard to the proposal for a regulation of the European Parliament and of the Council laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012 (COM(2013)0627),
- having regard to the proposal for a regulation of the European Parliament and of the Council on measures to reduce the cost of deploying high-speed electronic communications networks (COM(2013)0147),
- having regard to the proposal for a directive of the European Parliament and of the Council concerning measures to ensure a high common level of network and information security across the Union (COM(2013)0048),
- having regard to the Commission communication of 10 October 2012 entitled 'A stronger European industry for growth and economic recovery' (COM(2012)0582),
- having regard to the Commission communication of 22 January 2014 entitled 'For a European Industrial Renaissance' (COM(2014)0014),
- having regard to the Commission communication of 3 October 2012 entitled 'Single Market Act II – Together for new growth' (COM(2012)0573),
- having regard to the Commission communication of 13 April 2011 to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions entitled 'Single Market Act: Twelve levers to boost growth and strengthen confidence' (COM(2011)0206),
- having regard to the Commission communication of 27 October 2010 to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions entitled 'Towards a Single Market Act: For a highly competitive social market economy – 50 proposals for improving our work, business and exchanges with one another' (COM(2010)0608),

- having regard to its resolution of 15 January 2014 on reindustrialising Europe to promote competitiveness and sustainability¹,
 - having regard to its resolution of 10 December 2013 on unleashing the potential of cloud computing in Europe²,
 - having regard to its resolution of 12 September 2013 on the Digital Agenda for Growth, Mobility and Employment: time to move up a gear³,
 - having regard to its resolution of 12 June 2012 on critical information infrastructure protection – achievements and next steps: towards global cyber-security⁴,
 - having regard to its resolution of 5 May 2010 on a new Digital Agenda for Europe: 2015.eu⁵,
 - having regard its resolution of 15 June 2010 on the Internet of Things⁶,
 - having regard to Rule 52 of its Rules of Procedure,
 - having regard to the report of the Committee on Industry, Research and Energy and the opinions of the Committee on the Internal Market and Consumer Protection, the Committee on Employment and Social Affairs, the Committee on Culture and Education and the Committee on Transport and Tourism (A8-0000/2016),
- A. whereas energetic efforts to reindustrialise Europe must be pursued with the aim of combining competitiveness and sustainability;
 - B. whereas digitalisation will transform manufacturing, impacting fundamentally the balance of opportunities and challenges for European industries;
 - C. whereas Europe has a strong base from which to become a leader in the digital transformation;
 - D. whereas it is an imperative for European industrial strategy to create a digital single market;
 - E. whereas the digitalisation of industrial manufacturing can be an important stepping stone in increasing the resilience, sustainability and competitiveness of our economy;
 - F. whereas digitalisation has the potential to increase efficient use of resources, energy and capital, contributing to a more integrated circular economy and industrial symbiosis;
 - G. whereas digitalisation can contribute to safer working conditions, to greater product safety, and to the individualisation and decentralisation of production;

¹ Texts adopted, P7_TA(2014)0032.

² Texts adopted, P7_TA(2013)0535.

³ OJ C 93, 9.3.2016, p. 120.

⁴ OJ C 332 E, 15.11.2013, p. 22.

⁵ OJ C 81 E, 15.3.2011, p. 45.

⁶ OJ C 236 E, 12.8.2011, p. 24.

- H. whereas there is widespread concern as regards the labour market effects of digitalisation in industrial manufacturing as well as its possible effects on workplace democracy and regional development;

Developing an integrated Industrial Digitalisation Strategy (IDS) for the EU

1. Welcomes the Commission's Communication on Digitising European Industry;
2. Strongly believes that an IDS is of critical importance in contributing to solving Europe's most pressing economic challenges:
 - (a) Strengthening economic dynamics, cohesion and resilience vis-à-vis technological disruptions;
 - (b) Fostering job creation and improving working standards and the attractiveness of industrial sector jobs through a socially just transformation;
 - (c) Rejuvenating an EU resource policy that goes hand in hand with a strengthened European circular economy;
 - (d) Strengthening European cohesion through a reliable European investment policy (in digital infrastructure) and a coordinated European industrial policy on the basis of sustainable modernisation;
 - (e) Supporting Europe's goals in climate policy by raising the energy and resource efficiency of industrial production;
 - (f) Strengthening economic, policy and social innovation through the principles of openness and accessibility of public and private data and information;
 - (g) Improving the livelihoods of citizens in urban and non-urban areas;
 - (h) Stimulating technological and social innovation in EU research;
 - (i) Improving energy security through a digitised, more flexible industrial production;
 - (j) Partnering with other macro-regions in the world in developing innovative and fair digital open markets;
3. Stresses the importance of an EU governance structure for the digitalisation of industry that facilitates the coordination of national initiatives and platforms on industrial digitalisation; calls on the Commission to consider setting a non-binding orientation target, that allows the EU to remain a global industrial leader; underlines the importance of advancing digitalisation particularly in those regions that are lagging behind; expects that, besides industry leaders and social partners, stakeholders from academia, the standardisation community, trade unions, policy-makers and civil society as well as industry leaders, especially SMEs, will also be invited to play an active role;
4. Asks the Commission to establish a specific industrial foresight unit that examines manufacturing and digitalisation trends, studies pertinent developments in other regions,

identifies new key technologies and ensures that European leadership in these areas is maintained and new trends are integrated into policies and actions;

