



Pre-packaged smarts:

How to get your factory Industry 4.0 ready with a simple, modular solution





INTRODUCTION

Dave Delany likens the process of digitalising a factory or plant to that of a kitchen pantry. The pantry may be filled with ingredients, but without a recipe or cooking experience, how do you go about prepping a meal? Where do you start?

According to the Managing Director of ifm Australia, you don't need to have the equivalent of a chef's expertise in IT to get your business Industry 4.0 ready. Because ifm have created a simple platform that bridges the gap between Information Technology (IT) and Operational Technology (OT), allowing businesses to start collecting and utilising qualified data from their machines.

This white paper discusses how ifm – a world-renowned sensor manufacturer – has evolved into a solutions provider that has simplified the way a business can protect their most important assets. It sets out why digitalisation is so important, and explains how a factory can start small, and scale fast with a ready-to-go ifm smart software package.



DIGITALISE OR GO THE WAY OF THE DINOSAUR

It doesn't matter whether an individual factory or plant is ready to enter the fourth industrial era – or Industry 4.0 – because it's already begun. Every industry, every business operation, needs to be on a digitalisation path, or they'll go extinct.

“Digital technology has already transformed the way we conduct business. Our world has been redefined by the internet, and in the future, all business processes will be digitised,” says Dave Delany. “Businesses who don't start adopting these digital technologies and utilising the data that comes from them, run the risk of soon becoming obsolete.”

As Dave infers, data is a fundamental product of digital transformation. This is because data represents opportunity. It affects positive change through informed decision-making. Significantly, giving key personnel access to the right data can prevent critical machinery failures and prolong machine life. It also gives businesses visibility on how their assets are performing, and the capability to weed out inefficiencies and improve processes.

The rub, of course, is how does a business separate the useful information from the chaff? This is where ifm aims to help.

PLEASE EXPLAIN

Remind me, what do the terms Industry 4.0 and IoT mean? Industry 4.0 and the Internet of Things (IoT) may come across as complex and overwhelming concepts. But they don't need to be. Essentially, they boil down to connectivity and information. And digital transformation is how a business goes about achieving that connectivity and harnessing that information.

In a nutshell, Industry 4.0 is the fourth industrial revolution, which expands on computing technology and the internet, technologies that were introduced in the third industrial revolution. Industry 4.0 is characterised by the merging of the physical and digital worlds, where computers are connected and communicate to make decisions without human involvement.

Meanwhile, the IoT refers to smart devices that communicate information. IIoT puts this in an industrial context – it simply stands for the Industrial Internet of Things.

IoT has made the fourth industrial revolution possible, and the smart factory a reality.



FROM SENSORS TO SOLUTIONS

As far as digital transformation is concerned, ifm is no stranger to the process.

“The Internet of Things and Industry 4.0 was a real catalyst for ifm to transform its own business from that of an exclusive hardware manufacturer to that of a software solutions provider,” explains Dave. “We could see a future that lies in the cloud and where standards and businesses are digitised. And to help realise that world, not only would sensors need to be smarter, but there would need to be a common platform.”

This meant the company began developing software to complement its hardware products. Their objective, however, was to design solutions that would be practical and simple for customers to implement, without incurring a huge expense.

“Things like connecting devices, establishing a connection to the cloud, installing software, and getting that information out of the sensors and into a usable format, all of those things at the moment can be very expensive

and require lots of expertise,” Dave points out. “And many customers don’t want that. The expense and complexity of it have put people off their digital transformations.”

Which is why ifm has developed the moneo universal software platform. This consists of software packages that make it easy to start collecting critical data from machines. It connects to automation hardware that aggregates the data on a central platform.

Dave circles back to his kitchen pantry analogy to explain. If you’re not a chef or have a recipe to follow, how do you make a decent meal? What ingredients will work together? He likens this to a factory wanting to smarten up.

“When you’re trying to digitalise a factory there’s a plethora of hardware and a lot of expertise required for all that to talk to each other, as well as the many implications if you get it wrong,” he says. “Whereas our goal at ifm is to take away that potential frustration and complexity by providing you with a ready-meal.”

GET SMART WITH MONEO

What is it? Freddie Coertze, National IoT Business Manager for ifm Australia, explains in points:

- A standardised, practical solution that enables the digitalisation of a company’s processes
- An IIoT platform that combines the level of operation technology with the level of information technology – it “bridges the gap” between the two
- Moneo has a modular structure that comprises basic software and applications that can be tailored and built upon to suit individual requirements, “allowing you to grow organically”
- A “first responder” platform: Sensor data generated in the production plant can be read and processed easily, and the platform will manage alarms around critical data
- The chief outcome: Turns qualified equipment data into “actionable insights”



START SMALL, GROW AS YOU KNOW

“Hindsight can be a wonderful thing,” Dave states. “But it doesn’t help if you’ve already spent a huge amount of money digitalising your factory, then realise afterwards you should have done it differently.”

