Taking a holistic approach to business

Companies are required to take a holistic view to their business, operations and operation/automation systems

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1. Introduction

Today's market does not allow companies to take a narrow, silo view and approach to running their business, so why do we take a silo view of operations execution?

In order for leading companies to be competitive, they must evolve from an “island focus” on solutions/strategy to a “holistic perspective/view.” Companies must evolve from just one equipment, process, culture, or plant and review all equipment across the plant and how they affect the production profitability. This must be completed for all the plants in the supply/manufacturing chain (including all plants and “contract manufacturers” suppliers), and view the whole and virtual manufacturing environment, across a unified business, environment, process. The User must understand, affect, and view all processes and information, in order to make pivotal decisions across the operational processes for optimized operations.

The leaders in manufacturing are taking a bigger, holistic view of their complete “Operations Execution” so decisions and actions at all levels in the business process execution are aligned to achieve a common goal. Companies can no longer work in silos within a plant, or just one plant.

To accomplish this task, Business/Operations Process Execution standards are required. The world demands a virtual manufacturing/industrial environment across the “fleet”of plants, regardless if you are in manufacturing, power generation, or oil field management. Companies must be able to access, analyze, and execute common Business Processes and achieve Operational Excellence.

2. The business driver: Today’s situation

In the last 20 years, most automation within plants has gone through two generations, with a matured foundation controlling the processes. What has been created is a set of “islands” (process) that are associated with a particular process or equipment. This results in continued improvement in the island’s performance, cost effectiveness and without realizing the bigger picture.

The following factors were key in the creation of islands:

- Plant culture and organizations set an island focus
- Compensation that is typically linked to a focused section of the plant or process
- Technology
- Project focus
- Plant design
- Company boundaries (in the case of contract manufacturing)

Most projects began with a specific target and objective that drives the design and architecture. Due to the plant versus business cultural divide, the design of these projects was localized along with the information and view. This project design approach was successful when the industry was satisfied with controlling the process. However, today, we must control the product, and have the agility to change and meet market demands, which requires systems that can evolve and change to align with products being produced and market demands.

This change has caused most companies to go through a roll-up of similar company plants with adjacent products or better locations to satisfy customer demands, as well as inherent the control, operational systems and existing cultures. Therefore, the concept of standard control systems has been discarded using OEM equipment and roll-ups. This has added a significant challenge for companies wanting to apply an Operational Management Solutions across multiple equipment or run consistent business processes across a business.

Chief Operating Officers must focus on three challenges in order to grow their business:

- Brand Value: Acquire and retain customers by maintaining brand loyalty using the brand quality and innovation. For example, the Brand Value was applied within the Power industry for selling utility, using innovative purchasing plans and product consistency.
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- **Product Supply:** In the demand for product, customers and market access (retail) do not tolerate lack of supply. For example, production of power: customers do not tolerate supply interruption; if customers want to purchase a specific product, and it is unavailable, they will switch to different brand. This challenge drives companies to build more plants, or buy plants to improve their supply landscape, becoming increasingly agile to satisfy customer demand changes and optimize supply chain costs.

- **Business Health:** The ability to deliver a product to market at a competitive price while making a profit, maintaining safety in the workplace and abiding regulative and environmental guidelines.

These three factors must be viewed as a whole, yet most companies implement initiatives to correct only one factor and do not realize the affect it has on the other two factors. Therefore, the overall business result is unaffected or in most cases, has a negative impact on the overall business.

The final and most likely cause for “island” operations in a plant is the “culture” between the various working groups within plants. Traditions have developed various cultures and barriers between the groups, all with different focuses and motivations. For example, Engineering vs. IT, vs. Operations, all have compensation and mind focus on achieving their own goals. While logical when viewed in isolation, the bigger picture demonstrates that they are not aligned with common success.

Leading companies are breaking down these barriers by forming new departments such as Industrial/Manufacturing IT groups that have merged engineering and IT to run the plant IT/Automation systems. Motivated in the same way, the result is a significant and positive movement forward.

Manufacturers are no longer protected by communications and are unable to deliver products in an ideal time. This presents customers with new alternatives each day. Customers demand increased responsiveness, standards and less “Brand” loyalty. Therefore, it is important that customers are satisfied in quality, value, and supply; otherwise, they will switch to a different brand. To stay in business and grow, manufacturers must be:

- Agile to the local customers needs (one size does not fit all)
- Responsive to supply
- Competitive in price and value

This requires manufacturers to look at the business of making and delivering a product as “whole,” not in segments or silos. They must constantly review all variables in the manufacturing process, deliver effectively, and at the same time include invention and innovation, as product lifetimes are decreasing.

Plants must be more responsive in creating and delivering products. For example, plants can be located closer to the consumer that is building the same products, while reducing costs, and rolling out new product innovations as “new product to volume” becomes a key metric for operations.

