



## Empowering ERP Asset Management Solutions

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### The Digitalization Vision

*How VIZIYA is connecting your assets and your software to optimize maintenance workflow*

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During the late 2000's a growing trend developed in business software where organizations were looking for improved integration between various business systems/processes in order to improve the exchange of data and streamline core business process. Organizations realized that integrating these so-called best of breed solutions was difficult, unreliable and very expensive to implement and maintain. Ultimately, they realized that the benefit of having these core business modules integrated far outweighed the loss of the perceived best of breed functionality. Many companies therefore replaced (or are in the process of replacing) these best of breed solutions with integrated solutions (ERP's) such as SAP, Oracle, JDE, etc.

Presently, organizations are coming to a similar conclusion in relation to advanced and predictive technology. More and more, industries are moving towards integrated technologies that they can exploit for added value unavailable when the technologies are disconnected. Trends in the maintenance industry are moving towards not only integrating various software, but also to connecting physical assets to these software systems; This is where digitalization starts to take form.

Digitalization can be defined as the use of digital technologies to change a business model and provide new ways and opportunities of doing business; For example, utilizing data from the digital work order you produced to improve current business processes. Digitalization is essentially a transformation within a company that utilizes digital technologies and data to improve the way things are done. Digitalization doesn't necessarily involve replacing your current systems, but rather it builds processes that leverage those systems, with any needed enhancements, to create a true end-to-end digital process-based environment.

The digitalization of Asset Maintenance should be first and foremost on each C-Level Executive and Asset Manager's mind. Organizations not actively looking at digitalization or that do not have a roadmap for the digitalization of Asset Maintenance in place will be unable to extract potentially exponential value from their Assets, Resources and Maintenance processes and will be left lagging behind industry peers.

Asset Management, at its core, is about the optimal financial management of physical assets. It is about optimizing performance while balancing cost and risks over the life cycle of an asset. Obviously, it's not as simple as that and there are many different variables that go into successful asset management, including asset design, construction/ procurement, scheduling, planning, budgeting, life cycle management and so forth. All of these variables play a key role but at the end of the day, the management and usage of those physical assets must be in line with the financial goals of the organization.

Digitalization of Asset Maintenance encompasses all elements of the maintenance workflow including the identification, planning, scheduling, execution, completion and analysis of maintenance. This involves the scheduling of work, having ample supplies to complete work, identifying imminent failures, capturing accurate and timely data, and being able to analyze that data as it is computed, as well as down the road, to identify trends and behavioural patterns of the machines. There are so many moving parts and so many different people that it is essential to be able to connect those parts and people in a centralized hub (or cloud).

Many asset intensive organizations have outdated processes that make the above seem unattainable or at the very least – a massive undertaking. While it's no easy task, it is possible and the return on investment makes the undertaking worthwhile.

## New Trends in Technology

During the last few years, new trends in technology innovation have emerged that are actively challenging the traditional thoughts about maintenance and the value it can bring to effectively manage cost, risk, and performance.

Some of these technologies are not new, it is the convergence and maturing of these technologies however, that are fueling the change and forcing organizations to make a paradigm shift regarding how these technologies can be leveraged to achieve organizational goals. These innovations are largely driven in the industrial context by the popularity and ubiquity of the Internet of Things (IoT), pervasive mobility, predictive analytics and Industry 4.0 technologies.

## Lack of Clear Strategy

Based on figures obtained from Statistics MRC, the Global Enterprise Asset Management Market is expected to grow by a Compounded Annual Growth Rate (CAGR) of 11.1% by 2022 and according to MRO Magazine the number of connected devices will top fifty billion by 2020. Also, according to an article called *"Edge Analytics in IoT"* by ABI Research, the volume of data captured by IoT will exceed 1.6 zettabytes of data by 2020. Through the media, news and entertainment C-level managers are being sold the concept of how much better their lives will be because of these technologies. These managers are therefore increasingly looking towards digitalization as a mechanism to eliminate or optimize manual or inefficient business processes:

- 82% of business executives believe successful adoption of IoT is critical to the future of their company, but only 25% of those exact same business executives have a clear adoption strategy (Internet of Things Institute <sup>TM</sup>)
- Research conducted by Cisco, found that close to 75% of initial IoT projects are failing
- According to the same Cisco research, 60% of IoT initiatives stall at the Proof of Concept stage and only 26% of companies have considered their IoT initiatives a success

The above statistics are for IoT projects across all business functions and processes; however, these same growing pains can be applied to the IIoT (Industrial Internet of Things) projects as well – or IoT within the Asset Management space. A key reason for the above statistics is that these solutions are pitched at the 50 000-foot level and as some sort of nirvana rather than being presented in a practical and sustainable manner that is focused on addressing key business issues. Further, the sheer volume of data available as a result of IIoT technology and the actions required because of this data has necessitated the need for a controlled end-to-end process to execute on the new demands.

## Creating a Coherent Roadmap

Asset managers would often like to adopt new technologies, but they are struggling with day-to-day operational issues and often do not know how to apply these new technologies to address those issues. This is not only due to the lack of a proper digitalization strategy but largely due to the fact that, when asset managers look at these technologies, almost all technology providers only offer one or two point-solutions that only address a few specific business issues, leaving asset managers needing to look at multiple tech providers to solve their end-to-end business issues. These solutions often overlap in functionality and since they are from different vendors, integration between these solutions becomes an additional headache that needs to be dealt with.

