



Recommendation 8:



Using 'Internet of Things' to meet the societal need 'Inclusive well-being and health'

Status quo:

There are several applications of the IoT technology in the area of Health, the latter pertaining to providing assistance to people or enabling automated medication and maintenance of medical devices. According to Dimitrov, "devices and mobile apps are now increasingly used and integrated with telemedicine and telehealth via the medical Internet of Things (mIoT)". Potential applications of the IoT technology in the domain of health care include i. Remote health monitoring; ii. Emergency notification systems / contacting the hospital in case of emergencies; iii. Telemedicine; iv. Early detection of and warning about patients at risk.

* Dimitrov DV (2013) Medical Internet of Things and Big Data in Healthcare.

Recommended actions:

Technical challenges:

- Tackling security concerns regarding the protection of sensitive information as well as that of human lives and health;
- Ensuring connectivity – creation of meshes with no single point of failure (IoT networks' decentralization or development of peer-to-peer ecosystems);
- Addressing compatibility & longevity challenges – development of common IoT standards, including network protocols, communication protocols and data aggregation standards.



Non-technical challenges:

Training: Train developers on the threats of IoT programming and thereby the production of both secure and functional applications;

Promotion: Educate end users on best practices around the use of IoT devices for improving privacy and security;

Data privacy: Develop regulations around the ownership of data and how it is used; Develop strategies to respect individual privacy choices across a broad spectrum of expectations, while still fostering innovation in new technologies and services.



Inclusive well-being and health:

The pursuit of well-being, provision of a primary health care services, realignment between work, personal and community life and a stable work-life balance across all age groups and gender. Some instances of this need include providing basic health care services and personalized services for disabled and physically impaired, child care, maintaining the quality of life (work-life balance, cultural and free time), and reducing the stark economic and social isolation of elderly people. 10 of our informants mentioned this as a priority need. Their comments and concerns embrace issues such as "more appropriate medical care", "improved access to primary health institutions", "social cohesion", and "lack of solidarity and rise of selflessness".

Internet of Things:

The Internet of Things (IoT) stands for the internetworking of physical devices, vehicles (also referred to as "connected devices" or "smart devices"), buildings and other items – embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data. IoT allows objects to be sensed and/or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems, and resulting in improved efficiency, accuracy and economic benefit. When IoT is augmented with sensors and actuators, the technology becomes an instance of the more general class of cyber-physical systems, which also encompasses technologies such as smart grids, smart homes, intelligent transportation and smart cities**.*

* Gartner IT Glossary – Internet of Things, <http://www.gartner.com/it-glossary/internet-of-things/>

** Wikipedia – Internet of things, https://en.wikipedia.org/wiki/Internet_of_things