

The internet of getting things done

Scott Nelson tells **Bethan Grylls** how the IoT has helped shape Digi's offering in a demanding and progressive market

"Data will change the world", says Scott Nelson, Vice President (VP) of Products at Digi International, "and we provide the connectivity between people and the 'things' they care about."

Whether its sensors, valves or components, Digi operates in a range of demanding environments, aiming to make critical infrastructures function through machine-to-machine (M2M) communications or the Internet of Things (IoT).

M2M as a term is not commonly used today, Nelson admits, but is a big part of Digi's history. It describes a wired or cellular operated device, with a point-to-point communication system normally embedded in the hardware, and is a service the company still offers. But since the rise of the Cloud, most of what Digi now does is through the IoT and it's this understanding of Cloud services that has helped the company to continue to evolve.

"The IoT has changed the way people think about global and local infrastructures, it permits scale and easy access," Nelson says, "and, in turn, what customers expect from their experiences."

Nelson suggests that it's understanding these customer expectations that has enabled Digi to thrive in such a challenging market.

"I'm a solid-state semiconductor physicist by training," he says, "for many years I was a customer of Digi. My experience was as a systems leader, engineer or designer, so I bring a systems, design and user-centric view."

"When I look at offerings I think how I, as a systems engineer, would view it; what I would expect from it; what else I would want integrated with it; and how I would integrate it."

As the Internet and data has evolved, so too has the way in which Digi thinks about it, according to Nelson.

"We've always been about data and understood moving data. But, in the past, it was very much about hardware devices. Now we look at it differently: it's all about transmission and transformation into information that can be acted on."

Traditionally, Digi simply sold hardware at the bottom of the stack, but today, Nelson says that's not enough - customers want to leverage the technology. "They want simplification and integration,"

he explains. "Most of our customers want to buy a datastream. They're not interested in buying all the components and building it themselves. They want a simple solution."

Using its IoT expertise, Digi has developed SmartSense, which has been designed for food monitoring, facilities monitoring, and supply chain visibility for the healthcare, pharmaceutical, transportation and logistics, and foodservice markets.

This is a full stack solution that provides organisations with the flexibility to select the best combination of Digi sensors and gateways, without interoperability issues – a key requirement of the market.

"Customers want to be able to connect various devices and have access to different sorts of data," he explains. "The problem is that all of the different components needed to create this type of solution aren't necessarily interoperable. So, we need to focus on this through integration, software and virtualisation of networks."

"This affects Digi's development process in three ways," he continues. "When we build module systems architecture, we need to provide flexibility, interoperability, and future proofing. This means when a new standard comes in, we have the ability to update a system to that value."

Digi is using integration to simplify the stack, integrating not just the technologies but also the eco-system itself.

"We're looking to offer customers with services that integrate multiple eco-system providers, whether it's the carrier or the Cloud," Nelson explains. "Digi is looking to provide those datastreams and help customers integrate those complex and diverse eco-systems to do that."

He expresses the importance of understanding the technology and application issues customers want solved. "Our go-to-market today isn't just 'speeds and feeds'," he contends. "We bring our customers value propositions that integrate complex parts of the stack and do that in a way that matches their business models."

He admits that customer expectations are becoming more challenging. "Meeting those expectations while managing the issues of inoperability is tricky. Reliability of cellular networks has improved, but customers expect 100% reliability all of the time."

"Going forward we want to help our customers leverage the IoT



Scott Nelson

Scott Nelson joined Digi in 2017 as Vice President of Product and is responsible for directing the company's vision, strategy and product roadmaps, together with R&D, sales and operations. Prior to Digi, Nelson worked as Chief Technical Officer (CTO) and Executive Vice President of Corporate Development at SkyWater Technology Foundry. He was also CEO and CTO of Reuleaux Technology, and spent 15 years with Logic PD, rising to CTO.

more efficiently and effectively, and to simplify the complex ecosystem and technology stack in a way that makes us more valuable to our customers.”

He points to the value of ‘partitioned compute’ – the ability to provide customers with flexibility to programme and implement additional functions at the Edge without affecting mission-critical functions – as a hugely important trend.

“All of our products today have two, clear development criteria,” Nelson says. “The first is security: we develop everything under TrustFence, so we have security data management and compute. The second is that we have partitioned compute in our products. We have python emulation so that customers can safety programme and configure and even add analytics at the Edge of the devices we build without worrying about impacting the reliability, connectivity and functions that we sell to them in our products.”

Nelson highlights the importance of security. “Security evolves every day, and we have to embrace best practice to maintain the security of those products. Our TrustFence formalism includes

secure connections, authenticated Boot, secure software updates, certificate management, and encrypted data storage, for example, as well as dedicated security processing and architecture to help customers manage not just the threats we know of, but the threats on-going.

“We have IoT stack integration abilities such that when new security threats arise, we can not only update all of the products, but do it in a way that doesn’t open new doors.”

With regards to the future, Nelson says it will be “software-defined” and there will be a need for intelligent and adaptable systems. He suggests that Digi will be looking to create products that can learn and understand user preferences to deliver the value that customers want much faster.

As the IoT evolves it will be interesting to see just how Digi will evolve with it.