



# Procedure file

Basic information		
INI - Own-initiative procedure	<a href="#">2016/2271(INI)</a>	Procedure completed
Digitising European industry		
Subject 3.30.06 Information and communication technologies, digital technologies 3.40 Industrial policy		

Key players			
European Parliament	Committee responsible	Rapporteur	Appointed
	<b>ITRE</b> Industry, Research and Energy		24/05/2016
		Verts/ALE <a href="#">BÜTIKOFER Reinhard</a>	
		Shadow rapporteur	
		PPE <a href="#">SALINI Massimiliano</a>	
		S&D <a href="#">TOIA Patrizia</a>	
		ECR <a href="#">TOŠENOVSKÝ Evžen</a>	
		ALDE <a href="#">VAN NIEUWENHUIZEN Cora</a>	
		GUE/NGL <a href="#">LÓPEZ BERMEJO Paloma</a>	
		EFDD <a href="#">BORRELLI David</a>	
	ENF <a href="#">KAPPEL Barbara</a>		
Committee for opinion	Rapporteur for opinion	Appointed	
<b>EMPL</b> Employment and Social Affairs			25/10/2016
	S&D <a href="#">LAURISTIN Marju</a>		
<b>IMCO</b> Internal Market and Consumer Protection			24/05/2016
	S&D <a href="#">COFFERATI Sergio Gaetano</a>		
<b>TRAN</b> Transport and Tourism			28/07/2016
	ALDE <a href="#">TELIČKA Pavel</a>		
<b>CULT</b> Culture and Education			14/07/2016
	ECR <a href="#">DZHAMBAZKI Angel</a>		

Key events			
19/04/2016	Non-legislative basic document published	<a href="#">COM(2016)0180</a>	Summary
24/11/2016	Committee referral announced in Parliament, 1st reading/single reading		
25/04/2017	Vote in committee, 1st reading/single reading		
10/05/2017	Committee report tabled for plenary, single reading	<a href="#">A8-0183/2017</a>	Summary

31/05/2017	Debate in Parliament		
01/06/2017	Results of vote in Parliament		
01/06/2017	Decision by Parliament, 1st reading/single reading	<a href="#">T8-0240/2017</a>	Summary
01/06/2017	End of procedure in Parliament		

### Technical information

Procedure reference	2016/2271(INI)
Procedure type	INI - Own-initiative procedure
Procedure subtype	Initiative
Legal basis	Rules of Procedure EP 54
Other legal basis	Rules of Procedure EP 159
Stage reached in procedure	Procedure completed
Committee dossier	ITRE/8/07974

### Documentation gateway

Non-legislative basic document		<a href="#">COM(2016)0180</a>	19/04/2016	EC	Summary
Document attached to the procedure		<a href="#">SWD(2016)0110</a>	19/04/2016	EC	Summary
Committee draft report		<a href="#">PE595.761</a>	20/12/2016	EP	
Committee opinion	<b>CULT</b>	<a href="#">PE593.851</a>	30/01/2017	EP	
Amendments tabled in committee		<a href="#">PE597.696</a>	02/02/2017	EP	
Committee opinion	<b>IMCO</b>	<a href="#">PE593.808</a>	07/02/2017	EP	
Committee opinion	<b>EMPL</b>	<a href="#">PE595.485</a>	28/03/2017	EP	
Committee opinion	<b>TRAN</b>	<a href="#">PE599.589</a>	20/04/2017	EP	
Committee report tabled for plenary, single reading		<a href="#">A8-0183/2017</a>	10/05/2017	EP	Summary
Text adopted by Parliament, single reading		<a href="#">T8-0240/2017</a>	01/06/2017	EP	Summary
Commission response to text adopted in plenary		<a href="#">SP(2017)536</a>	06/10/2017	EC	

## 2016/2271(INI) - 19/04/2016 Document attached to the procedure

The Commission presents a staff working document on advancing the Internet of Things (IoT) in Europe.

It notes that the Internet of Things represents the next major economic and societal innovation wave enabled by the Internet. With the IoT, any physical (e.g. a thermostat or a bike helmet) and virtual (i.e. a representation of real object in a computer system) object can be connected to other objects and to the Internet, creating a fabric between things as well as between humans and things. The IoT can combine the physical and the virtual worlds into a new smart environment, which can make lives easier, safer, and more efficient.

The [Digital Single Market strategy for Europe](#) underlines the need to avoid fragmentation and to foster interoperability for the IoT to reach its potential.

