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The Internet of Things: An Interconnected World

The internet. No matter how you view it, it's an invention that's revolutionised how we live our lives. It's come a long way since its conception in 1983 - but has it come too far?

It is estimated there will be 64 billion Internet of Things devices in the world by 2026 (Insider Intelligence, 2020, para.3), generating over 80 zettabytes of data (Framingham, 2019, para.1). This equates to an average of 11 connected devices per person - devices which make up a concept known as 'The Internet of Things'.

What is the idea behind the Internet of Things (IoT)?

"Anything that can be connected, will be connected" (Morgan, 2014, par.5). This allows for data to be transferred across every one of a person's devices. The IoT presents almost unlimited possibilities. For example, the central heating could have access to your calendar and track when you're going to be in the house allowing it to save you money. Indeed, all house appliances could be inter-connected in the same way. The GPS could signal the oven to start warming up, or the lights or television to turn on.

There are clear advantages to implementing the Internet of Things, such as easy access to personal data (RedAlkemi, 2018, par.3). If all devices are connected via the same global network, all data can be accessed in real-time from anywhere in the world. This allows us to go about our work despite not being physically present.

The Internet of Things has the ability to greatly reduce costs and improve communication. If everything is inter-connected, data packet transfer times could decrease, saving time and money. Everything can work more efficiently, resulting in better, faster results (RedAlkemi, 2018, par.5).

I fail to see any downsides to the world working more efficiently. The ability to produce everything faster and communicate data quicker could reinvent the way we process things and lead the way to designing new, more capable computer components and processing methods.

The biggest advantage that IoT has over the networks of today is the possibilities it presents for automation. While already well developed, IoT would allow for even more devices to talk to each other with even faster data transfer times. This could lead to more devices being automated and a decrease in human interaction (sitcam13, 2018, para.7). Less human interaction also reduces the chance of human error, therefore increasing the accuracy of processes.

As with everything, the Internet of Things has its disadvantages. For instance, the question raised over public security. In 2019, a hacker group managed to completely disable a power grid in western Ukraine, resulting in the first ever blackout from a cyber attack. It is believed that IoT had a role to play in the hackers gaining access to the power grid (Insider Intelligence, 2020, para.6). It is an area of concern therefore that The Internet of Things could be seen as paving the way for easier infiltration of other critical infrastructures.

It is feared IoT could also expose individual user's data to risk. More devices having access to user's private data may help with many aspects of life but it is argued this also leaves us more vulnerable. Fewer than 10,000 households can generate 150 million discrete data points every day (Federal Trade Commission, 2015, pg.14.para.3). The security and privacy of IoT is a heavy explored topic in media, especially the idea of data collection. An example of this is the game series; Watchdogs. In

Watchdogs 2, one of the main characters says "*you're data is now more valuable than you".* This quote underlines just how influencial data-collection and Big Data is when we have the ability to collect almost infinite amounts. Another example is the television series; Westworld. In Westword, the whole point of the themepark is too collect user too accurately recreate human desires.

Another side-effect of improved automation is job losses. It is estimated that 120,000 jobs in India alone will be affected by 2021, resulting in approximately 94,000 redundancies, according to Hardik Tiwari, engagement lead at Zinnov Consulting. Factoring in the creation of around 25,000 jobs, leaves an estimated total job loss of 69,000 (Fearn, 2016, para.2). Another potential issue is unsuccessful integration of the new technology. Many businesses may not be ready for it and, at least in the short term, find productivity obstructed by its complexity (Framingham, 2019, para.14).

By contrast however, the Internet of Things is set to have a hugely positive impact on society as a whole via the new opportunities it presents for Artificial Intelligence. If Machine Learning devices started accessing wide-spread networks, the vast amount of data could improve Predictive Analytics, allowing for more accurate predictions and faster knowledge growth. This could indirectly lead to fast-tracking future technological milestones, and in turn, even saving lives.

In my opinion, public perception plays a major role in the successful evolution of IoT – but there's a natural human tendency to focus more prominently on its drawbacks than its benefits.

To summarise, despite recognised disadvantages associated with the Internet of Things, the positives and possibilities - especially the premise of improving Machine Learning - far outweigh them.

The ability to automate the world can not only improve lives but in fact save them, as well as making the manufacturing process more efficient and free of human error. Overall, surely a worthy trade-off for us all.

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