It is the lack of integration between these digitalization technologies that is a key factor hampering the adoption of these new technologies. It is posing a massive risk to asset managers of not achieving the desired goals set out to be extracted from implementing these technologies, and ultimately driving the need for an integrated digitalization strategy.

## Digitalization to Drive Optimization

Connected and integrated assets and technologies help address and improve one of the core challenges of maintenance: the right part, in the right place, with the right craftsperson, at the right time. Consider the following two scenarios:

### Scenario 1: Non-Digitalized System:

A sensor monitoring a bearing's temperature collects streams of real-time data during the course of a day and feeds it to a data historian. If a sensor detects an issue, an event is raised in the data historian. Someone needs to find the event on an alert board or dashboard, evaluate the priority of work, determine whether a work order for this condition has already been entered, and create a new work order in the EAM/CMMS system if needed. If the event is not caught by someone, the asset will fail and a break down will occur.

### Scenario 2: Digitalized System:

A sensor on a key machine warns of a possible impending issue and creates an SMS/Email notification to a Supervisor to arrange a craftsperson to do a visual inspection. After some elapsed time, the notification is converted to a repair Work Order to bring the equipment out of service within the next seven days – a Break-in to the schedule.

- The Planner/ Scheduler is notified of the Break-in Work Order
- All spares are reserved or ordered for the specific job
- A warranty claim document is generated and sent to the Vendor asking for approval to work on the asset or to send to the repair team.
- The Supervisor is also notified and instructed to assign the required craftsperson.
- The Scheduler/Supervisor reviews the schedule to determine impact on compliance
- The Work Order cost is added to the budget and the Supervisor/Manager can review and allocate money from reserve if a possible overspend exists.

If more time passes, the reading will escalate again. The break-in Work Order is changed to an Emergency Order and the Work Order is immediately sent to the mobile device of Crew that is working that shift.

- The Supervisor, Managers & Scheduler is notified by SMS/email of the Emergency Order.
- The Scheduler is prompted for less priority work to be moved out.
- All Warranty instructions are attached to the mobile work order and the Vendor is sent an urgent request to either approve the work on the asset or to send an emergency team
- All spares and special tools are released and issued to the job for collection
- Required permits are generated and issued for approval including any risk assessments.
- The craftsperson arrives at job site and the work order is made active and work can be started from mobile device
- All relevant parties are informed that work has started via SMS or email and who is attending to the job

Once work is completed the final costs are tracked in the budget and management can adjust plans to ensure budget compliance. Failure information such as actions taken, reasons for failure etc. along with Work Order information such as costs, types, work efficiency etc. are captured for analysis. The Warranty claim is solidified with actual costs incurred, recovered, etc. and is finalized and available in analytics.

- If the warranty claim is honoured, it is reflected in budgeting reimbursements; and supply chain can use the information to negotiate based on price or coverage and to improve and build stronger relations
- Or if the claim is denied the reasons for denial is passed back to the Reliability and Maintenance groups to initiate a CI process.

The completed Work Order is attached to the event frames in the Data Historian to allow the Reliability group to analyze and execute the proper maintenance strategy. All data in the historian is available and combined with the Work Order, costing and warranty data for detailed analysis.

Scenario 1 demonstrates the ease at which issues can be missed, break downs can occur and money can be lost when systems are disconnected and manual. When multiple sectors of the maintenance process are connected and digitalized, as demonstrated in scenario 2, issues are missed less frequently which prevents break downs, warranties are utilized, budgets are updated to maintenance accuracy, data is captured for later analysis and use for increased reliability, money is saved and ultimately the maintenance process is optimized.

## The VIZIYA Digitalization Vision

VIZIYA believes that the digitalization of Asset Maintenance should be focused on and encompass the entire *Operate and Maintain* phase of the Asset Life Cycle. The Operate and Maintain phase, or more specifically the Work Management Processes, is the heartbeat of any effective Maintenance Organization.

VIZIYA therefore also believes that to obtain maximum value from these processes, some organizations will require a fully integrated set of enhancement solutions that provide superior



functionality to augment their core ERP functions, that enables the implementation of previously onerous manual processes, and that integrates and exploits sensor data (IIoT) and streamlines the sharing of data between technology components, business processes, functions, departments and organizations – i.e. the VIZIYA WorkAlign® Suite. In other words, VIZIYA believes that maintenance organizations need **one** solution that can take them through the identification, planning, scheduling, execution, completion and analysis stages of the maintenance workflow.

To learn more about how VIZIYA helps maintenance organizations enhance their maintenance workflow, learn more about the [VIZIYA WorkAlign® Suite](#).

Additional Resources:

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond Scheduling](#)

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond Mobility](#)

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond Analytics](#)

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond IIoT](#)

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond Warranty Tracking](#)

[VIZIYA WorkAlign®: How to take your Maintenance Processes Beyond Budgeting](#)

## About VIZIYA

Headquartered in Hamilton, ON, Canada with offices in Madrid, Perth, Atlanta, Belgium, The Netherlands, and Dubai, VIZIYA is the industry leader providing bolt-on software products to enhance ERP- based asset maintenance systems. VIZIYA's proprietary WorkAlign® Product Suite delivers seamless integration into existing ERP systems. With over 55,000 users at 850 sites across 6 continents, the world's best companies use VIZIYA products to help them better maintain their assets. Visit [viziya.com](http://viziya.com) for more information.