Closing the Business-IT gap to open new opportunities in manufacturing
Leading global manufacturing organizations today are shifting their focus from optimizing and controlling each single manufacturing plant to an ability to harmonize, supervise, and coordinate execution activities across the whole company's manufacturing operations and suppliers as well. With an objective to gain greater level of real-time visibility across the network of global manufacturing operations as a way to guarantee the consistent quality and service, manufacturing companies of the future are creating a uniform and standardized environment for all plants globally. They are creating an "Operational architecture" that is a real-time, collaborative decision-making environment that leverages the emerging four IT pillars - cloud, mobility, social business, big data analytics. Leveraging this architecture, they would be able to orchestrate operational processes across the network of factories by having full visibility of plant performance, quality, and traceability, and the ability to analyse differences and identify best practices that should be applied across different plants.

-Pierfrancesco Manenti, Head of IDC Manufacturing Insights - Europe, Middle East & Africa at IDC

A company faces stock-outs across a range of products because it is unable to track and manage its warehouse replenishment process. Customers soon get annoyed at the non availability of goods in stores and switch brands, causing irreparable damage to the company. Why did stock outs occur? Because the planning and scheduling of jobs in manufacturing was done manually, resulting in a gap between when events actually occurred in production at a plant and when they were visible or actionable in the enterprise system. The end result – loss of customer loyalty and business opportunities. Unfortunately, this lack of Plant to Enterprise connectivity is not the story of one single enterprise, but an issue that plagues the manufacturing industry at large. Achieving Plant to Enterprise (P2E) connectivity is not merely about adding an IT middleware layer but rather the transformation of manufacturing business processes to facilitate real time decision making and help companies move into a new phase of growth with agility.

Poised on the cusp of new opportunities such as reshoring and adoption of next-generation technologies while facing the internal challenges of an ageing workforce and rising costs of maintaining legacy applications, manufacturing companies are increasingly feeling the need for a more connected enterprise – one that narrows the existing gap in business systems that run financials, supply chain and warehouse management and plant information systems that control and manage production.
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More than a third of American manufacturing companies with annual sales above $1 billion have said they are planning or actively considering shifting production facilities from China to America. There are several factors that businesses will have to carefully consider as they determine the cost versus benefit of reshoring; important ones being the state of their Plant IT infrastructure, process standardization and integration of applications across plant sites. Unfortunately, having acted independent of the business for years now, plants have developed local, legacy applications that best suit their individual needs. The result is monolithic infrastructures that are neither flexible nor scalable, with Plant IT emerging into one of the biggest hindrances to growth.

From an internal perspective, the obsolescence of legacy applications on the shop floor is already spelling the death knell for most manufacturing businesses with high maintenance expenses that render Plant IT support costs unsustainable. Compounding the issue is an ageing workforce—according to U.S. Department of Labor Bureau statistics, the average U.S. manufacturing worker’s age is now 50 years and half of the U.S. manufacturing workforce is 10 to 15 years away from retirement. Companies must plan for a mass exodus of workers who will take with them years of knowledge and expertise gained in managing and maintaining legacy applications.

In a shrinking global market, where decisions to manufacture are governed by the cost competitiveness of locations and increasingly based on customer pull rather than a traditional push approach, organizations need a more agile Plant IT infrastructure. Stringent regulatory compliance checks covering everything from environment to health and safety to energy management dictate the need for a more uniform and responsive Plant IT platform. What’s more, there is an urgency to respond to changing customer preferences, facilitate faster New Product Introduction and synchronize Global Product Launches—all of which necessitates the adoption of innovative technologies such as Big Data Analytics, Mobility and Social Networking/Collaboration.

Simply ripping out old technology and replacing it with the new is not what the transformation sweeping across today’s manufacturing landscape translates to. While that in itself is no mean task, it first calls for an internal transformation of the way manufacturing businesses have been run—from a previously plant centric model to a more integrated enterprise model—and building true Plant to Enterprise (P2E) connectivity.
Tighter integration of production and business models (P2E connectivity) for real-time decision support

Tighter integration between business and plant floor applications helps iron out chinks in supply chain synchronization that can otherwise wreck havoc on the brand and reputation of a business. Indeed studies show up to 50% of the potential benefits may remain untapped if enterprise and production systems are left disconnected.

P2E connectivity that enables real-time visibility into shop-floor operations at the enterprise level allows businesses to make more informed decisions - realigning strategies where necessary to ensure the outcomes meet changing on-ground events – thereby improving the entire production process.

Unfortunately, the current level of standardization that manufacturing companies achieved with the wide scale deployment of ERP solutions - improving business process harmonization and optimizing support and maintenance costs - has left gaps between the boardroom and the shop floor. The situation is further exacerbated by non standard processes across plant sites which make integration with the business even more complex.

To bridge these gaps and achieve closer alignment between the enterprise and production, organizations are increasingly deploying a common Manufacturing IT Platform. Towards this, plants need to first standardize processes across their various sites and then ensure a standards based integration and data exchange interface between business and shop floor IT and control systems.

The transition to a connected enterprise commences with implementing a comprehensive framework that streamlines and synchronizes processes across all plants as well as facilitates efficient vertical integration from the top floor to the shop floor. Such a Manufacturing Operations Transformation (MOT) framework leverages existing shop floor applications and works with the people, platform and processes in the manufacturing chain to make operations faster, better and smarter.
Creating a shared service model for Plant IT support

The MOT framework extends beyond managing the standard MES template and multisite deployment of Manufacturing Operations Management (MOM) solutions. It helps enterprises formulate the strategy and leverage an efficient model for Plant IT support. MOT allows plants to standardize processes while also identifying areas for global synergies – leveraging IT expertise found in one location across sites. The result is the creation of a shared service model between plants that helps the business to not only aggregate global best practices but also reduce the Total Cost of Ownership including maintenance and support costs.

Such a model proves beneficial not just from an operational point of view but also from an analytical and regulatory perspective. Given the increasing number of government regulations and regulatory guidelines plants have to adhere to, a central knowledge repository will help businesses automate their regulatory compliance efforts and generate due diligence reports without manual intervention.

MOT: A direct impact on the bottom line

With a MOT framework enabling the smooth undertaking of MOM programs and tighter integration with supply chain management, organizations can now focus on inventory turn and return on assets as well as capital employed- key factors that affect the balance sheet of any manufacturing business. Additionally, the reduced manual intervention, improved work flow, reduced inventory and lead-times made possible with the MOT framework, all contribute to higher plant efficiency and a net positive impact on the bottom line.

As enterprises increasingly feel compelled to forge closer ties with their plants in today’s business environment, they will require the expertise and experience of a global service provider (GSP) to effectively support them. Given that most MOT programs are multi-year, multi-site projects with huge costs, complexities, risks and strict timelines riding on them, global System Integrators have the proven architecture, design and people to effectively manage the organization’s change and risk management strategies. Leveraging their existing tools and templates, proven methodologies and global support, GSPs can provide a well-defined road map and, indeed, offer a jump start to achieving success in such programs.
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- Realized product strategy from conception to retirement
- Enhanced market share and customer’s return on investment (ROI)
- Reduced Total Cost of Ownership (TCO)
- Enhanced visibility of manufacturing operations and availability of assets

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