Companies can no longer compete with the traditional barriers in culture, systems, location and information currently in place. It is important that the entire process becomes transparent and one “Virtual Enterprise Industrial/Manufacturing Landscape.”

3. Clients’ ideal state: “Virtual enterprise manufacturing and industrial landscape”

The new paradigm will be for leading companies to evolve to a “Virtual Enterprise Industrial and Manufacturing Landscape.” This will provide the operations and intelligence to run aligned plant operations with the business.

The “Virtual Enterprise Industrial and Manufacturing Landscape” must enable:

- Abstraction of the existing equipment in plants into a unified asset and process model
- A unified model across plants with common approaches and standards that follow the product being developed at any given time
- Unified information and operations model across existing systems and the entire manufacturing/process of the product, (including contract manufacturers). This provides an “end to end” product information view from idea to delivery, in the context required by the appropriate user (such as product, order, material, process and equipment).
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- Using the unified asset/process model, a company can apply rich operations software applications that extend the agility and effectiveness of the plant operations
- A unified information and measure model is applied across the processes and plants, enabling powerful client information in the correct and required context
- All departments and personnel running off one system, supporting collaboration between users (no matter which department or culture), increasing effectiveness and achieving operational excellence
- Aligned cultures across the industrial/manufacturing landscape of the company with aligned measures and goals
- Operations Management must gauge all variables of interest, looking at the complete “end to end” picture, history and “forward look”
- Companies to build horizontal strategies for control at the different layers in the Operations systems (layers 2 and 3) and configure vertical Process Operations across the layers and strategies
- Merge layers and build “Operational Process” company standards or templates for corporate policies and/or governance across plants and processes, align with “Business Processes” to achieve total Business/Operational alignment and a new level of agility
- Companies will deploy standard operational execution processes over multiple processes, plants and companies, rapidly and consistently, enabling these processes to be evolved and maintained

Companies will be able to evolve, add new plants, incorporate new equipment and processes into the “Virtual Enterprise Industrial/Manufacturing Landscape” and leverage the business/operations process alignment, quickly and efficiently. This will bring new equipment or plants quickly in line with the corporate business strategies, while maintaining the existing asset and systems.

A “throw out and replace” strategy is not acceptable, as it introduces significant risk and has proven to fail after a merger. A “collaborate and align” strategy that leverages the value of people (cultures), equipment and systems has proven far superior. Companies that provide this framework will achieve a business process unified with operations process across their equipment, people and plants, while maintaining the uniqueness/value of the local plant.

This unified framework will enable:

- Rapid deployment of new products to the system, so New Product time to Volume is dramatically reduced
- Agility, by bringing new products to local markets, adjust supply by understanding the whole picture of manufacturing constraints, and supply, so strategies can rapidly be formed to anticipate customer demand
- Cost is constantly monitored versus supply to customers to enable strategies around cost effectiveness to be formed using the entire business and process picture
- Fear/risk of change, and reacting to problems after-the-fact is removed through agility, holistic knowledge and the ability to pro-act

4. Summary

As the demand to be responsive continues to grow, customer’s expectations for value will grow. Companies will find in this “flat world” new competitors and alternatives undermining their traditional market and customers.

Companies who are agile to act, knowing they can succeed in integration and their alignment of equipment, plants, people and systems are moving in the same direction. They will have a platform to make decisions and strategies that can affect the business and respond in a timely manner.

Customers will be driven to a new class of automation/information vendor that can supply “off-the-shelf” systems that can be maintained, remain “evergreen” (always current version), and which integrate, orchestrate, and enable collaboration across their equipment, people and plants. The key will be no custom programming to achieve this capability (as this is not maintainable), but implemented only with configuration that enables reusable standards or templates to be built and applied over many plants/systems. However, as they are applied, each plant's uniqueness is enabled and combined with this capability; customers will expect expertise in systems and domain knowledge to accelerate success. This will drive customers to build partnerships with vendors that provide a mixture of product capability and expertise, flexible in their ability to change with the customer and allow the customer to maintain agility.
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Invensys Operations Management is uniquely positioned to evolve into this new class of vendor with:

- The only real “peer-to-peer” Software Platform for the Industrial Market that enables abstraction and integration across equipment and plants
- The ability to deliver valued applications, capturing internal Invensys expertise, as well as Eco System partner’s expertise into reusable natural applications/components that can provide very rich, powerful composite applications to run the platform
- The only system that supports the ability to build internal company standards or templates, support corporate governance policies and transverse the different levels in the Operations space
- An Eco System of expertise, which is made of small, medium, and large groups, who are coordinated in a unified way to best “morph” to a particular customer’s requirements locally while leveraging the advantages of a pooled global resource, right at their fingertips
- An industrial platform/foundation that unifies and provides the ability and confidence for companies to act with reduced fear or risk