John Deere started its transformation to a services platform in 2012

(Photo: Deere & Co)

# Entering the era of digital twins – transformation and IoT

Annie Turner looks at the extent to which IoT is enabling digital transformation and how IoT capabilities are disrupting traditional business, driving companies to become digital. Where are we now?

***"IoT acts as the eyes and ears of organisations and its value comes from how the data it collects is used to improve effectiveness across an organisation"***

The Internet of Things (IoT) and digital transformation are already largely inherent in each other, across the spectrum of industries and around the world. Increasingly, each drives and enables the other, yet the global adoption rate for IoT has slowed in the last two years, so what's going on?

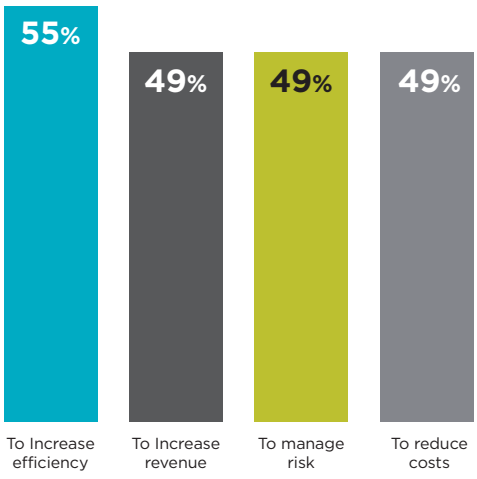
Paul Gudonis, the president, **Inmarsat Enterprise**, has said: "IoT acts as the eyes and ears of organisations and its value comes from how the data it collects is used to improve effectiveness across an organisation. As such, it is unsurprising that so many organisations are deploying IoT to propel their digital transformation initiatives."

He was commenting on research published in June 2017 by the Inmarsat Research Programme, based on a survey of 500 executives from agritech, energy production, transportation and mining companies around the world with more than 1,000 employees. It found enterprise IoT applications have become the leading technology for digital transformation and are also the top priority for 92% of the organisations surveyed.

Some 97% of respondents said their organisations enjoy or expect significant benefits from IoT-based solutions. Better service delivery capabilities took the top spot with 47%; closely followed by better health and safety across organisations with 46%; and greater productivity from the workforce at 45%. It's interesting how close together these three are in terms of importance and also there is no specific mention of new business models and revenue streams. Rather they are about doing what you already do more efficiently, cheaper, faster and with less risk.

This is borne out by the **Vodafone** IoT Barometer 2017/18 shown in the graph below. Its findings are drawn from interviews with 1,278 respondents from 13 countries across retail, manufacturing, energy and utilities, healthcare, transport and logistics, automotive, consumer electronics and the public sector.

**Why adopters are using IoT**




Source: Vodafone IoT Barometer 2017/18

The jet engine as-a-service is becoming a reality

(Photo: GE)

## Where's the buzz?

Efficiency is always good, but this feels a long way from the buzz about transforming established, product-orientated companies into data-driven, platform-based enterprises with a growing portion of revenue from services that span multiple industries.

There high profile examples of this in action. **GE** has had ambitious digital transformation in place ever since its former CEO, Jeff Immelt, realised other firms were amassing data from GE's products and gaining a better understanding of them than GE or its customers. His ambition rose from fear of disintermediation and disruption.

Now GE builds digital twins for its physical products, modelled on data extracted from them. The insight into their performance has allowed the company, for example, to move from simply selling jet engines to also selling customers time on the wing. This is the jet engine as a service – a radically different business model.

In 2016, GE Digital gained US$730m through better productivity including the Predix scalable software platform, which is used by the whole conglomerate. GE was scheduled to gain US$1bn in productivity in 2017 and by 2020 plans to be a top ten software house, delivering US$15bn in revenue.

As GE progresses, the new CEO, John Flannery, has stressed the company's commitment to digital transformation, but also to "a much more focused strategy".

Focus is exactly what **John Deere** is striving for, right down to the yield of individual plants in crops. The agriculture machinery maker started the transformation from product to a services platform in 2012. Its machines are becoming ever more sophisticated, measuring weather conditions, ground moisture, soil composition and more, taking information from sensors below and satellites above.

Yet that's only the part of the story, according to MIT Professor and platform expert Geoffrey Parker. He said at a workshop: "[John Deere] are collecting the best data on planet Earth: If you marry that data with the output, you can make the primary activity much more productive, but that's just the start. Seed producers like Monsanto will want access to it because then every farm becomes a test farm. Then you can add in cardinals...for those who would want access to the data – in commodity markets, it's going to be hard to make much money if you haven't got access to this when your competitors have. Now you have a must-buy data feed."

## Be precise

Maybe precision – figuring out exactly what you want to achieve through the combination of digital transformation and IoT – has, in part, caused the apparent global pause in IoT's adoption. The IoT Barometer 2017/18, found 29% of businesses around the world have adopted IoT, but the global adoption rate has only risen by 2% in the last two years.

It also found that most IoT adopters are reaping benefits and broadening their use of it, and that the greater the scale of deployment, the bigger the tangible benefits.

But what of the majority of companies that are yet to adopt IoT? Possibly the uncertainties created by the Brexit vote and election of president Trump caused some businesses in some parts of the world to take a wait-and-see approach.

Or perhaps it's because IoT and digital transformation are integral to each other and the scope of digital transformation just keeps expanding. Some 82% of Barometer interviewees agreed that IoT "is not a standalone technology, it's intrinsically linked to analytics, artificial intelligence (AI) and other critical digital initiatives." As AI on its own opens so many cans of worms, no wonder many companies are hesitating, even though inaction could well be disastrous.

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