Creating conditions for successful industrial digitalisation: infrastructure, investment, innovation

5. Stresses that integrated industrial digitalisation must be based on strong enabling conditions;
6. Highlights in this context the need to advance investment in connectivity through 5G and fibre optics as an instrument for convergence and ensuring a robust digital infrastructural backbone for Europe's industry;
7. Believes that clusters and synergies between SMEs, industrial players, the skilled crafts sector, start-ups, academia, finance and other stakeholders can be successful models in advancing digital manufacturing and innovation; notes the importance of utilising digitalisation for advancing business model innovations;
8. Believes that special attention should be devoted to SMEs whose relative gains, in terms of energy and resource efficiency as well production efficiency through already modest digitalisation efforts, are highest;
9. Welcomes the establishment of the Smart Specialisation Platform for Industrial Modernisation and particularly the Commission's proposal for Digital Innovation Hubs (DIH) to strengthen industrial digitalisation and digital innovation for SMEs; calls on the Commission to increase the funding for the DIH;
10. Notes the important role of cities in providing digital infrastructure and support for SMEs, entrepreneurs and industry, and the immense opportunities which digital-industrial innovation holds for cities; asks the Commission to look into the US 'Cities Innovation Technology Investment Initiative (CITIIS)'; welcomes the publication of a European Digital City Index;
11. Highlights the role that public procurement can play in advancing new industrial digital innovations and technology; asks the Commission to include a digital check in its REFIT Programme;
12. Stresses the importance of financing the digitalisation of Europe's industry; expresses disappointment that the European Fund for Strategic Investment (EFSI) has so far invested only 11 % in digital projects;

Securing European technology leadership and security in industrial digitalisation: mergers and acquisitions (M&A), cybersecurity, data sovereignty, standardisation

13. Asks the Commission to enforce minimum thresholds for EU-based research and development (R&D) of companies applying for research funding;
14. Highlights the fact that external foreign direct investment (FDI) has shown a growing interest in acquiring sensitive European technologies via M&A; calls on the Commission to study the CFIUS (Committee on Foreign Investment in the United

States) experience in order to learn from it;

15. Underlines the role of cybersecurity within the digitalisation of Europe's industry; considers cyber-resilience as crucial and cybersecurity as a core sector for European digitalisation efforts; believes that producers are responsible for ensuring safety and security standards on the basis of the available state of the art technology; notes that cybersecurity requirements for the Internet of Things (IoT) and IT security standards must strengthen European cyber-resilience; believes that European standardisation bodies have a special role to play in this respect;
16. Believes that there should be common criteria for critical infrastructure and the digital security thereof;
17. Stresses the need for monitoring of data sovereignty; believes that industrial data protection and data ownership, especially b2b, require special attention; notes that open data and open standards can promote new technologies;
18. Recognises the potential of digitising industry for the purpose of sectoral data retrieval and of governance by public and semi-public authorities and market participants;
19. Underlines the role of integrating openness of architecture as a design principle of digital components;
20. Recognises the importance of protecting technical know-how as regards the exchange and interlinkage of industrial-digital components while at the same time allowing and furthering connectivity;
21. Stresses that European leadership in industrial digitalisation requires a strong standardisation strategy; emphasises the important and unique make-up of Europe's standardisation bodies, including their inclusive approach; calls on the Commission to promote the development of open standards and welcomes its intention to guarantee access to standard essential patents under FRAND (fair, reasonable, non-discriminatory) conditions; calls for an EU coordinated approach towards international fora and consortia such as the Industrial Internet Consortium (IIC);

The Social dimension: skills, education and social innovation

22. Highlights the fact that the digital transformation of industry will have a major societal impact on areas ranging from employment, working conditions, workers' rights to education and skills; calls on the Commission to adequately study the social effects of industrial digitalisation;
23. Stresses that Europe faces a digital gap in terms of skills; calls for the implementation of a skills guarantee and the right to (re-)training and life-long-learning; emphasises the importance of ensuring the promotion of digital skills; calls on industry to grant employees a 'digital sabbatical'; asks the Commission to launch a pan-European up-skilling initiative;
24. Underlines that education must include digital skills and that these must be integrated into national education curricula;

25. Emphasises the importance of investing in the digitalisation of vocational training and the skilled crafts sector; stresses that digital skills also need to be combined with engineering skills and the promotion of science, technology, engineering and mathematics (STEM) education;
26. Recommends the establishment of a bi-annual progress review and recommendations on the digitalisation of industry;
27. Instructs its President to forward this resolution to the Council, the Commission and the Member States.

