The Concrete Initiative Workshop

What can we learn from new trends in the construction sector?

Brussels, 6 February 2019

"Construction 4.0: a digital platform for construction in Europe"

Luigi Perissich, Secretary General Federcostruzioni

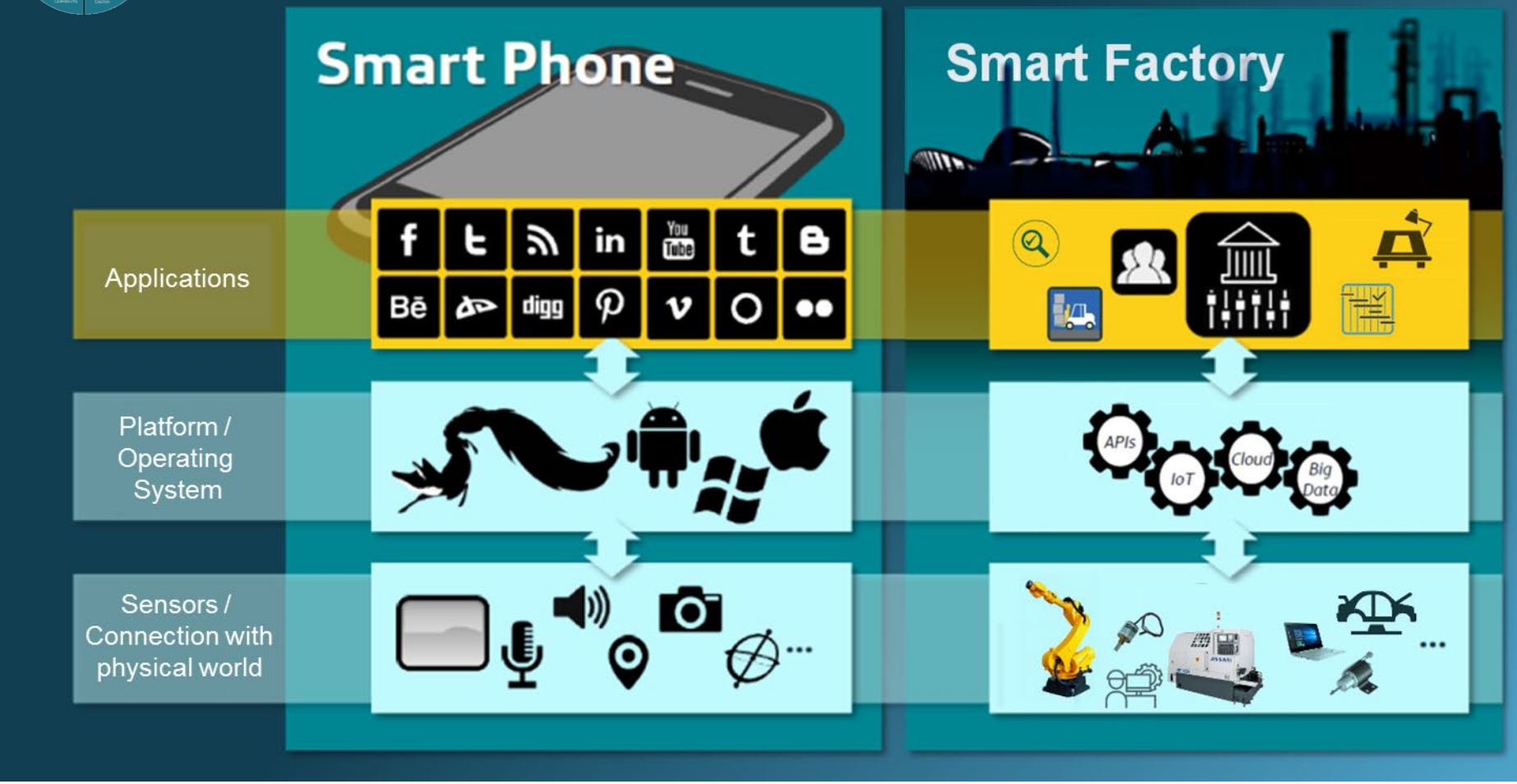
Technology Value Chains

Micro Electronics

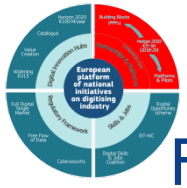
Autonomous drive

Healty Aging

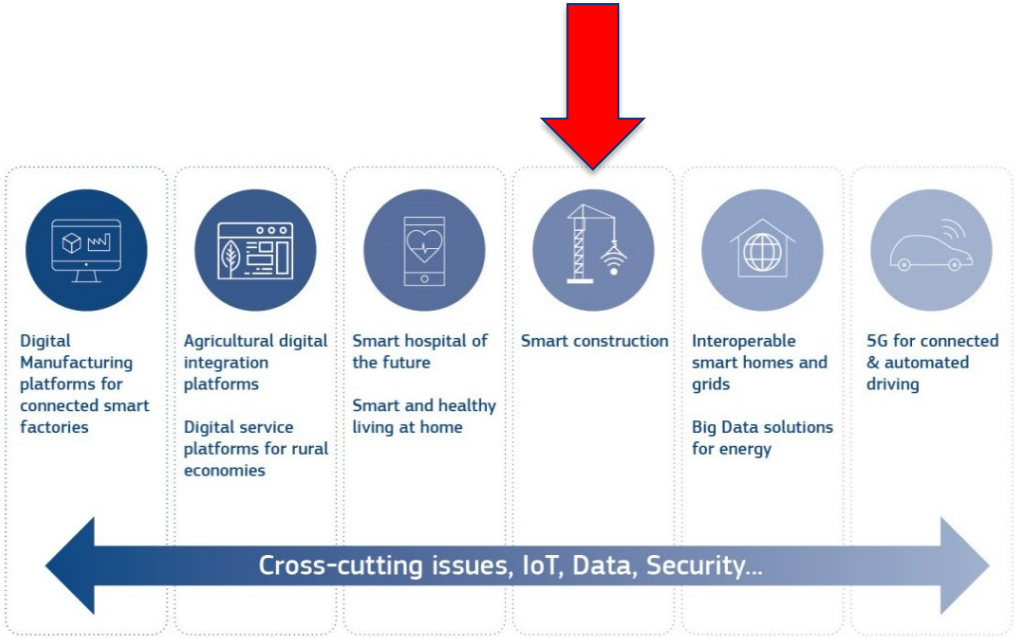
Digital Industrial Platforms
Smartphone analogy

