Digitising European Industry

Strengthening competitiveness in digital technologies value chains and platforms

European Commission

DG RTD and DG CONNECT

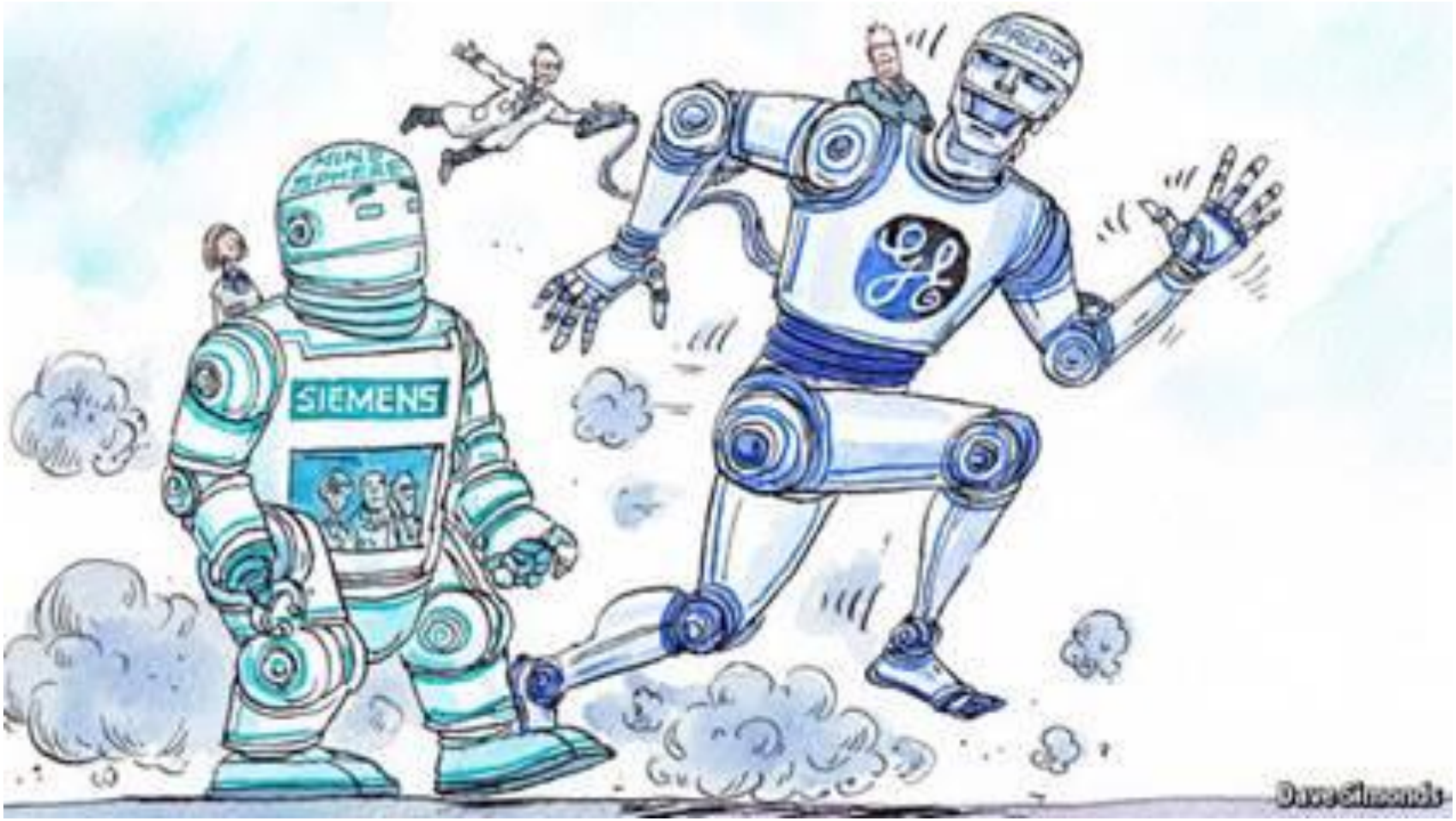
#DigitiseEU

Agenda Dec 8

1. Stocktaking
   - report from 21st October meeting
   - Inputs received
2. Next-generation platforms
   - elaborate, develop further ideas/concepts
3. Supporting initiatives
   - What kind of large scale federating initiatives are needed?
   - What platforms to be tested and demonstrated in large-scale pilots?
4. Action plan
   - Needed actions
   - Contributions from PPPs
   - Contribution from the MSs
   - Links with national initiatives