EXPLANATORY STATEMENT

Industry plays a key role in Europe's economy. It provides jobs, economic dynamism and can crucially contribute with solutions to mastering grand societal challenges that the European Union faces ranging from the Sustainable Development Goals (SDGs) and climate change to changing demographics, social precariousness and loss of biodiversity. At the same time the world is in the midst of a new industrial revolution based on digitalisation and automation. This is changing business models, value chains, production and consumption. New key technologies are emerging such as big data, the Internet of Things (IoT), 5G, cloud computing, robotics, artificial intelligence, quantum technologies, and so on. A global race is emerging on who can take on these new developments and adapt to them in a sustainable and social way the fastest.

For European industry to remain competitive it is essential that it leads this new industrial revolution with innovation and on the basis of sustainability. The European Union has clear industrial advantages in this regard. It has the know-how, R&D, skilled workers, a large single market, a strong industrial base and history bringing together manufacturing and services. In this context, Europe needs an ambitious industrial modernisation strategy digitalising its manufacturing base. The European Commission's Communication is an important first step in the right direction.

Such a strategy needs a holistic approach based on the following pillars:

- European coordination and vision
- Setting the right framework conditions (infrastructure, investment, innovation)
- Emphasising security as a European specificity in developing new key technologies
- Increasing social resilience via skills, education and social innovation.

The EU needs a common strategic approach. 28 separate national strategies, platforms and approaches does not make use of the European added-values, furthers fragmentation, risks undermining the single market, and leads to inefficiencies. That's why a European approach with a European coordinating platform is crucial to ensure that national strategies are embedded in a larger context taking a European perspective. Particularly, a common European vision is needed. Digitalisation by itself cannot be the *leitmotif*. Digitalisation is an enabler to advance competitiveness, sustainability and good work. Digitalisation of products and services would add more than 110 billion EUR of revenue for industry per year in the next 5 years. In Germany alone, it would bring 8% of productivity growth over the next decade according to the European Commission. It can also generate socio-economic and environmental benefits. According to BT, ICT has the potential to reduce EU carbon emissions by over 1.5 Gt CO₂e in 2030 via energy and resource efficiency, and e-health could generate 14 billion EUR in space savings enabled by fewer in-person consultations.

Adapting to these new industrial trends, however, will not be possible if Europe doesn't provide the right framework conditions. That means ensuring the best infrastructure for Europe's economy, for example, via 5G and fibre optics, promoting innovation and R&D, as well as stimulating investments in new technologies and modernisation. According to the European Commission, roughly over the last 15 years, "investments in ICT related products in the EU represented about a third of those made in the US". Investment levels are too low. That's why framework conditions need to be put in place that transform a situation of austerity towards investment. Small and medium-sized enterprises (SMEs) are particularly

important in this context. According to surveys, the majority of European SMEs consider themselves lagging behind in the uptake of digital technologies and lack investment in such. This must be addressed through a SME-tailored digitalisation drive.

Different security aspects must also get greater attention in this new digital industrial era. This ranges from ensuring that key European strategic technologies aren't sold for cheap to foreign competitors without inhibiting free markets. It also means ensuring cybersecurity in the digitised factory and the Internet of Things, where every digitised product or service can suddenly be "weaponised" via hacking. For this clear cybersecurity rules are necessary. A framework that ensures the free flow of data while protecting data sovereignty and setting clear rules for data management for b2b relations will also be crucial as will be standardisation. Europe's competitors are already strongly pushing their own standardisation strategies in order to advance their own industrial actors. In this context, Europe must flank its industrial digitalisation strategy with a clear standardisation drive together with the European Standardisation Organisations.

It is clear, that the digitalisation of Europe's industry is also bringing challenges. There is the absurd situation where new technologies could, according to different studies, bring job-losses and social precariousness all the while Europe lacks skilled workers. Year on year Europe currently is missing around 180.000 IT specialists. That's why an industrial digitalisation strategy must have a strong social dimension. This includes a right to training and a skills guarantee, promoting lifelong learning, and ensuring that digital skills are taught from a young age and included in school curricula. Digital skills also need to be advanced transversally. Not just in large industries but also for SMEs and the crafts sector. Bringing together digital skills and vocational training is also essential in this regard.