Converging at the Edge

Why we should be happy to embrace edge computing so soon after we got used to the cloud, IoT, Industry 4.0 etc…?

The benefits of taking the large amount of repetitive data created by machines and automated systems and processing it locally are huge. Edge computing takes the pressure off existing networks, data storage, potentially costly cloud services and software applications. Data is turned into useful information closer to its point of origin and more importantly, in real time.

Chris Evans, Marketing & Operations Group Manager for Mitsubishi Electric makes the case for a quick adoption of edge computing.

Edge computing means that factory floor technology can be used to provide streamlined information that can then become operational intelligence once it is interpreted and displayed by crossover applications sitting in the "Edge" layer. The Edge layer provides data analytics, artificial intelligence (AI) and is the gateway to the higher IT level applications and cloud services that can truly deliver Smart Manufacturing and embrace the principles of the Industrial Internet of Things (IIoT).

But rewind….

How did we get here that quickly and isn't it a huge jump to take on "Edge" when other aspects of your enterprise are probably still lagging behind?

Essentially no, it isn't such a big step, existing products such as Mitsubishi Electric's C-Controller module for its iQ-R Series PLC platform already provide Edge computing functionality. With products that offer database connectivity and data management combined with standardised connectivity such as OPC UA, offering reliable and secure data communications between the manufacturing-level and IT-level systems, Edge is very much here already.

It is true that the pace of development has accelerated somewhat: first we had automation systems based on logic driven PLCs, then over the course of some decades the PLCs became more intelligent and we started getting data from them into HMIs and SCADA platforms. After that we quickly realised this data could be used in other parts of the organisation, so we started pushing the data to enterprise databases.

Then more recently PLCs got even smarter and started being able to directly push the data straight to enterprise databases, or the cloud. The data volumes became larger, every sensor and inverter started to pile zeros and ones into the PLC which had to put it somewhere - just as the likes of Microsoft, Amazon, IBM and Oracle brought vast, scalable cloud storage and processing resources online.

All this happened at breakneck pace (at least in manufacturing terms) until one day we were left to consider why the heck we were sending all this data to the cloud? Especially when a lot of it is the same or irrelevant and invokes high data processing costs at the cloud level, plus what about security etc.?

Now it makes sense

It's at this point that edge computing starts to make a lot of sense and it's clear why so many businesses are busy organising meetings between production management teams and IT departments. Deciding to aggregate and analyse raw production data closer to the source and only send the relevant information to the higher levels is where edge computing fits in. There are a lot of system improvements and efficiencies to be gained from a modest investment.

For automation professionals who have seen the developments described above unfold, it is very similar to when we first started connecting SCADA to processes but with a more analytical spin on things. This latest development enables us to make important process feedback decisions at - or close to - the source and feedback that information to the process to adjust its performance.

What makes edge computing most valuable to an organization though is the operational and logistical efficiencies that can be achieved through real-time analysis. Making it happen will become a whole lot easier thanks to emerging products and open technologies which will bring with them further benefits.

Open benefits

Help as they say is at hand, from Mitsubishi Electric and its integration partners.

In addition to its global network of automation system integration partners, Mitsubishi Electric is also a member of the EDGECROSS consortium. The group includes major suppliers of IT and factory automation infrastructure including NEC, Oracle, IBM and others. It is responsible for creating an open edge-computing software platform that will provide a universal interface between industrial networks and edge computing functions such as real-time data processing, data model management, security and various application development tools.

Watch this space then, convergence is coming, and it could bring a range of benefits.

Image Captions:

Image 1: Edge computing means that factory floor technology can be used to provide streamlined information that can then become operational intelligence once it is interpreted and displayed by crossover applications sitting in the "Edge" layer.
[Source: Mitsubishi Electric Europe B.V.]

Image 2: Edge computing enables us to make important process feedback decisions at - or close to - the source and feedback that information to the process to adjust its performance.
[Source: Mitsubishi Electric Europe B.V.]

Image 3: Chris Evans, Marketing & Operations Group Manager for Mitsubishi Electric makes the case for a quick adoption of edge computing.
[Source: Mitsubishi Electric Europe B.V.]

Note to Editor: if you would like the text in another language please contact Carolin Heel at DMA Europa – carolin@dmaeuropa.com.

About Mitsubishi Electric

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of approximately 40.7 billion dollars* in the fiscal year that ended on March 31, 2019.

Mitsubishi Electric Europe, Industrial Automation – UK Branch is located in Hatfield, United Kingdom. It is a part of the European Factory Automation Business Group based in Ratingen, Germany which in turn is part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout the United Kingdom.

**At an exchange rate of 111 Yen = 1 US Dollars, last updated 31.03.2019 (Source: Tokyo Foreign Exchange Market)*

Further Information:
Website: gb3a.mitsubishielectric.com

Email: automation@meuk.mee.com

Facebook: www.facebook.com/MEUKAutomation

Twitter: twitter.com/MEUKAutomation

YouTube: www.youtube.com/user/MitsubishiFAEU

LinkedIn: www.linkedin.com Mitsubishi Electric - Automation Systems UK

Editor Contact

DMA Europa Ltd. : Carolin Heel

Tel: +44 (0)1562 751436
Web: www.dmaeuropa.com
Email: carolin@dmaeuropa.com

Company Contact

Mitsubishi Electric Europe B.V. Automation Systems Division : Garry Lewis, Manager - Marketing & Communications

Tel: +44 (0) 1707 288769
Fax: +44 (0) 1707 278695
Web: gb3a.mitsubishielectric.com
Email: automation@meuk.mee.com