THOUGHT LEADERSHIP

Are Organisations Truly Capitalising on the Opportunity of IoT?

The growth of the IoT market is impressive, with analysts predicting that the number of connected devices around the world is on track to grow to almost 31 billion by 2025. The increase in the number of connected assets has enabled organisations to amass a significant amount of data which, when used effectively, can add immense value to an organisation by enabling crucial insight in terms of business strategy and generating efficiencies. Additionally, the projected impact of AI and 5G on all sectors will help to unlock additional scale, security and interconnections between all parts of the IoT landscape, amplifying the positive impacts of the technology for all stakeholders. So how will these key elements influence and impact IoT as the technology continues to evolve at breakneck speed?

Big Data

When it comes to big data, there is a business opportunity to acquire, manage and sell IoT datasets, which provide key insights and potential influence over the lives of billions. Larger organisations such as Bosch and GE have already been amassing data on a vast scale, and with the deployment of new sensor networks, they are generating huge data sets. However, what is lacking is the structure around how to exploit this business opportunity – how to share and profit from it.

The only way that the market will grow, as anticipated, is in correlation with the further regulation of data in terms of how it can be accessed and the security standards, as well as consolidation within the industry over who actually holds the data. With clear regulations in place, any confusion around the business potential of big data can be overcome. One industry where this is already happening is insurance. With IoT, data can be collected and managed at an impressive rate and scaled to gain valuable information such as customer insights, real-time risk analysis and fraud detection. This accurate and efficient risk assessment can inspire the development of more flexible and bespoke products, sparking innovation throughout the insurance value chain. It is through tangible use cases such as these that will also encourage other industries to follow.

Artificial Intelligence (AI)

AI is already well embedded in our culture and is achieving great success in driving efficiencies through numerous industries. For example, in the medical world, AI is able to learn from data sets and make projections about cancer diagnosis by looking at scans, with the same accuracy as an industry expert but at a faster rate. This is a huge step forward for technology becoming more entrenched in the applications and processes of cities, corporations and our day to day lives. The accuracy and capabilities of AI are already high and this will only grow further as more decisions and reactions are automated by machines. Combined with IoT technology, AI can quickly determine insights and detect anomalies in data, offering fast and accurate predictions to improve operational efficiencies.

AI can also have a significantly positive impact when it comes to healthcare. With the population growing considerably each year, more people require services and combined with an ageing population, social care services are increasingly stretched. AI can operate as a system in the background to support these services, by checking heart rates and other metrics that could indicate a potential hospitalisation before it turns to a crisis, thus taking a proactive approach and reducing the load on reactive emergency care.

Another industry where AI will have a strong impact is in agriculture. Our planet is undergoing significant changes in terms of weather and climate challenges, but through the use of AI, our outlook could be vastly improved – we will be able to react faster and proactively intervene before issues occur. For example, there is a problem with drought in many locations and coupled with growing population numbers, food production on an aggressive scale is needed and without a solution in place this challenge could soon become a much more serious issue. Machine learning can determine how higher yields can be generated and which geographical areas shouldn't be used for planting, helping farmers get more from their land in a more sustainable way and taking the guesswork out of farming.

One area where AI will start to play a more dominant role is in security. The UK is one of the most CCTV intensive countries in the world but in reality, a computer can read video much faster than a human. Through machine learning, software can now be programmed to identify a particular person or vehicle, and also flag unusual activity based on predetermined factors, to highlight activity that might require further investigation. Therefore, a fundamental shift is anticipated whereby some of the more process-intensive activity can be actioned by AI, freeing up more meaningful tasks to be completed with human interaction.

5G

Although the 5G standards are yet to be finalised, it is expected that 5G will be 10 times faster than 4G at an estimated 10 Gbps, as well as having ultra-low latency. These potential speeds can barely be compared to the current 'super fast' fibre broadband available in the UK, which is up to 200 Mbps.

With commercial 5G roll out expected in 2020, we anticipate that pockets of campus-like 5G networks will spring up in terms of research facilities and localised networks, before there is a national one. 5G will be delivered by carriers installing 'small cells' that will allow a 5G infrastructure to be deployed. A number of carriers will use it for capacity augmentation and extending 4G capability, so 5G will not only provide higher bandwidth, it also allows for the network to be partitioned in several ways. For example, IoT over 5G will have its own dedicated pathway, as will voice.

With the promise of ultra-low latency, faster speeds and reliability, 5G will enable IoT innovation to be extended further to multiple use cases across numerous industries. In particular, low latency improves response times, so when it comes to manufacturing machinery or autonomous vehicles, it will ensure near-instant reactions to safety issues. However, to ensure the 5G IoT ecosystem functions effectively, cities and businesses will need to have a strategy in place to support 5G networking to ensure the full benefits of the technology can be realised.

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