Machines learning

The Economist, 3 Dec 2016



http://www.economist.com/news/business/21711079-american-industrial-giant-sprinting-towards-its-goal-german-firm-taking-more

Machines learning

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It is no surprise, then, that the two firms are also taking very different paths towards digitisation. GE is completely reinventing itself, whereas Siemens is staying close to its roots. What works best will be closely watched by other companies in all sorts of industries. They want to know what happens when operating technology, as represented by GE and Siemens, properly meets information technology. The first tends to be organised in vertical, industry-specific silos, such as machine tools and medical equipment. The second typically comes in horizontal, widely used layers, such as computer operating systems. Bringing it all together could go badly wrong.

(…)

Big IT firms such as Google and IBM might come to control the virtual part of manufacturing by developing software and services to optimise factories and supply chains.

(…)

Yet the consumer world and that of business differ. Online search and social-networking services are easy to scale, because human beings' needs are similar across the world. Particular industries and companies, on the other hand, often have specific requirements that call for customised products—not for a platform that is trying to be all things to all machines.

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Context

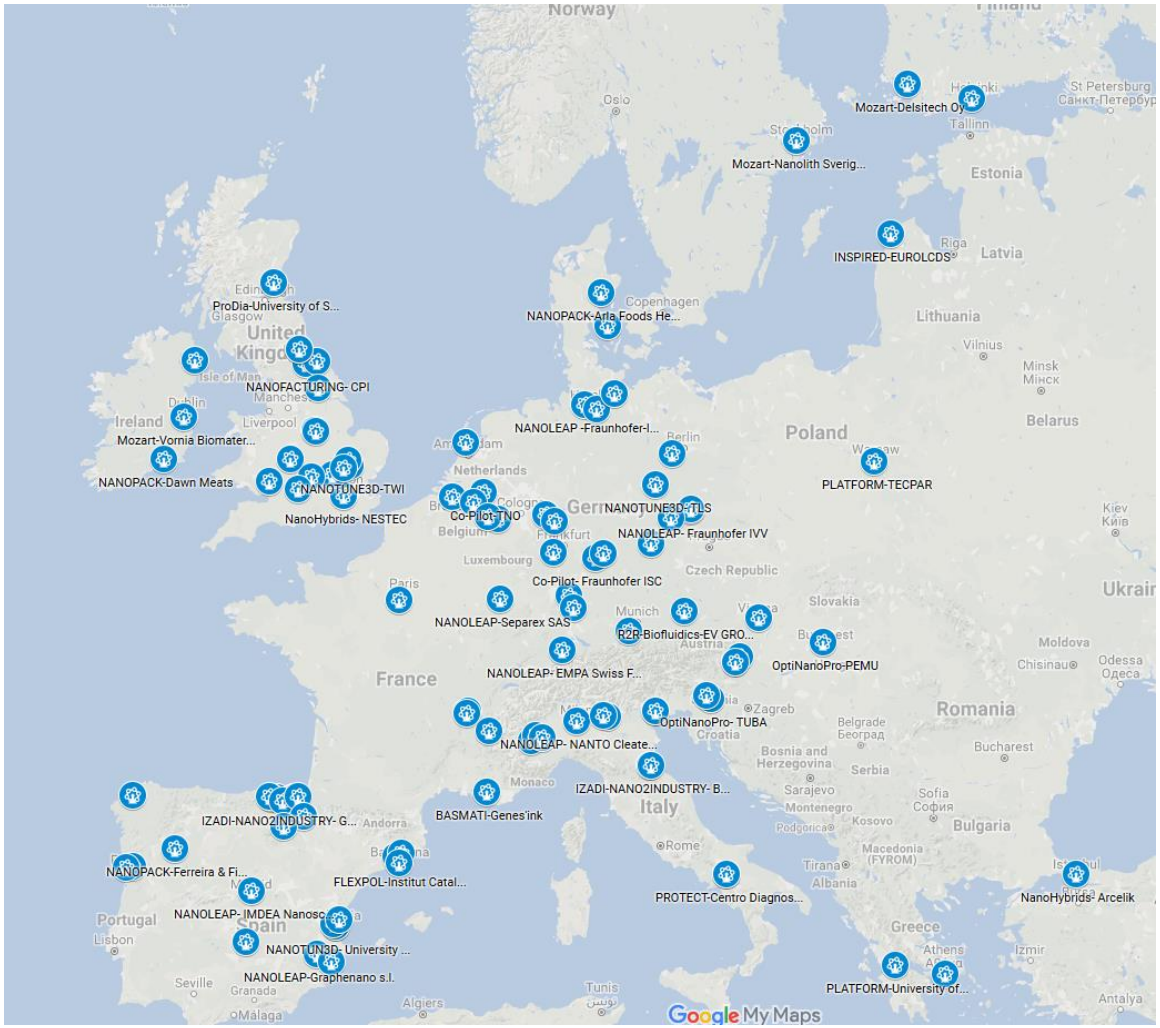
Draft WP 2018-20 topics

	Considered topics in FoF 2018-20	Instr.	Budget indication	Digitising EU Industry	Link to EFFRA doc
FoF-ICT-2018	Interoperable Digital Manufacturing Platforms for Connected Smart Factories	IA		WG2: Digital value chains and platforms	2.5 (2.1.1, 2.1.3, 2.1.4, 2.2, 2.3.4, 2.4.3)
