THE IMPORTANCE OF IMPLEMENTING

SUSTAINABLE OPERATIONS MANAGEMENT SOFTWARE

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INTRODUCTION

Maintaining high standards of safety and efficiency in the industrial environment is inherently difficult and software users do not want to be forced to replace their systems when requirements change. They are looking for applications that will evolve steadily with their changing requirements over the long term, a decade or more, rather than just years.

This paper discusses the features and capabilities that are essential for sustainable, future-proof Operations Management Software (OMS). An OMS should:

- Embrace the concept of continuous improvement deep in the core of the software
- Provide a toolset that enables the user to make small, frequent changes to the configuration without calling in specialized programmers
- Take advantage of annual upgrades that automatically provide the latest features, again without calling the specialists
- Provide an extensive and extendable suite of applications to cover the broad range of operations management requirements
- Be provided by a vendor that has the industrial know-how to grow with the end user and provide the kind of support that is critical in the industrial environment

The benefits of this approach to Operations Management Software are well known in the manufacturing sector but in our opinion, they have been largely ignored or overlooked in process industries.

Contemporary businesses would benefit from sustainable software solutions that are constantly evolving and responsive to their changing requirements in many ways. Such solutions help to satisfy safety best practices, like a standardised system for the management of change or the reporting and investigation of near misses; they are embedded with built-in revision controls, and easy to deploy; they are built on a platform that is easy to configure and highly flexible; typically this kind of software will be purchased and retained for 10 years or more, something very unusual in the non-industrial sector.

Companies need to select an OMS vendor that adopts a "Kaizen" philosophy of continuous incremental improvement. This Japanese approach yields significant productivity gains over a period of several years, the product of multiple small improvements. To achieve this steady, continuous improvement, it is important that the concepts are embraced not only in the end-user organization but also within its software vendors. In particular, the software toolset needs to be flexible enough to enable the improvements to be made.

This White Paper looks at five key questions that every company should consider when choosing OMS vendors and selecting the software platform and applications that they intend to implement.

1. DOES THE APPLICATION TOOLSET OF YOUR POTENTIAL OMS VENDOR PROMOTE AND SUPPORT THE CULTURE OF CONTINUOUS IMPROVEMENT?

When selecting an OMS vendor, companies must not only consider if the application suite can be configured to their unique process, information and reporting requirements, but also if it can be adjusted and extended to meet their changing requirements over a sustained period. An OMS solution needs to have the flexibility required to support the alteration of existing applications, the seamless addition of new applications, and the creation of new purpose-built, custom applications.

Changes need to occur in a controlled Integrated Development Environment (IDE) so that they can be rolled out and rolled back globally without headaches or costly changes to source code.

Modern IDE's are built to emulate existing widely used applications like spreadsheets. Anyone conversant with these tools can quickly assimilate the idea of modifying existing applications or even creating new applications using the IDE. Basically, "If you are happy moving around a spreadsheet, you will find the IDE intuitively easy to use."

This concept of aligning the IDE with existing general-purpose tools effectively means that the evolution of applications can be carried out by customer personnel, or a local system integrator, without the need to go back to the vendor for changes.

Further, changes to the applications – whether modifications to existing applications or the creation of new applications – should be possible with a minimum level of disruption to operations. Ideally, it should be possible to process such changes without even shutting down the existing system.

Similarly, framework vendor updates should be easy to install because the framework is unaffected by any changes made by the IDE. Version upgrades need to happen smoothly from year to year as the core product is steadily refined and improved.

The power to create safe revision-controlled applications within a tested framework gives end-users confidence that they can customize their systems without harming their core components or functions. While the software vendor is steadily improving the core application framework, its end users are free to exploit extensive and expanding opportunities for system configuration.

Creating new applications on an interface with which that the business user is already familiar reduces the need for training in new applications, and practically eliminates resistance to adoption among end-users.

In addition, new applications can be produced quickly – something that is vital in the fast-paced ever-changing industrial world.

All these points underscore the importance of choosing a vendor with an application tool-set that supports the Kaizen philosophy of continuous incremental improvement over the long term.

2. HAS YOUR POTENTIAL OMS VENDOR GOT A PROVEN LONG-TERM STRATEGY AND DO THEY UNDERSTAND THE IMPORTANCE OF SUSTAINABILITY?

An OMS system is a long-term investment because changing an existing OMS tends to be costly and disruptive, often involving a significant investment in analysing user requirements and business processes, infrastructure, architectural design, implementation, testing, user training, transferring of data from legacy systems, and so on.