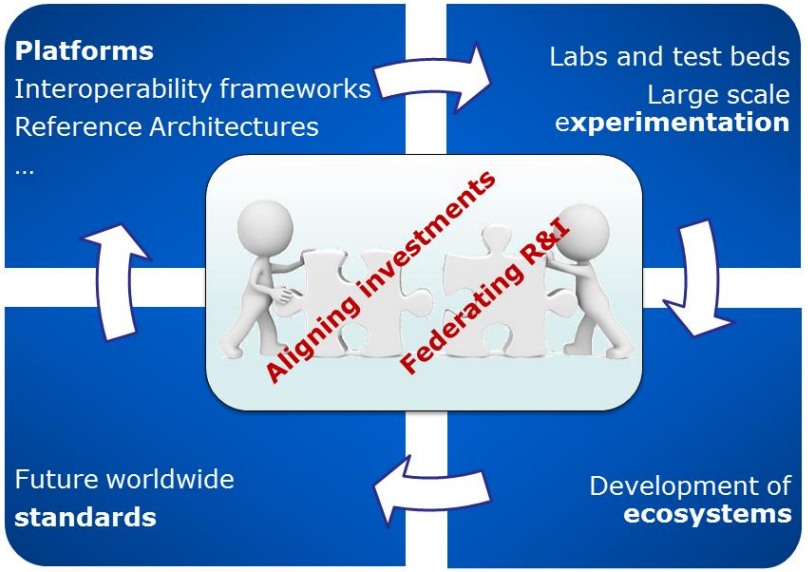


Digital Industrial Platforms
Work Program 2018-20



Focus area on DEI: Platform and piloting actions



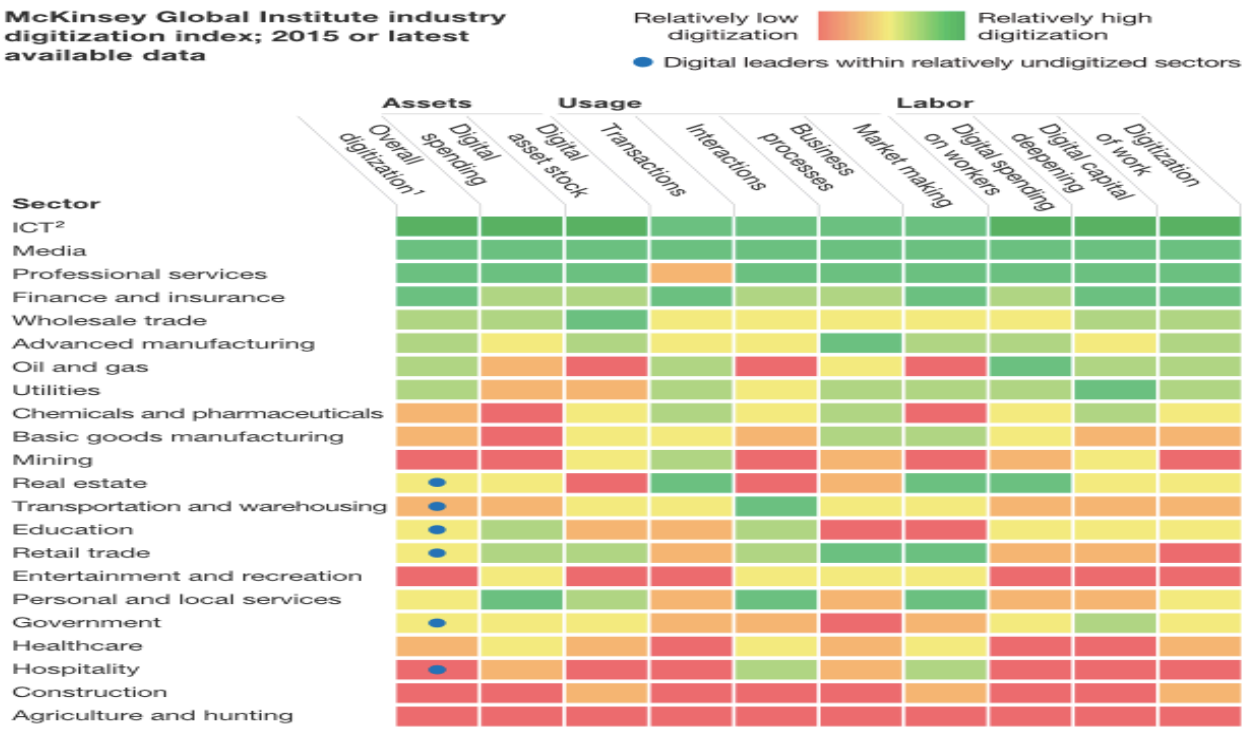


Horizon 2020 (300M€ for 2018-20):

- Next generation platform building and piloting through large scale federating projects
- Common EU-wide strategies pooling resources

DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities, 4 M€
Including Preparation of a digital industrial platform for the construction sector, 1 M€ .

Digital Industrial Platforms
Late proposal to add construction sector to WG/WP



- Request from **Federcostruzioni**, support from **ECTP** and **FIEC**- Fédération de l'Industrie Européenne de la Construction
- Efforts in Italy, France, Germany, the Netherlands, UK
- Joint effort at European level needed

See: https://ec.europa.eu/futurium/en/content/contribution-federcostruzioni-dei-wg2

Digital Platforms/Pilots Horizontal Activities
Scope

c) Preparation of digital industrial platform for construction sector

- **Increased prospects on productivity improvements in the construction sector, and on a contribution to a more sustainable construction sector.**
- Define reference architecture for digital industrial platform for construction sector
- Take into account Level(s), the recently developed framework to assess environmental performance of buildings, including circular economy aspects *
- Take stock of ongoing initiatives, promote mutual learning and coordination, and identify knowledge and intervention gaps
- Building Information Modelling and building passports are part of scope

* http://ec.europa.eu/environment/eussd/buildings.htm

Expected impacts

The DT-ICT-13-2019 project aims at the creation of a DCP (Digital Construction Platform) which provides a **highly interoperable digital brokerage platform** which objective is two-fold:

- to drive the construction industries' and SMEs evolution **from traditional 2D** planning and process and siloed workflows **to a highly cooperative and efficient 4D BIM-based planning and project management process** – with a unique technology solution that allows the **integration all data streams** – **BIM-based static** buildings and districts data (topology, buildings geometry, networks, etc.) and **IoT-based dynamic data** (buildings use, occupancy profiling, energy/water consumption, etc.) thus leading to the appropriate environment to engage all team members in a transparent process to optimize construction projects of all types from tendering through construction, commissioning and handover;