	Support action for Digital Manufacturing Platforms	CSA			
FoF-ICT-2019	Building on advances of AI, machine learning, data analytics in manufacturing - based on the concept of digital twins of physical assets	RIA			2.5.4
	Vulnerability/security assessment and penetration testing for collaborative manufacturing	RIA			2.5.2
FoF-ICT-2020	I4MS (phase 4) – uptake of digital game changers and digital manufacturing platforms • CPS and IoT • Autonomous systems, robots and humans • Modelling, simulation, analytics, and AI • Laser-based additive manufacturing	IA		WG1: Digital Innovation Hubs	2.5.3, 2.1.3, 2.1.4 2.1.4, 2.3.2 2.5.1, 2.5.2 2.1.1
	Support action for I4MS	CSA			

- SME equipment producers = Europe's strength
  - They offer niche solutions for manufacturing
  - They have world-class products of highest quality and precision
  - They are able to quickly conquer new markets worldwide
- Today:
  - Manufacturers visit industrial trade fairs to get informed about novelties
  - No online one-stop-shop
- Proposal:
  - Create Commercial Online Platform bringing together manufacturers & equipment suppliers
  - Facilitating decision making & new business for both sides
- Online Platform:
  - To offer transparency: Buyers comparing products/prices & learn from other users
  - To help manufacturers stay on top of tech developments & improve operations.
  - Equipment suppliers to advertise & showcase products to buyers worldwide

Would EU Member States support?

Possible link with Pilot Networks/Hubs



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   - Report from 21st October meeting
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   - Elaborate, develop further ideas/concepts
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1. Stocktaking
Inputs received

