FROST & SULLIVAN

Building Operational Resilience through Enterprise Asset Management

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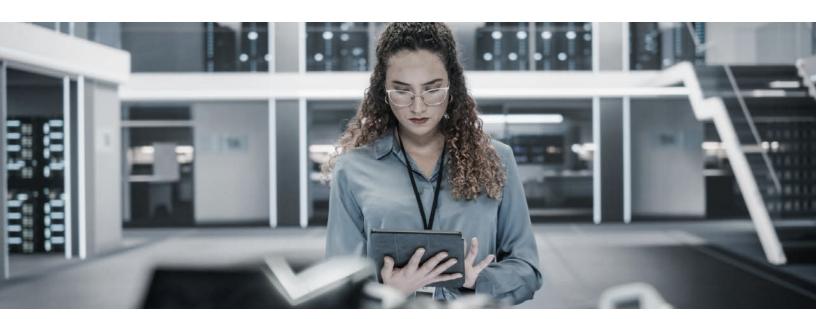### FROST & SULLIVAN VIRTUAL THINK TANK

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As the business ecosystem tries to recalibrate in the postpandemic era, businesses are taking stock of their assets and planning out how to leverage innovation to bring more resilience into their operations on an ongoing basis. There are so many more handheld devices and artificial intelligence (AI)-based automation now to integrate within the infrastructure.

With productivity ramping up, we have started seeing machine vision become a more integral part of businesses' strategies to augment operational efficiency. We have seen this happen across multiple verticals such as retail, hospitality, healthcare, and manufacturing. The value proposition goes beyond quality control (QC) to ensure more uptime for all processes and the machines running them, identifying maintenance needs and providing data to better allocate resources. An automotive service center is an excellent example of that.

Though technologies such as AI, machine vision, handhelds, and drones have been talked about for a while, there has been a certain urgency recently about adopting these innovations and moving toward a more sustainable circular economy. This momentum has put the spotlight on a couple of enabling technologies, namely edge computing and cloud infrastructure. It's not rocket science to deduce that to effectively manage the velocity and volume of data being shared and analyzed across myriad devices, a hybrid infrastructure that utilizes the edge and the cloud to provide insights with low latency is gaining favor as businesses strive to achieve better operational efficiency.

The underlying infrastructure must be able to scale to meet a business's changing requirements, whether it be to have an automated warehouse to fulfill even more online orders or to improve QC in a discrete manufacturing environment. Whatever the use, data, devices, interoperability, collaboration, and communication are key ingredients to power an effective enterprise asset management (EAM) system.

Frost & Sullivan discussed these issues with prominent users across various verticals through a Think Tank. This article summarizes that discussion.

Key Insights for the Think Tank

Businesses are transforming more rapidly, and more sensors and devices are generating an immense amount of data that must be analyzed and acted upon in real time.

Visual analytics and generation of insights with very low latency are becoming mission critical for situations that require almost instantaneous reaction such as safety and QC.

A well-integrated EAM solution is no longer a nice-to-have but a must-have. Businesses cannot afford to deploy EAM solutions in silos.

EAM solutions are evolving to help businesses meet their environmental, social, and governance (ESG) and sustainability goals.

Harnessing Device Proliferation for Better Operational Efficiency

Handheld devices have a tremendous impact on the business ecosystem and are essential for effective operational efficiency. They are indispensable to all users we spoke to for everything from inventory management to QC.

As companies keep adding different types of devices, they must ensure proper management and allow for scale and interoperability. Avi Guha pointed out that businesses need to understand the infrastructure, the composable architecture, the common data dictionary objects that they need to have, and what they must do to scale. He said it's not always about trying to catch up with the competition, but to build a platform that will suffice for the next 10 to 15 years.

In many instances, an enterprise might not have clear connectivity with its factories because of location or the field force might lack connectivity to use devices properly in rural areas. These issues must be considered before a business invests in a technology or else it may be underutilized.

Scott Campbell added that phones and tablets now have a lot more rich data associated with them, whether visual or coming from AI systems. So now there is a big push to arm a technician with as much information as possible—a big factor for first-time fix rates. Technicians armed with the right information at the right time on their device can realize a significant boost in their productivity. That directly impacts return on investment and is a win. However, devices have limitations in terms of compute and storage, and businesses must ensure that they have the underlying infrastructure to support that.

Sunil Chauhan explained that throughout the pandemic there has been a rapid adoption of new technologies along with the ability to port them on affordable smartphones instead of specialized tablets and handheld devices. Businesses though, must ensure that all devices have a single point of entry and the most recent data, and that all information goes into the single core system, avoiding any duplication. It is only through such a well-integrated system that a business can reap the maximum benefits.