Expected benefits: less than 1% of objects are currently connected to the Internet. The number of IoT connections within the EU is estimated to increase from approximately 1.8 million in 2013 to almost 6 billion in 2020, leading to the EU IoT market being higher than one trillion euros by 2020. This growth in connectivity is expected to bring vast economic benefits, whereby the IoT significantly reshapes industry structures, with borders between products and services, as well as borders between industrial sectors becoming less obvious than today.

In the opinion of Commission services, Europe's future digital industrial strengths will depend on the capacity of its industry to seize the

opportunities coming from the wider diffusion of digital innovation across sectors. Given Europe's current strengths in vertical markets, the development of the IoT offers a unique opportunity for Europe, since it has the potential to lead to the establishment and reinforcement of the new digital value chains in Europe attracting investments and innovators.

This staff working document, which builds on a series of studies and consultations organised over the past 4 years, is part of the digital single market technologies and public services modernisation package. It discusses:

- the challenges for the implementation of the Internet of Things, including the need to avoid fragmentation of the market;
- the key features of the IoT in a single market, including IoT architecture and data handling;
- the obstacles to connectivity, particularly spectrum availability and network coverage;
- the importance of standardization and interoperability, and obstacles to achieving them;
- possible obstacles to data flow and access to data;
- the need for a thriving IoT ecosystem, with a dynamic interaction between the vertical and horizontal dimensions;
- spurring innovations in lead markets. The Annex describes the lead markets in greater detail.

## 2016/2271(INI) - 19/04/2016 Non-legislative basic document

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**PURPOSE:** to assist European industry to reap the full benefits of a digital single market.

**BACKGROUND:** the Commission considers it essential to achieve the Digital Single Market (DSM) in Europe to attract investment in digital innovations and for faster business growth in the digital economy. In 2015 the Commission initiated an ambitious strategy to achieve a DSM.

The [Digital Single Market strategy](#) is part of a coherent framework of Commission initiatives aimed at strengthening the overall competitiveness of industry, especially small and medium-sized enterprises (SME). This includes the [Investment Plan for Europe](#), the Energy Union, the Capital Markets Union, the Circular Economy package and the Single Market Strategy.

High-tech sectors in Europe are fairly advanced in embracing digital innovations while a large part of SME, mid-caps and non-tech industries still lag behind. Large disparities in digitisation also exist between regions.

Several national and regional initiatives were launched recently to tap into the opportunities offered by digital innovations in industry. However, addressing the challenges of digital transformation at national level alone bears the risk of leading to further fragmentation of the single market and to efforts below the critical mass needed to attract private investments.

Recent studies estimate that digitisation of products and services will add more than EUR 110 billion of revenue for industry per year in Europe in the next 5 years.

**CONTENT:** this communication aims to reinforce the EU's competitiveness in digital technologies and to ensure that every industry in Europe, in whichever sector, wherever situated, and no matter of what size can fully benefit from digital innovations.

The focus is on actions with a clear European value added building on, complementing and ensuring the scaling up of national initiatives.

The Commission states that the proposed actions are expected to mobilise close to EUR 50 billion of public and private investment in the next 5 years, explore and adapt when needed the legislative framework and reinforce coordination of efforts on skills and quality jobs in the digital age.

The Commission's approach is built around the following themes:

1) A framework for co-ordination of initiatives for digitising industry: in the first half of 2016, the Commission, together with Member States and industry, will set up a governance framework to (i) facilitate the coordination of EU and national initiatives on digitisation, (ii) mobilise stakeholders, and resources across the value chain, on actions towards the achievement of a Digital Single Market, building upon existing multi-stakeholders dialogues, and (iii) exchange best practices.

2) Co-investing in boosting Europe's digital innovation capacities: the Commission plans to focus EUR 500 million investment from Horizon 2020 on digital innovation hubs on:

- networking and collaboration of digital competence centres and cluster partnerships;
- supporting cross-border collaboration of innovative experimentation activities;
- sharing of best practices and developing, by end of 2016, a catalogue of competences;
- wider use of public procurement of innovations to improve efficiency and quality of the public sector.
- in co-operation with Member States, the Commission will focus investments in the public-private partnerships (PPPs) by concentrating on key technologies and their integration including through large scale federating projects and large-scale pilot projects to strengthen Internet of Things, advanced manufacturing and technologies in smart cities and homes, connected cars or mobile health services.

The Commission will monitor the commitment by the private sector to invest, on average, at least four times as much as the EU investments in the PPPs and the use of the opportunities offered by financial instruments under the European structural and investments funds (EFSI and ESIF).

