The Internet of Things: Real Benefits for Real Businesses

How Avnet Embedded and IoT drive companies' performance across the globe

Technology Partnership

At a glance

The customer challenge – Gather and analyse accurate daily performance data from a global network of businesses, including ten sites in France, each with disparate calculation and reporting methodologies.

Report on the data transparently to improve production, new product testing, time-to-market, financial consolidation, internal communications – and overall profitability.

The solution - Avnet Embedded unified the customers' many data sources, processes and rules, across multiple sites, into a single, web-based console, using bespoke drivers to transform simple data capture into IoT-enabled business reporting. Avnet Embedded also supplies ongoing maintenance for the solution.

The result - Users across the businesses, which have almost 65,000 employees in total, have gained immediate visibility and reporting of core processes, 24/7/365, wherever they can connect desktop or laptop to their network, over the internet.

This has dramatically reduced the time, effort and costs involved in managing those processes, in identifying and remedying issues, and in bringing new processes on board to accommodate product development and testing.

Relevant to – IoT project teams, business process managers, process and maintenance engineers, financial reporting and forecasting functions, continuous improvement initiatives, product testing and development teams.

The technology - Microsoft SQL Server, Business Objects, bespoke drivers developed by Avnet Embedded.

The challenge

The challenge presented itself on two fronts: ten sites in France, and an extensive operations network across the globe. Despite combined group revenues of over €13 billion per annum, these experienced divisions had no way to centralise the extensive data captured from hundreds of business processes on each site into one single resource, accessible to all users. Such a resource would in any case face significant obstacles, since each site tended to calculate the performance of their business processes in very different ways, making meaningful, business-wide data comparison and reporting extremely difficult. This lack of process insight had definite economic consequences for the businesses. For example, processes such as financial reporting, which were essential but delivered no immediate productivity, were absorbing disproportionate amounts of resource and effort.

Process performance was poorer on some sites, for certain products, than others – but because the equipment performance data was difficult to access and comparatively analyse, it was almost impossible to identify the cause and remedy the issue.

Cost management was suffering, too, as analysis of raw material use and energy consumption could not be standardised across all the businesses. Perhaps most urgently, from the point of view of the businesses' current and future growth, the lack of a single source of information meant that new processes for the development and testing of new products could not be initiated and managed easily. Instead, the businesses relied on multiple spreadsheets, creating a highly manual, time-consuming, costly procedure that slowed down new products' time-to-market and delayed their move into productivity.

The solution

With each site having hundreds of data capture devices and processes already in place, generating data was not the problem. Organising and making sense of many different versions of it, from many different sources, in an environment that everybody could access and use, was.

However, that environment in fact already existed - the internet. If it could be combined with the data feeds and the tools that would standardise and analyse the data, and the networks that transported it, a true IoT solution, delivering real economic benefit, was in sight. This is exactly what the Avnet Embedded team, headed up by Technical Manager Nicolas Sébille, delivered.

By developing bespoke programming scripts, they created "collectors" that took data from each business's data capture systems and organised it in a Microsoft SQL Server database, which was securely accessible from the network. Using an API, the team then integrated the network data feeds into a web-based Business Objects application. This enabled them to architect a final solution that would bring standardising logic,

analysis and reporting to the data, and make it accessible by any authorised user, from any PC with an internet connection, on-site or off. The solution can also be used with embedded versions of Microsoft Server OS and SQL Server, which feature longer guaranteed market and technical support availability than non-embedded versions, ensuring long-term viability.

The results

The solution has delivered measurable commercial benefit to the businesses, as Sébille notes. "Before," he says, "the process of consolidating end-of-month performance reports and financials for Head Office typically took a week. Now it takes one day, and it has become far quicker and easier to produce accurate business forecasts, too."

As both data and reporting can now be accessed and shared by any authorised user, internal communication has also greatly improved, with fewer information "silos" being created, and far less costly duplication of effort. But where the business benefit has perhaps been felt most is in testing, development and production. Sébille talks of the "enormous gain in time" in getting new products to market that the solution's transparency and richness of data has fuelled. For some of the businesses, he says, it has meant that they have "opened up international markets where they previously could not have competed." But in businesses that operate day and night, seven days a week, solutions are useless unless they are dependable. On this front, too, the Avnet Embedded team have delivered – Sébille reports that the customers are "very happy" with the "high reliability levels". From the point of view of many industry commentators, this solution is delivering squarely on the IoT predictions that the market has previously made. As IOTS World Congress News has commented, for example, many businesses have been "collecting streams of continuous data for years. Post the implementation of IoT, they will be able to analyse it to improve their business. In short, IoT will provide greater visibility into operations and … performance."

The Key benefits

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- **More productivity, at less expense** – The time spent accessing and managing data has decreased, enabling workers to focus on core tasks. Barriers to productivity (such as product faults and equipment failure) can be quickly seen, understood and remedied, before they impact business performance.
- **Better financial visibility** –ROI is a meaningless concept if business performance can't be measured accurately. The solution enables the data to tell the most crucial story – where is my business making and losing money, and what will that look like in the near future?
- **Tighter cost control** – Energy, raw materials, consumables; the solution helps prevent these costs from undermining the profitability of the end product
- **Reduced time-to-market, quicker profitability** – Developing, testing and launching new products is quicker and easier when all the data associated with them is available and reportable from one place.
- **Tailored development and deployment** – Avnet Embedded developed bespoke programming and integration to deliver a solution that met the businesses' exact requirements
- **Maintenance, reliability, uptime** – Critical reliability is not only engineered into the solution, it is supported by Avnet Embedded's on-site maintenance and SLAs

In short, the Internet of Things is no longer a technical aspiration. With the right partner, it's the foundation for real tools by which real organisations that amass and process real data can manage their processes more effectively and more profitably.

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