Connected Machinery: The Secret to Successful Digital Transformation in Manufacturing

The manufacturing industry is undergoing one of the biggest transformations in modern history. Coined the Fourth Industrial Revolution, digitalization and connected devices are producing data at unprecedented speeds, while evolving technologies like artificial intelligence (AI) and machine learning (ML) are making it possible for organizations to capitalize on the data collected.

Manufacturing is often not the industry we think of when we talk about early adopters in digital transformation, but the opportunity for legacy organizations to undergo a quick pivot is currently unmatched. The global Manufacturing industry is growing year over year as more organizations embrace the new role that technology can play in operations. In a recent report, a whopping **77 percent of manufacturers** surveyed stated that their increased investment in digital transformation was significant.

In addition, industries everywhere are seeing a shift in customer experience demands, and Manufacturing is no exception. From increases in production speed by minimizing downtime and lost productivity due to machine maintenance, to more customization options, organizations are seeing it all.

Moving forward, successful digital transformation is about **integrating myriad systems** that power the entire enterprise, from connected machines to the entire value chain. That means businesses don't just need to monitor how machines are working, they need to use those numbers as a frame to understand larger systemic challenges like inventory issues, production process optimization, decision-making, supply issues, and other activities in the full manufacturing ecosystem.

The ability to collect and analyze data in real time will be the key differentiator in meeting and exceeding expectations in the era of Industry 4.0. Manufacturers who understand the importance of real-time data and understand how to use technology to most effectively leverage data, will have a decided competitive advantage. The laggards on this front might well find themselves disrupted out of business.

That's why now is the perfect time to identify the challenges your manufacturing organization faces when it comes to digital transformation and develop a strategy to mitigate these challenges. This includes identifying the technology and strategic partnerships that can enable digital transformation at a time when it can make or break your future.

The following is a look at common industry challenges, an exploration of some technology solutions that can help address these challenges, and the positive outcomes organizations are likely to see as a result.

Challenges in Manufacturing Management

Although most manufacturers recognize the need to initiate smart factory capabilities at their facilities, doing so is not always easy. To better understand what Manufacturing leaders in enterprise organizations across a number of industries are experiencing, we must first understand the challenges they face. These include the following:

Disparate systems. Many organizations lack visibility into meaningful data because they work with so many different machines throughout the factory floor. The equipment is often made up of different models, different ages, or even a collection of different brands altogether. This makes it incredibly challenging to use cumulative data from each machine in ways that bring value to the organization as a whole.

Spotty data. Poor visibility makes it difficult to produce comparable and scalable data. Without full transparency, the data is incomplete and therefore unreliable. This is true whether the data is being gathered to predict a maintenance schedule or determine whether a new product line would make sense in one's current location. Long story short, incomplete data makes it impossible to use data for concrete decision-making. And that makes the data that is collected almost useless.

Legacy systems. As noted above, most organizations use several different machines, some old, some new, on their factory floor. That means some machines are going to be more easily digitized than others, again leading to spotty data or data gaps. Unfortunately, the answer isn't simply upgrading all machines. Some machines, as old as they are, are essential to certain businesses. There needs to be a way to work within the machine's natural confines to get the company the data it needs.

Different data languages. With so many different machines at different digitization levels, there will also be challenges unifying varying data languages, which again makes it challenging to find valuable insights. Comparing apples and oranges doesn't work, nor does trying to find insights from a collective of varying data language sets.

FORCAM FORCE EDGE Connecting Machines Across the Factory Floor

When it comes to effective Manufacturing management, data plays a big role but figuring out how to connect this data effectively in a scalable way is a tricky proposition.

That's what led us to evaluate **FORCAM FORCE EDGE**. Integrated with SAP's industry cloud solutions, such as SAP Digital Manufacturing Cloud, Force Edge allows organizations to digitize nearly any machine, regardless of

whether it is native to cloud, digitization, or network operation. Here are a few of the things we really like about Force Edge:

Digitize all machines. The main benefit is fast, easy connections of machines regardless of age or interface – even machines that were never meant to be digitized. Signals are standardized, recorded, and stored on the edge for quick and easy processing across all systems.

Uniform data layer. No more dealing with various data languages. FORCAM FORCE EDGE translates all machine signals and data into a universal language that enables organizations to run standardized queries. This also allows organizations to leverage the power of AI and other applications that can mine the data for insights in real-time.

Make decisions efficiently. With all of the data in one place, using the same language, organizations can be certain they are making smart decisions that will positively impact business on the factory floor and elsewhere.

Cost reduction from set up to management. Organizations that use FORCAM FORCE EDGE experience significant cost reductions at every stage. Force Edge uses templates, allowing organizations to easily connect machines within a couple hours' time. This limits the time it takes to configure machines and enables rapid digitization across the factory floor. Once machines are connected, organizations can capitalize on data that will help limit costs in categories like energy consumption and maintenance.

New way of working. Digitizing all machines introduces a new way of working for employees. With the ability to leverage emerging and innovative technologies like the cloud, AI and machine learning, productivity levels can potentially soar.

CUSTOMER SUCCESS STORY

As we evaluated FORCAM FORCE EDGE, we looked, as always, for client success stories that could support the value proposition of the offering. Here are a few takeaways that convinced us:

BorgWarner, an international automotive supplier, was looking to improve its sustainability management at its Markdorf, Germany plant. Their overall goals were to simplify management to improve productivity and reduce carbon emissions to improve sustainability. The data collected via the FORCAM FORCE EDGE solution helped the company balance the three targets, sustainability, productivity, and customer satisfaction, in an environmentally friendly way.

Thanks to the detailed and comprehensive Energy & Sustainability Management plan as part of their global vision and mission, BorgWarner was awarded the prestigious ISO 50001 certificate acknowledging the organization's commitment to continual improvement in energy management. As one of many examples of the difference made, Martin Strehl, Lean Management Coordinator, Borg-Warner shared: "The FORCAM energy monitoring supports our energy management system sustainably. Every energetic measure on the shopfloor is permanently monitored and checked for cost savings. Hence, we have our energy consumption under control in the long term and we can call the data real-time at any point in time."

Why FORCAM FORCE EDGE?

Manufacturing is getting increasingly complex, as products are no longer built in a straight line. For companies to operate as efficiently and profitably as possible, they need to work with the input of both vertical and horizontal market data. And the most basic foundation for moving toward a truly smart factory is to connect one's machines.

It's understandable that every company is working with a vast array of different machines, some of which may change over time and others that may be old but remain staples to each industry. Either way, there needs to be a way to connect the data from each to support each company's efforts toward digital transformation. Even missing data from one could lead to inaccurate results and bad, or costly, decisions.

The FORCAM FORCE EDGE solution provides a simple way for manufacturers to tap into the full potential of data and their machines to create a better ROI on their investments in tech and manufacturing equipment throughout the company. Indeed, with FORCAM FORCE EDGE, companies can start using the data being created by their machines in the way in which AI and machine learning intended: automatically. **FORCAM FORCE EDGE, available now on SAP Store**, is truly a win-win for manufacturers and the organization.