3) Providing the appropriate regulatory framework conditions: with the support of industry and Member States, the Commission will:

- propose in 2016 the initiative on free flow of data within the EU in order to remove or prevent unjustified localisation requirements in national legislation or regulation as well as to examine in greater detail the emerging issues of data ownership, access and re-use rules, including as regards data in an industrial context and especially data generated by sensors and other collecting devices;
- explore the legal frameworks for autonomous systems (like driverless cars or drones) and Internet of Things applications in particular safety and liability rules and the legal conditions to allow large scale testing in real life environments;

4) Digital skills: the digital transformation is structurally changing the labour market and the nature of work. The Commission address these challenges with a comprehensive dialogue on the social aspects of digitization that engages all stakeholders involved in all aspects of work, education and training.

Starting in 2013, the Commission initiated the Grand Coalition for digital jobs as a cross-European, multi-stakeholder initiative to increase the provision of digital skills. The initiative has been successful in attracting over 60 pledges from more than 100 stakeholders, largely from the ICT sector, to train hundreds of thousands of people in new digital skills.

The forthcoming New Skills Agenda for Europe will provide a comprehensive framework for employability, including the need for digital and complementary skills.

## 2016/2271(INI) - 10/05/2017 Committee report tabled for plenary, single reading

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The Committee on Industry, Research and Energy adopted an own-initiative report by Reinhard BÜTIKOFER (Greens/EFA, DE) on digitising European industry, following the Commissions communication on this subject.

Developing an integrated Industrial Digitalisation Strategy for the EU: Members welcomed the Commissions communication on digitising European industry, and strongly believed that such a strategy is of critical importance in contributing to solving Europes most pressing economic and societal challenges. Such a strategy would, notably:

- strengthening economic dynamic, social and territorial cohesion;
- fostering quality job creation and reshoring opportunities, by contributing to providing consumers with more opportunities and information;
- strengthening European cohesion through a reliable and ambitious European investment policy;
- supporting Europe's goals in climate policy by reducing emissions and energy consumption;
- strengthening economic, policy and social innovation through the principles of openness and accessibility of public and private data.

The report recommends putting in place a competitive business environment that facilitates private investment, a build-up of state-of-the-art European digital infrastructure, and an EU coordination structure for the digitisation of industry.

Digitisation must be accelerated particularly in those Member States, regions and sectors that are lagging behind and among those people who are affected by the digital divide.

Such a strategy would contribute to solving some of the most pressing challenges in the transport and tourism sectors. Members called on the Commission and Member States to provide uninterrupted and high-performance connectivity for main transport paths and hubs no later than 2025 and to initiate full coverage all over the EU.

Creating conditions for successful industrial digitisation (infrastructure, investment, innovation and skills: Members felt an integrated industrial digitisation must be based on strong enabling conditions ranging from a first-rate, future-proof digital infrastructure, research and development and an investment-supportive environment to an appropriate innovation-nudging legislative framework.

The report stressed the need to:

- advance public and private investment in high-speed connectivity, for example through 5G, fibre optics, navigation and satellite communications infrastructure;
- harmonise spectrum allocation, aimed at increasing demand for connectivity and enhancing the predictability of the network investment environment;
- establish leadership in key technologies such as 5G, high-performance computing, artificial intelligence, cloud computing, big data analytics, the Internet of Things (IoT), and robotics.

Particular attention should be given to the specific problems encountered by SMEs. Furthermore, the European Fund for Strategic Investment (EFSI) should be better used.

Advancing the digitisation of businesses: in this regard, the report stressed the need to:

- safeguard sensitive European technologies and know-how: Members highlighted the potential risks in regard to strategic state and industrial policy-driven foreign direct investment (FDI), particularly by state-owned enterprises by means of mergers and acquisitions; equal market access for investment should be enforced by establishing global rules;
- adopt a common European cybersecurity approach, particularly the need to advance cybersecurity for the internet of things;
- strengthen the role that the governing bodies referred to in the Directive on network security have in establishing trust in future technologies;
- establish a framework that ensures the free flow of data whilst protecting the ownership of data ;
- set out clear rules regarding data management in the framework of contractual relations between businesses ;
- establish a strong standardisation strategy, including interoperability in the digital domain; Members wanted to see an EU-wide coordinated approach through the European standards organisations (CEN, CENELEC and ETSI) in relation to international fora and consortia.

The social dimension (skills, education and social innovation): in view of the digital gap, Members considered that a digitization strategy for businesses should give a strong social dimension, including the right to training and the implementation of a skills guarantee, and lifelong learning, as well as the integration of digital skills into national education curricula. Employers should make use of the European Social Fund for such training. All Member States should develop comprehensive national digital skills strategies with targets.

