The Internet of Things

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According to Technopedia, the definition of the Internet of things (IoT) is:

“A computing concept that describes a future where everyday physical objects will be connected to the Internet and be able to identify themselves to other devices.” (Technopedia, 2015)

The phrase “Internet of Things” is commonly thought to have been originated by Kevin Ashton the cofounder of the Auto-ID Center, a research group studying RFID and similar emerging sensor technologies. The phrase was the title of a presentation Ashton gave at Procter & Gamble (P&G) in 1999, at this talk he described how the new idea of RFID technology could be used to link P&G’s supply chain to the internet to increase efficiency. (Ashton, 2009)

The concept of the Internet of Things has grown greatly in ambition since 1999 however, the applications outlined in the book “Enabling Things to Talk” highlights some of these ambitions. An example of an application outlined in this book is the concept of a “Smart City”, upgrading common city infrastructure such as traffic lights, signage, parking sensors etc. with IoT connectivity would allow a more responsive approach in areas such as traffic and public transport among many others.

This is just one of numerous potential use cases for the Internet of Things, others include Smart Homes, Factories, and Hospitals. In each of these instances, IoT capability allows for a much greater level of autonomy in systems and lessens the need for Human intervention which in turn alleviates stresses on these systems.

This technology is currently in its infancy, in 2009 the Internet of Things install base was made up of approximately 0.9 Billion units, estimates from the research company Gartner Inc. show a 30-fold increase to 26 Billion units in 2020 (Gartner, 2013). The CEO of Cisco Systems John Chambers, stated that his company estimates the Internet of Things will contribute as much as 19 Trillion US Dollars to the Global Economy over the next decade. These figures highlight that while currently the Internet of Things is not widely adopted, it is growing at an exponential rate, meaning that soon it will become ubiquitous.

The Internet of Things is already having a large impact of manufacturing, logistics and healthcare industries. According to a report by Lopez Research, 82% of manufacturers who have implemented IoT based “Smart Manufacturing” said that they experienced an increase in efficiency, 49% experienced fewer product defects and 45% experienced increased customer satisfaction. This same report cites the German Manufacturer Bosch as referring to the Internet of Things as the “fourth industrial revolution”. (Lopez Research, 2014)

While the impact to Industry has been quite profound, hasn’t become very obvious to the average consumer according to a 2014 survey of 2,000 consumers 87% hadn’t heard of the term “Internet of Things” despite studies forecasting mass adoption in the near future. The same survey showed that 64% of Customers did not purchase an IoT device because they were unaware smart devices were available for purchase. This lack of awareness and value perception is the largest barrier to mass-adoption of the technology.

This survey highlights that these are not the only barriers to the consumer adoption of the Internet of Things another large issue is concerns over privacy and information security. According to the survey 26% of Consumers expressed concerns over privacy.

Despite these barriers, there has been a steady increase in the adoption rate of both wearable devices such as Smart Watches and Fitness devices as well as in the Home with devices such as Smart Thermostats, Lights and Fridges. According to the same Accenture Survey two-thirds of those surveyed said they planned to purchase an in-home smart device in the next 5 years and 33% stated they would purchase a wearable device in the next five years.

Alongside the in-home smart devices and wearable devices, one of the main areas which has seen a noticeable and ongoing integration into the Internet of Things is the Motor Vehicle industry. According to an Article in the IEEE Internet of Things Journal the “percentage of Internet-integrated vehicle services will jump from 10% today to 90% by 2020” (Lu, et al., 2014).

This is just a brief overview of the Internet of Things and the opportunities it presents for both Industry and the Consumer. It presents a great opportunity to revolutionize the way we live our lives in the same way that the Internet has over the last decade.

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