- So far:
  - Comment by Jan van den Biesen (Philips), 17/11/2016 17:04, subgroup Health and Care
  - Comment by Kai Peters (VDMA), 17/11/2016 16:01, VDMA on Platforms for Connected Factories
  - Comment by Alejandro Cadenas (Telefonica), 18/11/2016 11:18, Do you consider the 6 topics
  - Jan van den Biesen (Philips), 17/11/2016, HealthSuite Digital Platform
  - Marcus Wittrin (Germany, Federal Ministry of Education and Research), 18/11/2016, RE: DEI WG2: Oct 21 workshop report.
  - Ana Garcia Robles (BDVA), 18/11/2016, BDVA input to DEI WG2 data
  - Martin Winter (SPIRE PPP), 18/11/2016, SPIRE PPP Contribution DEI, WG2
  - Cornelius Eich (ZVEI), 18/11/2016, ZVEI contribution
  - Ivo Hostens (CEMA), 18/11/2016, CEMA input to DEI WG2 on smart farming
  - Daniel Azevedo (COPA COGECA), 18/11/2016, Copa Cogeca inputs
  - Egbert-Jan Sol (Netherlands), 17/11/2016, Contribution from the Netherlands
  - Milan Petkovic (BDVA), 18/11/2016, BDVA input to DEI WG2 Health subgroup
  - Davide Dalle Carbonare (BDVA), 18/11/2016, BDVA input to DEI WG2 Manufacturing subgroup
  - Simon Scerri, Soeren Auer (Fraunhofer), 18/11/2016, Fraunhofer input to DEI WG2
  - Silviya Lozanova (Bulgaria), 18/11/2016, Contribution to the Digitising European Industry Working Group 2
  - Herve Meteyer (France), 18/11/2016, DEI WG2 French contribution
  - Chris Decubber (EFFRA), 22/11/2016, Contribution from EFFRA (Factories of the Future PPP)
  - Luis Perez-Freire (AIOTI), 22/11/2016, Contribution from AIOTI on smart agriculture subgroup
  - Ovidiu Vermesan (IERC and IoT-EPI), 06/12/2016 , IERC and IoT-EPI input for the DEI WG02 subgroup IoT
  - Yongjing Zhang (Huawei), 06/12/2016, Huawei answers to DEI WG2 Questions
  - AIOTI WG03 Members, 06/12/2016, DEI WG2 Questions and Answers provided by AIOTI WG03 Members
  - Eddy Roelants (Siemens), 07/12/2016, Siemens input: position paper on Digital Platforms and on Digitalization of EU Industry (DEI)

https://ec.europa.eu/futurium/en/dei-implementation

European Commission

		Connected Smart Factory	Digital transformation of health and care	Smart agriculture	Industrial Data Platforms	Internet of Things
Austria						
Belgium						
Bulgaria		■	■	■	■	■
Croatia						
Cyprus						
Czech Republic						
Denmark						
Estonia						
Finland						
France		■	■	■	■	■
Germany		■			■	
Greece						
Hungary						
Ireland						
Italy						
Latvia						
Lithuania						
Luxembourg						
Malta						
Netherlands		■				
Poland						
Portugal						
Romania						
Slovakia						
Slovenia						
Spain						
Sweden						
United Kingdom						
AIOTI				■		■
Big Data		■	■		■	
EIP-AGRI						
FoF		■				
IMI						
SPIRE		■				
Invited experts		VDMA, Telefonica, ZVEI, Siemens	Philips, ZVEI	ZVEI, CEMA, COPA COGECA	Telefonica, ZVEI, COPA COGECA, Fraunhofer	IERC and IoT-EPI, Huawei

Platform building in running major projects related to sectorial DEI subgroups

	Connected Smart Factory	Digital health & care	Smart agriculture	Connected & autom. driving
Factories of the Future	**FoF-11** - automation - supply chain			
Internet of Things		**ACTIVAGE** - cloud serv. SC cofinanc.	**IOF2020** - cloud serv. AGRI cofinanc.	**AUTOPILOT** - services for connected cars
CONNECT SC		**UNIVERSAAL** - medical serv.		**SCOUT** - 4G connectivity
Big Data		**AEGLE** - personalized services	**DATABIO*** - satellite data in agriculture	**AUTOMAT** - Vehicle Data Services
ECSEL JU	**ARROWHEAD** - automation **Productive40*** - supply chain			**ENABLE-S3** - ADAS systems **CRYSTAL** -Autosar
Future Internet	**FITMAN** - optimization	**FISTAR** - cloud serv.	**FI-Space** - cloud serv.	
RTD/MOVE SC	minor	minor	minor	**CARTRE** - WIFI connectivity

*** smart city pilot SYNCHRONICITY**

Connected Smart Factories
Major platform projects

	Projects	Objective	Stakeholder type	Public funding
Factories of the Future	**FoF-11** - automation	Reference Implementations of platforms	Techn. Provider Users	25 M€
Factories of the Future	**FoF-11** - supply chain	Reference Implementations of platforms	Techn. Provider Users	25 M€
ECSEL JU	**ARROWHEAD** - automation	Low-cost, service-oriented middleware for industry automation	80 partners users: Production, infrastructures, Electro mobility, Energy production	30 M€
ECSEL JU	**Productive40*** - supply chain	Create systems for planning, virtualising and controlling of - Supply Chain - Product Life Cycle	120 partner Techn. Providers Users from electronics, automotive, construction	tbd

