



IoT Opportunities and Impacts

What is the Internet of Things? What is Machine-to-Machine (M2M)?

As in any new industry, common definitions are not yet fully delineated. Different sources offer various descriptions. For example, sometimes the acronym IoT is used for services that do not provide connections over the Internet and/or are not connecting things.

At GSMA we use the following definitions:

Internet of Things (IoT): Coordination of multiple vendor machines, devices and appliances connected to the Internet through multiple networks. Devices include everyday 'objects' such as smartphones, tablets and consumer electronics, such as machines, vehicles, monitors and sensors equipped to support M2M services.

Machine to Machine (M2M): Devices and appliances connected wirelessly or via IP. In most cases, communication takes place autonomously, with limited human intervention. M2M is an integral part of the IoT.

How big is the IoT?

The GSMA estimates that at the end of 2015 there will be about 313 million¹ active M2M cellular connections in the world. The GSMA currently counts 468 active operators in 190 countries having launched M2M services, this is excluding tablets connectivity. In the future this number is set to grow substantially, with forecasts indicating that there will be 1 billion active connections by 2020. However it is important to note that cellular M2M devices are only a small and important subset of the entire M2M world. Cisco, for example, estimates that by 2020 there will be a total of 25 billion M2M connected devices.

Why is it important?

The positive impact of the IoT on citizens, consumers, businesses, and governments will be significant, ranging from helping governments reduce healthcare costs and improving quality of life, to reducing carbon footprints, increasing access to education in remote underserved communities, and improving transportation safety.

The expected impact by 2020 is estimated to be in the region of \$4.5 Trillion² in terms of the value-added impact of the IoT, including both revenue opportunities and cost savings that may be generated. Machina Research recently estimated the value of the IoT revenue opportunity on its own being \$4.3 Trillion by 2024.³

¹ GSMA intelligence (2015)

² PWC- Realising the benefits of IoT (2015)

³ Machina research (2015)

Most importantly, the economic benefits associated with the IoT will be substantial. For example, PWC estimates that the IoT could save 99 billion EUR⁴ in healthcare costs in the EU, and traffic telematics could help Chinese commuter reclaim nearly two hours each of their time every week. Smart metering could reduce power theft in India and save enough electricity to power more than 10 million homes⁵.

What are typical IoT applications?

Applications range from consumer to business, from being focused on developing economies to more mature markets.

For example:

MyDoctor@Home is a remote monitoring service that allows patients suffering from chronic illnesses to monitor blood pressure, heart rate, oxygen levels and electrocardiogram directly from their home. Telecom Italia provides the connectivity services but in a bid to increase its revenue opportunity the operator has also developed extensions, including a cloud computing solution delivered through scalable, on-demand data centre capacity.

Smart Santander: Telefónica, in collaboration with the Santander City Council of Spain and 24 ecosystem partners, has installed more than 20,000 sensors across the city in order to capture and transmit real-time data for managing traffic jams, parking space availability, air quality measurement and remote street lights dimming.

Cargo with FlightSafe uses sensors to track valuable cargo by collecting information details such as location, humidity, temperature and light. For the product to work seamlessly, the cargo is tracked on a real-time basis across as many as 200+ countries through partnerships that AT&T has created with 28 airlines.

Mobisol Smart solar power plants: Mobisol systems are small solar power stations that can be paid for in instalments via mobile money services such as M-Pesa. The use of mobile money services for payments allows customers to pay unbanked customers to pay the cost of the systems in affordable instalments⁶

⁴ PWC (2013)

⁵ PWC (2015)

⁶ References and additional case studies can be found in the report – Realising the benefits of the IoT (2015) published by GSMA.