Therefore, companies must be careful when choosing an OMS vendor and one of the key considerations must be the shelf life and potential evolution of the solution. Vendors with a proven track record of innovation and improvement - over a number of years – and a tried and tested framework, must be given serious consideration. The OMS marketplace has seen many vendors appear and disappear, with many short-term and unsupported products appearing in industrial sites. Having an OMS system in place that has been discontinued by the vendor leaves the end user in a difficult situation. The solution may be fine in the short-term, but inevitably a new OMS will have to be procured due to the ever changing industrial and IT landscape.

Another danger of investing in a short-term OMS system is the possibility that the vendor will be bought-over and/or its products will be merged with another system, scrapped or unsupported. The new owner of the product may be unsympathetic to the exact requirements of their newly inherited customers and attempt to implement a new system that is a poor fit. This can cause a never-ending black hole of support and maintenance, trying to massage the new system to meet requirements that it was never designed to satisfy.

In contrast, investing in an OMS system from a vendor who understands the Kaizen concepts of continuous improvement will ensure that the system can evolve with the end-user's changing needs. In the increasingly data driven industrial world, an OMS customer must be confident that it's vendor has a reliable and ever-evolving system which has a

proactive rather than reactive software development policy. When procuring such a system, a thorough RFP process must be followed with a detailed technical specification of current requirements. This is not enough though, equal if not more weight must be given the ability and commitment of the vendors to satisfy future requirements and to provide a long-term, sustainable product partnership.

It is also important to get current customer references from each vendor, with sustainability and future development plans being a vital point of reference.

Figure 2.1 – Kaizen Philosophy

3. IS YOUR POTENTIAL OMS VENDOR DEVELOPING PRODUCTS THAT PARALLEL INDUSTRY REQUIREMENTS AND TRENDS?

The industrial world has seen major shifts in the last few years with web-based applications, big data, cloud computing and mobility coming to the forefront. Contemporary IT departments are moving away from client applications – which need to be installed on each device – in favour of web applications which require nothing more than a standard web browser. With each passing year, end users are becoming more technologically sophisticated and therefore demand innovative products that are constantly evolving. Cloud computing culture has raised the bar in consumer expectations, with seamless and regular updates becoming a necessity.

Is your OMS product web-based, with potential cloud capabilities? "There is an app for everything" is a common refrain. Does your proposed OMS system support the creation of custom industrial applications quickly and efficiently? Is it flexible and customizable to adapt to changing and increasing health and safety regulations and standards? The question is: will your OMS vendor allow your company to adapt to these and other industry changes quickly and efficiently?

Mobility and remarkable internet-speed are other contemporary trends. Companies with complex multisite

operations require mobile applications which allow operators to record key plant information on the move. Clipboards, paper and pens are being replaced by native mobile applications which guide operators through their Inspection Rounds. An electronic mobile solution can present standard operating procedures to an operator in the field, and change them if necessary, in real-time. Can your proposed OMS vendor deliver a suite of native mobile applications, ergonomically designed and attuned to both iOS and Android? This is another indication of its commitment to keep abreast of the latest industry trends and requirements, and a measure of its long-term commitment to its customers.
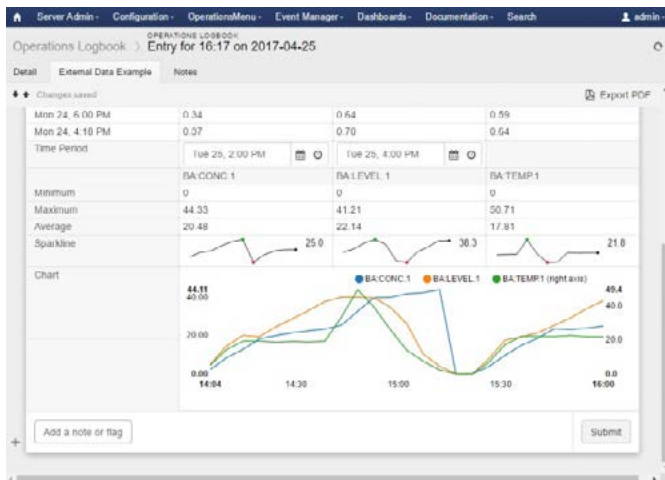

Figure 3.1 – j5 IndustraForm® Template

4. DOES YOUR POTENTIAL OMS VENDOR OFFER A BROAD RANGE OF APPLICATIONS WHICH COVER VARIOUS ASPECTS OF YOUR OPERATIONS PROCESSES?

