

INTERNET OF THINGS

A BRIEF HISTORY

While we've only been reaping the practical benefits of the Internet of Things on the consumer and enterprise levels in the last decade or so, IoT is a much older concept than you would think. The idea of embedding things with sensors and compute to retrieve data intelligence has actually been around since the 1980s.



However, only recently has it made large strides with the introduction of inexpensive and low-powered devices, widespread Internet access, and interest from both the business and the consumer space. From its humble beginnings four decades ago, IoT has evolved to surpass the number of people on the planet, with an expected 14 billion devices by the end of 2022.



In **1969** ARPANET, the precursor to the Internet, is deployed by the US Defense Advanced Research Projects Agency. ARPANET was made available to the public in the 1980s.

In **1982**, computer scientists at Carnegie Mellon University connected a soda vending machine to ARPANET so that they could check if the machine had soda and that the soda was cold.



In **1990**, John Romkey created an Internet Connected Toaster which he controlled remotely to turn it on and off.



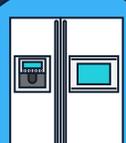
In **1995**, the GPS program is completed. This enabled a major component of IoT devices – location.



In **1998**, IPv6 became a draft standard paving the way to connecting every device imaginable.

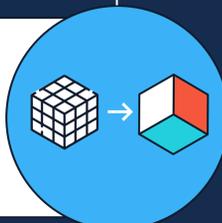


In **1999**, Kevin Ashton of MIT coined the term Internet of Things.



In **2000**, LG creates the Internet-connected refrigerator which allowed one to track items in the fridge. It ends up being too expensive for the average consumer, costing roughly \$20,000.

In **2002**, the “digital twin” gained recognition as a concept as defined by Michael Grieves. A digital twin refers to a virtual replica of any physical entity (physical twin) to mimic each other's state to predict system or component behaviour.



In **2007**, the iPhone is created allowing users to interact with devices connected to the Internet.



In **2008**, the number of Internet-connected devices surpassed the number of people on the planet.



In **2009**, Google starts testing self-driving cars, the first Internet-connected pacemaker is released, and Bitcoin begins its operations based on blockchain technology.



In **2010**, Nest introduces a smart thermostat and starts the smart home evolution.



In **2013**, Google Glass is introduced as a personal compute device that you wear like glasses. It was a little ahead of its time.

In **2014**, the Industrial Internet of Things (IIoT) Standards Forum demonstrates how IoT can change the way manufacturing and supply chain processes work.



In **2016**, GM, Lyft, Tesla, and Uber start testing self-driving cars.

In **2020**, Google Glass Enterprise Edition 2 is introduced as the latest augmented reality (AR) headset, intended for those working in construction, manufacturing, or medical fields.



2021 and beyond will see major trends in IoT, driven by artificial intelligence (AI), blockchain, 5G, edge computing, AI-enabled at the edge (edge AI) and digital twins.

If you want to know how your organization can become part of the IoT revolution and how you can take your business to the next level, reach out to our experts at IoT@compugen.com.