- to **provide seamless Digital integration of third-party applications and services**, supporting simulations, decision-making, optimization for the entire project life-cycle, including potential links with manufacturing and logistics.

DT-ICT-13-2019 development strategy

→ Current practices, scenarios, Existing Digital Platforms

DT-ICT-13-2019

↓ Suggested R&I actions/topics for pan-European digitalisation of the Construction industry

WP 3-4-5

Funding organisations (EC, MS,..)

Funding to support RAF instanciations & pilots

Derived from DT-ICT-13-2019 achievements

Construction industry

⇒ ***RAF: Reference Architecture Framework***

⇒ ***DCH: Digital Construction Hubs***

	Construction sector	***ICT/software*** sector
Relations with ***DT-ICT-13-2019*** — **2019 →**	← Development of digital-based future scenarios. Synthesis about current (digital platforms) technologies & tools, needs for new functions & integration of enabling technologies. Identification of barriers. Endorsement of RAF. ↓ Setting targets for usage/scenarios & procurement of future Construction Digital platforms.	↓ Setting requirements/specifications for functions & integration of Construction Digital platforms.
Digital Platforms implementation (through DCH) — **2020 →**	↓→ Derive detailed use cases from digital-based future scenarios. → Provide Construction Digital platform service requirements.	↓ Integrate models, ICT technologies and tools to instantiante RAF-based digital platforms (TRL6-7). **LAB**
DCH pilots / full-scale demonstrations — **2021 →**	↓→ Test Digital platforms and associated ICT tools and their integration in new Construction processes. ↓ Assess the relevance of digital-based future scenarios.	← Tune Digital platforms & ICT tools according to feedback from validation tests in DCHs. ↓ Assess potential for replication & generalisation of Construction digital platforms (TRL8). **FAB**
Take up stage (Construction market) — **2023 →**	↓ Adopt/Generalise Digital platforms & associated ICT tools in new Construction integrated processes (at all stages).	↓ Deploy proven Digital platforms in operational environments (TRL9) – relying on standards-based models & interfaces **APP**

Thank you

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