Using Visual Analytics to Optimize Specific Use Cases

The types and quality of data used to inform asset management systems also have changed considerably over the past few years. Mark Lopez pointed out how with the internet of things we now have the ability to monitor devices and, in turn, productivity and quality. The challenge, therefore, has become that of information overload. It's not so much about needing data but deciding what data sets are relevant to optimize efficient operations, both from long-term and short-term perspectives.

Although traditional data streams are still being used and the information is becoming more reliable, visual analytics is helping sort through the clutter to provide better insights for better decisions.

Guha further explained how visual analytics in a factory setting is important from a safety standpoint and to assist with inventory reconciliation given that a multitude of cameras are now being used to facilitate such business outcomes.
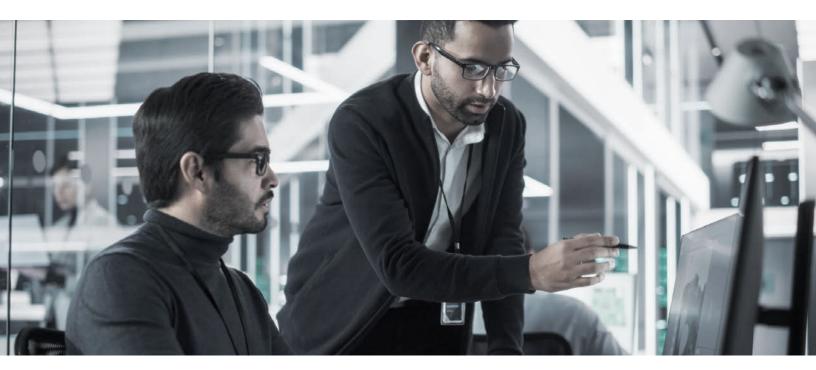
Overcoming Latency Issues to Maximize EAM Capabilities

With the speed at which many processes are being automated today, data availability in real time is imperative in many business operations. Lopez was quick to point out how, in his experience in the transformation to Industry 4.0 manufacturing standards, latencies exist with SaaS-based applications and in a manufacturing environment critical information must be acted upon in real time. For example, response time for robots in a QC setting would require instant feedback to act upon a quality-related issue, so a network design that incorporates edge computing capabilities would be highly effective.

Campbell tied computer vison applications to the need for low latency and emphasized how a lot of focus is on anomaly detection because of its immediate value for safety and QC. However, he pointed out that a tremendous number of sensors are collecting and feeding a continuous amount of small packets of data while the large amount of machine vision/video data coming in would require very high compute capabilities. So now one must contend with both a pipeline and a latency concern that is happening all at once.

Once businesses become more experienced with the technology and the anomaly detection use cases, they can start looking at deploying these capabilities for condition-based or predictive and financial-based maintenance to extract even more value.

Becoming More Agile and Transparent through Improved Connectivity

Despite the obvious value proposition that these capabilities bring to the table for better asset management and operational transformation, the underlying infrastructure must be able to support this. To become more agile and have better visibility across interconnected systems, connectivity that supports the increasing velocity and volume of data shared is a strategic imperative. Many businesses still struggle with legacy deployments and the cost to transform. This is where both return on investment and opportunity cost must be considered.

Tommy Dunning and Justin Pochardt both spoke about how better capabilities such as QC inspection can be introduced within long processes, but attractive price points and the demonstration of substantial efficiency and/or productivity gains are needed for faster buy-in. Ryan Knudsen also brought up the issue of training, which has an immediate effect on usability and uptake: if training is unsatisfactory, it stops further investment into the initiative.

Chauhan emphasized that the amount of data coming across sensors and other devices is outpacing current connectivity infrastructure and has put a spotlight on how important it is to improve that infrastructure to realize the true value proposition of these capabilities.

Unleashing the Value Proposition of an Evolving, Holistic, and Well-Integrated EAM Solution

Another challenge is underutilization of EAM solutions, which tend to be siloed as point solutions. Without adequate visibility across other systems, they are unable to provide the promised business outcomes and instead languish. Chauhan pointed out that as companies see better returns for both their top and bottom lines, especially in manufacturing and logistics, they are continuing to integrate EAM with their enterprise resource planning systems and break down silos to create a more holistic solution.

Lopez echoed how over the past 5 to 10 years EAM has been proving itself as a mission-critical solution that must be integrated across the enterprise.

Dunning highlighted the perils of trying to orchestrate integration in-house instead of buying a purpose-built solution off the shelf because of the numerous unanticipated costs and an actual reduction in operational efficiency. Campbell pointed out how EAM is evolving from asset management and maintenance as the core to performance management with reliability and predictive capabilities. As EAM solutions continue to evolve, a new dimension focuses on businesses as they try to realize their ESG goals and become more committed to sustainability.

Everyone agreed how strategically important EAM's evolution is to the bottom line. Guha pointed out that businesses are not anti-change but anti-failure and will embrace solutions that help them maximize the value of their existing assets.

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