1. Stocktaking

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Oct 21 Report

General

- Potential categorisation of platform initiatives
  - Community-led sector-specific
  - Community-led cross-sector
  - Commercial platforms with open interfaces
- Efforts are fragmented
- Need for better mapping of EU, Member State and private sector initiatives

Connected Smart Factory

- PPPs FoF and SPIRE
- National initiatives
  - NL: Smart Industry
  - ES: Industry 4.0 initiative
  - IT: National industrial plan
  - …

2. Next-generation platforms

2. Next-generation platforms
   - Elaborate, develop further ideas/concepts

<u>Oct 21 report, Vision for the future</u>

General
- Users at the centre of digital value chains
- Data ownership issues
- Blurring boundaries between B2B and B2C
- Growth of the cloud and M2M opportunities
- From targeted data collection to ‘store everything, search later’
- Circular Economy traceability requirements
- Need for large-scale federating initiatives
  - Mutual access to shared data
  - New business models
  - Addressing disruptive technologies?

Connected Smart Factory
- Start from successful established platforms and build on them
- B2B vs B2C; M2M; Circular Economy; Vanguard; Relevant infrastructure
- Need for large-scale federating initiatives

3. Supporting initiatives

3. Supporting initiatives
   - What kind of large scale federating initiatives are needed?
   - What platforms to be tested and demonstrated in large-scale pilots?

Oct 21 report , Bridging the Gap and Addressing the Issues

General

- Interoperability as key focus for testing and validation
- Promote industrial partnerships, both large and small companies
- Promoting standards; convergence of existing standards
- Support (access to) large-scale experimental facilities, including links to national experimental facilities
- Build the ecosystem
  - Innovation spaces
  - Incubators
  - Access to finance
  - Coordination actions
- Reach out to SMEs and engage them
- Need for world-class infrastructure

Connected Smart Factory

- Demonstrate value via validation, demonstration and experimentation
- Interoperability as key focus for testing and validation; Engage with SMEs, startups and entrepreneurs
- No one-size-fits all, competition between platforms is generally a good thing
- Legal regime is important, esp. IPR

Reflections on degrees of freedom

- Choice of baseline platform(s)
- Domain / Use case / sector
- Grand challenge - Unifying concept - Focus
- Balance: visionary – real vs lab – innovative - pre-competitive
- Small number of large strategic initiative-type projects
  - With dynamic involvement of many actors across the value chain
  - Broad involvement of SMEs and mid-caps
  - Strong user pull
  - Strong degree of openess while safeguarding the interests of European world market leaders
- Pooling of resources: EU, MSs, industry - conditional funding
  - EU funding := the linking pin
  - High priority to the wishes of industry and MSs

4. Action plan

4. Action plan
   - Needed actions
   - Contributions from PPPs
   - Contribution from the MSs
   - Links with national initiatives

<u>Oct 21 report, Main stakeholders to be involved</u>

General

- PPPs, as representatives of industry, have a vital role
- Building on European initiatives
- Risk that too much is being expected from relatively few initiatives

Connected Smart Factory

- Risk that segmented sectoral and national initiatives develop in isolation
- PPPs should be encouraged to align their strategies
- PPPs represent views of industry and will be very important in taking the digital platforms initiatives forward
- Considerable requirements for digital infrastructure investment

Agenda Dec 8

- 09:30 - 09:45 Welcome Plenary
- 09:45 - 10:00 Objectives for today
- 10:00 - 10:15 Discussion
- 10:15 - 10:45 Coffee break
- 10:45 - 12:30 Parallel sessions on vertical areas:
  - Connected Smart Factory (room CCAB-0A)
  - Digital transformation of health and care (room CCAB-3.04)
  - Smart agriculture (room CCAB-3.05)
- 12:30 - 13:30 Lunch break
- 13:30 - 15:15 Parallel sessions:
  - Industrial Data Platforms (room CCAB-0A)
  - Internet of Things (room CCAB-5B)
- 15:15 - 15:45 Coffee break
- 15:45 - 16:30 Closing plenary
  - Reporting from groups, next steps, and closure