MANUFACTURING IN A DIGITALISED FUTURE

BCX

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Digitalisation is changing our world. Everything about our world is changing; the ways in which we communicate, the way we shop, the way we work, the way we bank and pay for things, the way we get around... there's hardly aspect of our lives that hasn't been impacted by the age of Digitalisation – the manufacturing sector globally is inextricably a part of all of this.

"Worldwide manufacturers will spend an estimated $323 billion on external IT expenditures, according to IDC's Pivot Table: Worldwide Manufacturing IT Spending Guide, Version 2, 2013–2018.

All of this change means that IT is increasingly an integral part of manufacturing's success and we're on our way to a digital transformation." Industry Week - The State of Manufacturing Technology in 2016... and Beyond Jan 8th 2016.

Manufacturing is undoubtedly being transformed globally by the new age of digitalisation and the emergence of a demanding new generation of end user/consumer: Millennials (born 1980–2000) and Generation Y (born 2000 onwards).

Before we look at the tech that's driving digitalisation, let's look at this new generation of end user/consumer. BCX recently conducted qualitative research amongst Millennials and Generation Y. As South Africa's leading tech company, BCX wanted to use the results of this research to highlight and demonstrate to its customers the impact these new consumers are having on the way business is done and what is expected in the future. They're the fast changing face of the future and they're embracing and welcoming the new age of Digitalisation. An executive summary of this research can be found on... (link to be provided).

Millennials and Generation Y

So, let's have a look at this generation a little more carefully.

All generations have characteristics that define them as different to all preceding generations. The catch here is that the differences that identify these two generations are marked and game changing; think Mark Zuckerberg (Facebook), Kevin Systrom and Mike Krieger (Instagram), David Karp Tumblr – all under 35 years old.

This generation was born into a world of technology. They interact with the world in a completely different way to their parents or grandparents. They are the 'digital first' generation and have grown up with computers, email, mobile phones, and the internet, as an integral and accepted part of their everyday life. Following on from their footsteps is generation Y (born 2000 onwards). They share many of the tech-focused characteristics of millennials, but they're much more pronounced. While millennials may still remember the early stages of the internet and cellphones, Gen Z will not remember a time before the iPhone or Facebook. Some defining characteristics of these two generations:

- **They are always-on** - connected in some way with some device and at ease with tech.

- **They are multi-channel** - they can split their attention between their phones, TV, games, computers and importantly from a retail perspective, enjoy multi-channel shopping.

- **They are knowledge driven** - they have knowledge at their fingertips and they use it.

- **They are socially and environmentally conscious** - they care about the world and what's on it.

- **They live in a virtual world, an augmented world where everything is possible** - boundaries no longer are.

Key Trends in the Manufacturing Sector

So, that's the new consumer, what about the advances that are driving the tech world and manufacturing specifically? We researched the latest tech trends and predictions from various manufacturing and tech publications and identified the following key tech drivers in manufacturing:

- **customer centricity:** This is about manufacturing becoming more closely aligned to customer's needs (in real-time where possible) through improved and more direct communication channels.

- **IoT:** IoT (Internet of Things) will play an increasingly significant role in manufacturing and it's predicted that by 2019, 75% of manufacturing value chains will undergo an operating model transformation with digitally connected processes that improve responsiveness and **productivity by 15%.**

- **3-D printing, robotics and cognitive computing:** These three technologies will begin to redefine modern manufacturing and supply chain logistics. It's estimated that by 2019, 50% of global manufacturers will have modernised their manufacturing and logistics networks.

- **the digital twin:** By 2017, 40% of large manufacturers will use virtual simulation to model their products, manufacturing processes, and service delivery to optimise product and service innovation.

- **cloud, mobile, and big data and analytics:** Smart Manufacturing. It's predicted that by the end of 2017, 50% of manufacturers will exploit the synergy of cloud, mobility, and advanced analytics to facilitate innovative, integrated ways of working on the shop floor; and

- **IT Transformation for digitally executed manufacturing:** In 2016, 20% of manufacturers will begin to break down organisational silos, reshape IT portfolios, and import new IT talent in the plant for digitally executed manufacturing."

Sources: Industry Week - The State of Manufacturing Technology in 2016... and Beyond Jan 8th 2016/Business.com What Are the Technology Trends That Will Change the Business Landscape in 2016? Dec 4 2015/Cerasis.com Manufacturing and Technology trends 2106, Jan 11 2016.

How are Manufacturers Applying this New Tech?

Manufacturers are using data analytics to optimise factory operations, boosting equipment utilisation and product quality while reducing energy consumption. Smart, connected products are sending customer experience data to product managers to help them anticipate demand and maintenance needs and design better products.

Manufacturers are also using their deeper understanding of end-to-end processes to develop continuous manufacturing suites with footprints less than half the size of conventional factories. Some have even developed portable factories that can be built in 40-foot trailers. They are also using the digital thread to improve quality control through data supplied continuously supplied from different points in the manufacturing process. This is where big data processing and analytics becomes critical.

Leading consumer-packaged-goods companies are using digital tools to improve distribution and build bonds with consumers by using digital tools to respond even faster to consumer preferences and reduce

supply-chain costs. Reusable radio-frequency identification (RFID) tags on every item of clothing in-store means that stock up-dates (and therefore re-ordering requirements) can be performed more frequently by fewer staff in a vastly reduced amount of time.

Source: McKinsey & Company Aug 2015

What's Required to Embrace Digitisation and make it work?

The tech required to make these advances happen are many and varied: big data, cloud computing, mobility, M2M and IoT, robotics, seamless connectivity, unified communications and collaboration and more. The connectivity, integration, application and management of all these divergent technologies is a real challenge for manufacturing and all business going forward. It's all new territory and ground breaking, but the potential benefits in cost saving and meeting end consumer needs and wants make it key to a manufacturing business's future growth.

How does manufacturing, more specifically the incumbent CIO go about achieving this kind of Digitalisation integration without having to deal with multiple vendors and the inherent problems of integration and communication that come with it? It's a very real challenge.

About BCX

BCX is one of Africa's leading premier ICT solutions and service provider with the technology, capability and skills to deliver end-to-end digital solutions for large and medium enterprises in the public and private sectors. BCX leads with an unrivalled ICT solutions embedded on the foundation of unmatched Data Centre and Network Infrastructure and include world class solutions in ICT consulting and digital readiness assessments; a complete range of managed solutions that include both LAN and WAN; unified communications and connectivity solutions. In addition, cloud computing technologies underpinned by best in class security solutions and a host of value added services that include enterprise mobility services and analytics software with a specialised competency in the IOT (Internet of Things) and big data solutions.

BCX is a leader in Service excellence and boasts the largest pool of ICT skills in Africa, unparalleled geographic reach and points of network presence across the continent. Our strategic vendor relationships with leading multinationals enable BCX to deliver best in class solutions across industry verticals with skills and expertise seamlessly deliver integrated services to our customers. BCX is committed to providing ICT solutions that reduce the cost of doing business, increase overall business productivity and empower businesses to use technology as a competitive advantage.

Migrate your business into the digital future – contact thoughtleader@bcx.co.za