Lastly, the report emphasised the importance of investing in the digitisation of vocational training and the skilled crafts sector. Digital skills also need to be combined with engineering skills and the promotion of education in science, technology, engineering and mathematics.

## 2016/2271(INI) - 01/06/2017 Text adopted by Parliament, single reading

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The European Parliament adopted by 571 votes to 32, with 35 abstentions, a resolution on digitising European industry, following the Commissions communication on this subject.

Developing an integrated Industrial Digitalisation Strategy for the EU: Members welcomed the Commissions communication on digitising European industry, and strongly believed that such a strategy is of critical importance in contributing to solving Europe's most pressing economic and societal challenges. Such a strategy would, notably:

- strengthen economic dynamic, social and territorial cohesion;
- foster quality job creation and reshoring opportunities, by improving working standards and the attractiveness of industrial sector jobs;
- strengthen European cohesion through a reliable and ambitious European investment policy;
- support Europe's goals in climate policy by reducing emissions and energy consumption;
- strengthen economic, policy and social innovation through the principles of openness and accessibility of public and private data;
- attract investment and leading researchers and expertise at world level, thus contributing to economic growth and European competitiveness;
- support new business models and innovative start-ups;
- solve some of the most pressing challenges in the transport and tourism sectors.

Parliament recommended:

- putting in place a competitive business environment that facilitates private investment, a build-up of state-of-the-art European digital infrastructure, and an EU coordination structure for the digitisation of industry;
- accelerating digitisation particularly in those Member States, regions and sectors that are lagging behind and among those people who are affected by the digital divide;
- ensuring uninterrupted and high-performance connectivity for main transport paths and hubs no later than 2025 and to initiate full coverage all over the EU.

Creating conditions for successful industrial digitisation (infrastructure, investment, innovation and skills): Members felt an integrated industrial digitisation must be based on strong enabling conditions ranging from a first-rate, future-proof digital infrastructure, research and development and an investment-supportive environment to an appropriate innovation-nudging legislative framework.

Parliament stressed the need to:

- advance public and private investment in high-speed connectivity, for example through 5G, fibre optics, navigation and satellite communications infrastructure;
- harmonise spectrum allocation, aimed at increasing demand for connectivity and enhancing the predictability of the network investment environment;
- establish leadership in key technologies such as 5G, high-performance computing, artificial intelligence, cloud computing, big data analytics, the Internet of Things (IoT), and robotics;
- ensure that new forms of work must not be used to circumvent existing labour and social legislation as regards the protection of workers and consumer rights.

Particular attention should be given to the specific problems encountered by SMEs. Furthermore, the European Fund for Strategic Investment (EFSI) should be better used.

Advancing the digitisation of businesses: Parliament called on the Commission to increase the proportion of Horizon 2020 research projects generating patents and intellectual property rights and to report thereon.

It stressed the need to:

- safeguard sensitive European technologies and know-how: Members highlighted the potential risks in regard to strategic state and industrial policy-driven foreign direct investment (FDI), particularly by state-owned enterprises by means of mergers and acquisitions;
- clarify the safety and liability rules for autonomously acting systems, including the conditions for testing with regard to automation, robotics and the application of artificial intelligence in production;
- adopt a common European cybersecurity approach, particularly the need to advance cybersecurity for the internet of things;
- strengthen the role that the governing bodies referred to in the Directive on network security (NIS Directive) have in establishing trust in future technologies
- establish a framework that ensures the free flow of data whilst protecting the ownership of data;
- monitor the adoption and coherent implementation of the European Cloud Initiative in order to enable the fair, swift, trustworthy and seamless flow and use of data;
- set out clear rules regarding data management in the framework of contractual relations between businesses ;
- establish a strong standardisation strategy, including interoperability in the digital domain.

The social dimension (skills, education and social innovation): Parliament is called upon to adequately assess the social effects of industrial digitisation and, as appropriate, to propose further measures to close the digital divide.

A digitisation strategy for businesses should give a strong social dimension, including the right to training and the implementation of a skills guarantee, and lifelong learning, as well as the integration of digital skills into national education curricula. Employers should make use of the European Social Fund for such training.

All Member States should develop comprehensive national digital skills strategies with targets.

Lastly, the resolution emphasised the importance of investing in the digitisation of vocational training and the skilled crafts sector. Digital skills also need to be combined with engineering skills and the promotion of education in science, technology, engineering and mathematics.