The beauty of ifm’s moneo solution is that a business can start small and scale fast.

“You can start with a proof of concept that enables you to understand what’s going on, then you can build on that and adjust it based on the information you receive,” Dave expounds. “Because what you thought was important, may be vastly different from what the information is telling you in reality.”

Moreover, moneo can be used for a proof of concept on a critical asset without interfering with a plant’s existing IT infrastructure. This is another one of ifm’s core strengths, and one that differentiates the moneo solution from other platforms on the market.

“We’ve created a hardware separation between the connection to your IT system and the connection to your process, so you cannot be hacked,” Dave enthuses. “Essentially, moneo can be set up to monitor a critical asset without affecting any of your business processes or production and you have that added security of knowing you will not be exposed to any viruses or external attacks.”

Notably, moneo is easy to install and use. This cannot be overstated, says Dave.

“You do not need a raft of expertise to get started with moneo, it’s simple and cost effective,” he stresses. “You can set it up without any risk to test the waters. Importantly, you don’t need to be a software guru to make sense of the data, it’s all predefined for you.”

Freddie Coertze – who is also ifm Australia’s IIoT Digital

Strategy Leader –elaborates on the importance of being able to grow “as you know” and how moneo’s modular design allows for this flexibility.

“It’s a great way to get started because it can grow with your system, and you have the flexibility to change the direction you want to go,” says Freddie. “You can let the data drive how you want to move forward.”

A business can “build their own cockpit” with the universal moneo platform, by simply dragging and dropping the information points they want to see on a personalised dashboard.

“It’s universal, so basically we provide the entry level equipment, such as the platform and sensors – and from there you can connect to any other device or PLC,” Freddie expands. “Once connected, you can activate software for various applications, so in a manner of phrase it’s ‘simply made for you’”.

However, ifm have also created a moneo ‘starter kit’ to keep it incredibly simple for a factory that’s just starting out on the digitalisation journey.

“The starter kit is essentially a ready-to-go package – we provide an industrial PC with software already on it, and all a business needs to do it is plug it in, switch it on, plug in the sensors and start monitoring,” Freddie explains. “It’s seamless and easy.”

Additionally, Freddie points out that moneo is a “future proof” solution.

“We’ve adopted an agile method with the moneo software so that it’s updated every 3 months, and in direct response to features that customers are requesting,” he points out. “Because of this constant evolution, it will never get left behind.”



NICE ONE, BREW: BEER PLANT BENEFITS FROM MONEO

Freddie says one of the first customers to trial moneo in Australia was a large brewery. They initially installed it to monitor a bottle filling line, and soon saw the potential of using it as a universal platform across their entire operation.

“First of all, the client was very surprised at how easy it was to install. He started monitoring the filler line – where the bottles of beer are filled – because he wanted to keep an eye on one of the critical bearings on this filler line. This bearing comes in from Italy, so it’s difficult to replace,” Freddie explains. “So, he put the PC on and started monitoring, and could see from that first experience that

not only was this effective for protecting the bearing, but it could be a universal platform for the company.”

As the brewery uses equipment from all over the world, the machines traditionally haven’t been able to connect or talk to each other – but moneo streamlines that connectivity and data collection.

“The customer sees moneo as the ‘gel’ that can bring the factory together – it not only facilitates communication between the machines, but works as a central collection point,” Freddie summarises. “He’s now going to adopt this across the whole plant.”



PROTECT WHAT'S IMPORTANT TO YOU

The big industrial wheel may be in its fourth revolution, but when it comes to digitalisation, every business journey is unique.

For this reason, ifm Australia's National Product and Brand Manager, Glenn Thornton, recommends a business focuses on monitoring the assets and processes that are most critical to their operation.

"Which is what moneo provides – it's an opportunity to be connected 24/7 to the key aspects of your operation," he explains. "This solution provides an operational guarantee with full visibility across plant and process conditions."

As a result of this visibility, Glenn says the benefits from adopting this solution will be swift.

"There are many points where waste is commonplace and often just accepted. For example, production items

might be thrown away due to unattended manufacturing issues, or taps may be running unnecessarily and wasting water," he points out. "There are countless examples of where this technology can save on costs through process improvement and justify its initial investment."

Essentially, it comes back to starting small, monitoring what's important and scaling organically and in line with what the data reveals.

"Monitor what's important to you, which then protects what's important to you," Glenn concludes. "Be ahead of the issues, whether it's downtime, lost production, quality issues, maintenance problems or production deadlines. And remember, we're here to help – lean on us, we have the knowledge and expertise to make your digital transition a smooth one."



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