In many control rooms there are a range of OMS products that operate disjointedly, or at best are patched together in a haphazard fashion. There might be one vendor providing the Operations Logbook, another providing the Incident Management system, another providing the Permit to Work system, and so on. This provides numerous headaches and support issues, due to the differing relationships between the different programs and vendors. Often, the task of interfacing between applications from different vendors can exceed the total cost of the applications themselves. It is also unreasonable to expect operators to understand fully 5 or more different user interfaces from the different vendors. If you add in paper documents, spreadsheets and internal databases, this can lead to chaos and a lack of consistent and cohesive data.

The OMS system's job is to unify different teams by providing a single portal that can be accessed by personnel in Operations, Process Safety, Compliance, Maintenance, Laboratory, Planning, Management, and Executive roles. It needs to be well supported with flexible and comprehensive reports, drill-down dashboards, mobile integration and workflows, and extensible into a full suite of applications,

both those that are industry-standard, and also those that will be purpose-built for my unique needs to replace the current mix of on paper forms, spreadsheets and standalone databases.

Before making an investment in the OMS space, it is important to ask the question, is this system adding yet another ad hoc system to the smorgasbord of existing systems, or does it have the potential to bring unity and simplification to our operations? Does it have the potential to be expanded to address each of the following application requirements?

- Manual logging of Operational Events (Operations Logbook)
- Responding and reporting on events captured by other plant real-time systems (Event Manager)
- Shift to Shift Communication (Shift Handover)
- Operational Orders (Standing Orders)
- Operations Task Management (Work Instructions)
- Follow-up or Corrective Actions (Action Management)
- Operator Rounds (Inspection Rounds)
- Incident and Near Miss Management (Incident Management)
- Documented Management of Change
- Work Permitting System (Permit to Work)

Finally, does it have what it takes to replace the multiple "special-case" spreadsheets, standalone databases and paper forms that have evolved with my organization?

5. DOES YOUR POTENTIAL OMS VENDOR PROVIDE LOCAL SUPPORT?

With most OMS systems being used 24/7 and 365 days per year, it is important to have a local support network from your vendor. It is important to ascertain if you can get reliable account and technical support from professionals who have a thorough understanding of the product. Even if an OMS vendor is available 24/7, this does not necessarily qualify them as "global". Unless your vendor can point to credible customer references and system integrators from around the world, it is wise to be wary of these claims.

Therefore, it is important to select an OMS vendor with a global support network of company representatives, system integrators, partners and customers. The bigger the support network, the more confidence you will have in your OMS system. It is also important to rely on local language support and be confident that your OMS system has multi-lingual capabilities.

CONCLUSION

There are many important factors that must be considered when choosing an OMS vendor. Firstly, investing in an OMS system from a vendor who understands the Kaizen concept of continuous improvement is essential. In the increasingly data driven industrial world, an OMS customer must be confident that their vendor has a reliable and ever-evolving system which has a proactive rather than reactive software development policy. When procuring such a system, a thorough RFP process must be followed with a detailed technical specification of current and future requirements. It is also important to get current customer references from each vendor, with sustainability and future development plans being a vital reference point.

Secondly, when selecting an OMS vendor, companies must consider if the application toolset can be customized and extended over a sustained period. They need to implement an OMS solution that can be easily configured to their unique process, information and reporting requirements. The key areas of Operations, Process Safety, Maintenance, Mobility, Compliance must be covered along with Reporting and Dashboards. It is important to purchase applications within a tried and tested framework, but also important to have the flexibility to create new custom applications in a safe Integrated Development Environment (IDE). Modern IDE's are modelled around existing applications like spreadsheets so as to virtually eliminate the learning curve associated with site personnel getting to know how to quickly and easily enhance applications. Therefore, any changes can be rolled out and rolled back globally without ever affecting the source code in the framework.

Thirdly, when choosing an OMS vendor, it is essential to invest in a product which is web-based with potential cloud capabilities. The now mainstream "app" culture has the common tagline of "there is an app for everything" and it is important to select an OMS system which allows the creation of custom industrial applications quickly and efficiently. In the industrial world, increasing safety and compliance measures require an OMS system to be flexible and customizable. Therefore, it is essential to have trust in OMS that allows a company to adapt to industry changes quickly and efficiently. It is also important to select an OMS which has a suite of native mobile applications, which are ergonomically designed to each operating system, such as iOS or Android. There are huge differences between a native mobile application and a mobile view of a web browser, and this is something that can often be overlooked during the evaluation of OMS products. Fourthly, it is wise to invest in a system which covers all the below requirements on a single platform:

• Manual logging of Operational Events (Operations Logbook)
• Shift to Shift Communication (Shift Handover)
• Operational Orders (Standing Orders)
• Operations Task Management (Work Instructions)
• Follow-up or Corrective Actions (Action Management)
• Responding and reporting on events captured by other plant real-time systems (Event Manager)
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