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The Internet of Things : A brave new world

In the recent years the Internet of Things has become a concept that now systematically pops up in all digital events on **5G**, **cloud computing**, **big data**, cybersecurity and connectivity in general. Beyond this hype, the IoT promi-ses a new internet era where virtually everything could be connected.

The Internet of Things refers to the **interconnection** of computing devices embedded in objects, enabling them to send and receive data. Behind this definition, a vast reality in which manufacturers, network operators and application providers experience a wide range of technical possibilities (Low power wide area networks, cellular or satellite networks) and business models (B2B, B2B2C, B2C). The potential vertical applications are nearly infinite: energy management, autonomous driving, e-health, etc. Prospective analyses are announcing billions of connected devices (36 by 2030 according to the IDATE Digiworld Yearbook 2017) and a corresponding tremendous economic benefit. To grasp these potential benefits, a wide industrial **Alliance for the Internet of Things Innovation** **(AIOTI)** was launched in 2015. Yet the challenges are as diverse as the potentialities…

First of all, the announced scarcity of limited resources such as **spectrum**. In this regard, the need very much depends on the underlying technology, being a wide area low power one (unlicensed spectrum), mobile technologies (2/3/4G and later on 5G) or satellite. The network deployment being in its infancy, the scarcity is not yet a problem but the issue still ranks high in the work program of entities involved in spectrum management (ITU, CEPT, RSPG, etc.). Scarcity may also concern the allocation of **devices' identifiers** (to allow their interconnection), especially in cellular networks. The undergoing revision of the telecoms rules tries to provide an answer by proposing to open numbering resources to non-traditional telecom operators.

Second, the lack of **interoperability** between connected objects could hijack the efficiency of the ecosystem, preventing the expansion of the network, economies of scale, potential innovation and more importantly, it could lock-in consumers. International standardisation organisations and industrial consortia are already trying to define their own common technical standards. Working with international and EU standards' organisations to "*foster an interoperable environment*" is one of the Commission's objectives as asserted in its ICT Standardisation priorities for the Digital Single Market.

Third, the generalisation of the IoT could be hampered by a lack of **trust from end-users**, especially in the case where objects will interact in an automated way (machine-to-machine communications) or even using artificial intelligence. The EU is already active on this issue, with the recently adopted Network and information systems security directive and with an upcoming new **Cybersecurity** strategy expected this autumn. Beyond the very practical necessity to prevent the hacking of connected cars, TV or toys, the emergence of a global IoT ecosystem also raises the issue of **privacy** and **data protection**. Here again, the regulatory work at EU level has started, first with the recent adoption of the new framework to protect consumers' privacy, and with a proposal to extend the principle of confidentiality to machine-to-machine data transmission.

To go further, the EC has published in 2016 a political paper on "Advancing the IoT in Europe" to accompany the Strategy on digitising the European Industry. Its three core wishes: a Single Market of services and devices able to connect seamlessly in Europe; a thriving and **interoperable** ecosystem, and a **human-centered** IoT respectful of consumers. However, it will remain difficult for the European Commission to work on a European one-size-fits-all approach.

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PRIMA le parole e poi la musica

On April 26th, the European Parliament and the Council reached an agreement on the Commission's proposal for a "**Partnership for Research and Innovation in the Mediterranean Area" (PRIMA)** to finance **R&I projects** in **water** resources and **food** systems. Involving eleven Member States and five third countries (Israel, Tunisia, Egypt, Lebanon, Morocco), it is scheduled to run for ten years, starting in 2018**.** The EU will invest €220 million from its R&D programme **Horizon 2020** and the **Participating States** (PS) are committed to provide an equivalent amount either in cash or in kind.

This is the sixth initiative set up under **Article 185 of the TFEU**, a legal basis which enables the EU to participate in research programmes undertaken by several Member States. The objective of these partnerships is to integrate national research efforts in specific areas. They are implemented by a **dedicated structure** gathering the PS and the Commission.

The first five partnerships were adopted between 2003 and 2009 (the first being the European and Developing countries Clinical Trial Partnership, or EDCTP).

After these initial experiments, the Commission became more reluctant to propose new initiatives on the basis of article 185 considering that integration was hindered by a lack of **political will** as well as **administrative barriers** to transnational funding. Moreover, the European Parliament had expressed *"the strongest possible reservations"* on the *"**variable geometry**"* of these partnerships. As a result, the 2013 Horizon 2020 regulation stressed that they *"shall be proposed in cases where there is a need for a dedicated implementation structure and where there is a high level of commitment of the participating countries to integration at scientific, management and financial levels".* Nevertheless, the Article 185 initiatives were renewed in 2014 after Horizon 2020 had been adopted at the end of 2013.

Thus no wonder that it took some time for PRIMA to materialise. The core group of Member States interested in PRIMA was formed at the Informal Competitiveness Council held in Nicosia in July 2012. In December 2014, nine Member States asked the Commission to set up the initiative and they have maintained a constant political pressure to keep momentum on the process since then.

In line with its objective of Better Regulation (Guidelines), the Commission created an Expert Group and prepared an ex-ante impact assessment. Both concluded that using Article 185 was the best option for PRIMA. After a stakeholder event and a public consultation, the Commission eventually presented a proposal in October 2016 which was adopted in six months, i.e. five years after the Nicosia Council. There is now only six months left to set up the implementation structure in order for PRIMA to start early in 2018. It is time to get going…

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