IoT evolved from machine-to-machine ([M2M](https://internetofthingsagenda.techtarget.com/definition/machine-to-machine-M2M)) communication, i.e., machines connecting to each other via a network without human interaction. M2M refers to connecting a device to the cloud, managing it and collecting data.Connention like these are called neural network.This means the computers learns by doing it .It tries to maximize the outcome.

Taking M2M to the next level, IoT is a sensor network of billions of smart devices that connect people, systems and other applications to collect and share data. As its foundation, M2M offers the connectivity that enables IoT.

The internet of things is also a natural extension of [SCADA](https://whatis.techtarget.com/definition/SCADA-supervisory-control-and-data-acquisition) (supervisory control and data acquisition), a category of software application program for process control, the gathering of data in real time from remote locations to control equipment and conditions. SCADA systems include hardware and software components. The hardware gathers and feeds data into a computer that has SCADA software installed, where it is then processed and presented it in a timely manner. The evolution of SCADA is such that late-generation SCADA systems developed into first-generation IoT systems.

The concept of the IoT ecosystem, however, didn't really come into its own until the middle of 2010 when, in part, the government of China said it would make IoT a strategic priority in its five-year plan.

### How IoT works

An IoT ecosystem consists of web-enabled smart devices that use embedded processors, sensors and communication hardware to collect, send and act on data they acquire from their environments. [IoT devices](https://internetofthingsagenda.techtarget.com/definition/IoT-device) share the sensor data they collect by connecting to an IoT gateway or other edge device where data is either sent to the cloud to be analyzed or analyzed locally. Sometimes, these devices communicate with other related devices and act on the information they get from one another. The devices do most of the work without human intervention, although people can interact with the devices -- for instance, to set them up, give them instructions or access the data.

The connectivity, networking and communication protocols used with these web-enabled devices largely depend on the specific IoT applications deployed.

The Internet of Things (IoT) is a creature in which objects, animals or humans are endowed with a unique identifier. It also provides the ability to transfer data over a network without human-to-human or human-to-computer interactions. The Internet of Things has evolved from the convergence of wireless (wireless) technology, MEMS (Micro-Electromechanical Systems) and the Internet.

One thing on the Internet of Things can be, for example, a person with a pacemaker, a farm animal with a biochip transponder, or an automobile with built-in sensors. The latter could trigger a warning if the tire pressure is too low. In principle, every man-made object is a candidate that can be equipped with an IP address and can transmit data via the network. So far, the Internet of Things has been most commonly associated with machine-to-machine (M2M) communication in manufacturing, as well as power, gas and oil supply. When equipped with M2M communication, products are often referred to as smart or smart (smart labels, smart meters, smart grid sensors).

The much larger IPv6 address space is an important factor in the development of the Internet of Things. Steve Leibson introduces himself as an "occasional lecturer at the History Museum of Computers." He says that by extending the address space, every atom on the Earth's surface could now receive an IPv6 address. After that you would still have enough addresses left to provide another hundred or more earths. In other words, humans could assign an IP address to every "thing" on planet Earth. The growing number of intelligent nodes (nodes) is expected to raise new privacy, data sovereignty and security concerns.

The concept had no official name until 1999. Nevertheless, the Internet of Things has been in development for decades. The first Internet appliance, for example, was a coke machine at Carnegie Melon University in the early 1980s. The programmers were able to connect to the machine via the Internet, check the status and find out if there is still a cool refreshment in it. Afterwards he could decide if he should take the way there.

Kevin Ashton is co-founder and CEO of the Auto-ID Center at MIT. He first mentioned the Internet of Things as such in a presentation he considered Procter & Gamble. Ashton explains the potential of the Internet of Things as follows:

History of IoT

Kevin Ashton, co-founder of the Auto-ID Center at MIT, first mentioned the internet of things in a presentation he made to Procter & Gamble (P&G) in 1999. Wanting to bring radio frequency ID (RFID) to the attention of P&G's senior management, Ashton called his presentation "Internet of Things" to incorporate the cool new trend of 1999: the internet. MIT professor Neil Gershenfeld's book, When Things Start to Think, also appearing in 1999, didn't use the exact term but provided a clear vision of where IoT was headed.