In the news!

Bell Integration's Dave Leyland and Stuart Moulton talk to CEO.Digital

C-LEVEL FIRESIDE CHAT: TECHNOLOGY MEETS SALES

Dave Leyland, Solutions Director & Stuart Moulton, Account Director I Bell Integration

Dave Leyland's 30+ years' experience splans global companies and start-ups, having run his own Systems Integration and Consulting business for 11 years. He is a recognised "face" in the industry and his opinions are often sought on the business impact of technology.

With over 25 years' experience in the IT industry, Stuart Moulton has gained a true understanding of the challenges, business needs and expectations of both the Chief Security Officer and Chief Information Officer.

Bell Integration's work centres on the four cornerstones of IT delivery – TRANSACT, TRANSFORM, RUN and RECYCLE – and is at the forefront of helping companies drive down operating costs while providing effective solutions to business challenges.

The roots of IoT and blossoming today

Dave: The application of the concept of the Internet of Things is seemingly infinite and IoT can rightly be described as a solution looking for a problem.
The pervasive nature and evolution of technologies such as WiFi, 4G and now 5G with the huge advances in the latter around performance, promote its own evolution, if not revolution, in the possibilities presented by IoT.

High-end uses in society around CCTV, connected traffic lights and connected shipping pallets are as relevant, and for businesses important, as lower-end connectivity in sports, children's toys and Raspberry Pi-based or ARM-based processors in less expensive connected devices.

All present a huge business opportunity for the mindful entrepreneur in the application of IoT to any area of living in 2019 that benefits from global connectivity.

The need for scale in the IoT world

Stuart: IoT devices, through their potential numeracy in any application in the 100's of thousands and into multi millions, through devices connected to access covers into road sewers to sensors in fields for farming demand the ability to scale. Most IoT connectivity projects in their early stages have only a vague concept of the number of potential end points which may need to be connected and controlled for a full roll out.

This introduces a number of requirements for successful projects around scale, managed connectivity, in the support interface and as importantly, the data analytics and analysis of the log data coming from the sensors to turn that data into actionable and informative data patterns that can be understood and leveraged.

Indeed, a successful IoT programme is, potentially, very much the victim of its own success as further derivatives on the core idea are introduced and build on the original concept. Scalability is key.

The role of the cloud

Dave: This then plays very much to the nature of the cloud environments where flexibility, agility and scalability are the cornerstones of the cloud concept.

Cloud environments can be simply initialised in a proof of concept stage to disprove or prove a use case, when proved brought into production and gradually scaled up as needed in order to support the growing IoT estate requirements and potentially scaled back if, for example, the IoT programme is seasonal such as soil monitoring or as in a well published case, the monitoring of calving livestock.

The resilience of IoT and the importance of cyber security

Stuart: This area is potentially the biggest threat to the IoT delivering to its glorious full potential.

The very nature of the concept of IoT, the idea of connecting diverse and vastly different devices to the internet, exposes organisations to increased threat from cyber-attack. As well as expanding the attack surface exposed to cyber space many of these connected devices come with rudimentary cyber security defences, some legacy devices later adapted for connection to

the internet were never originally designed with internet connectivity in mind and so are especially susceptible to cyber-attack where cyber security is considered as an afterthought. This has proven to be especially the case with manufacturing equipment, CCTV and also recently children's electronic toys.

The latter here offers the prime example of IoT going bad with examples of the German government banning a range of connected dolls who could be accessed and used as listening devices as well as another brand that could be made to talk to the children playing with them, and most recently in late 2018 a range of children's smart watches which it was found could be used to track the location of the child wearing it, listen to them, and most disturbingly make spoof calls that appeared to be from their parents.

Dave: Other than cyber security the resilience of IOT devices and the impact of mass loss of connectivity or malfunction is largely governed by the data produced by the devices and the level of interactivity of the end devices.

Lower end devices merely sending log signals and data back to a device management interface may only impact with a loss of visibility to the end process that the connection is managing. Whereas higher end IoT devices that have some process control, extra functionality, product production or a process to complete could potentially malfunction to an extent where production errors occur, erroneous data is transmitted, and the result is potentially catastrophic such a in tsunami tracking or aircraft manufacturing.

Summary

Stuart: As with any technological development, there are many reasons to laud the coming of the Internet of Things for its incredible potential to improve crop yields, a key part of the next Industrial revolution, preserving the natural world and preventing natural disasters.

However, while having the potential to deliver all these things and a myriad more besides, some new ones conceived as we have been creating this piece, the application of the Internet of Things must be carefully considered and then architected by those who want to leverage its power, potential, and business benefits… as with its great power comes great responsibility.

Dave Leyland, Solutions Director & Stuart Moulton, Account Director | Bell Integration