

Global Enterprises Need MOM

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Keywords

Manufacturing Operations Management, MOM, Manufacturing Execution Systems, MES, Global Services Provider, Tata Consultancy Services, TCS

Summary

Businesses with operations that extend globally face intense competitive pressure from other global enterprises. To remain competitive, they must optimize their operations and extended supply chains including suppliers,

Mobile, cloud, social, and analytics technologies enable organizations to improve and transform their business processes and adopt new business models. Global businesses have found that partnering with a service provider can bring diverse technical skills, program management, and experience managing transformational initiatives.

plants, and distribution centers. Emerging technologies for mobility, cloud, analytics, and social networking provide opportunities for organizations to both improve and transform their business processes and adopt new business models. Many global businesses have found that partnering with a service provider brings the needed diverse technical skills, project management, and experience managing transformational initiatives.

Globalization Brings Intense Competition

With the Internet and today's wide-ranging supply chains, global companies can extend their reach to wherever opportunities present themselves around the world. However, this also applies to their competitors. No longer is it enough for a company to be a leader in a local, sheltered market with high margins and profitability. The global market brings global competition and survival demands moving beyond a local sanctuary.

Manufacturing Operations Management

To improve in an increasingly complex, competitive environment, manufacturing IT managers have taken an increasingly global perspective despite sites governed by complex hierarchies, regions, business units, and operating structures. Manufacturing operations management (MOM) in-



cludes the management of the people, business processes, and assets to meet customer demand while providing shareholder value. MOM includes the core manufacturing execution system (MES), and integrates with business systems, engineering systems, and maintenance systems both within and across multiple plants and enterprises.

MOM fosters enterprise-wide collaboration, creates electronically driven workflows, and ensures focus on core manufacturing operations. MOM systems play a key role in monitoring, tracking, managing, and reporting for compliance requirements and carbon emissions. MOM allows manufacturers to respond to this increasing complexity with a global perspective, helping them control and manage their enterprise more effectively, leading to improved flexibility, inventory, time-to-market, customer satisfaction, sharing of best practices, and business process optimization. MOM offers the opportunity to efficiently execute a production plan across multiple sites and geographies.

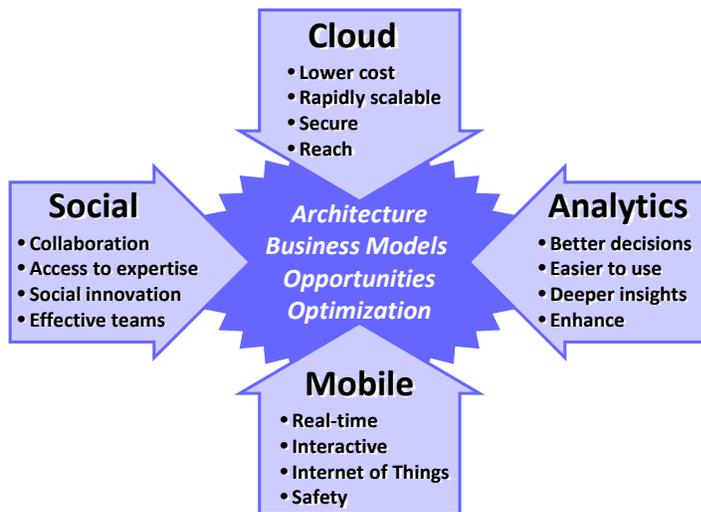
Global Operating Excellence Needs MOM Adoption

A global presence often evolves over time with a variety approaches including satellite plants, joint ventures, mergers, and acquisitions. These changes result in a fragmented IT landscape that undermines economies of scale. Typically, the management for a specific plant is familiar with its operations and has optimized its resources locally. This includes unique business processes invented for a particular set of issues and technologies that existed at a past point in time. Each business unit has business processes that often vary across shifts, production lines, and sites. Across several sites, it's not unusual to find multiple independently created and inconsistent processes - often for essentially the same business process. This duplication thwarts economies of scale and sharing of best practices.

Transformation Enabled with Technology

The intense competitive pressures brought on by globalization drives transformational initiatives across business units. A transformational initiative provides major improvements in business processes along the significant value streams of a company, such as order-to-cash and new product introduction. The change affects business performance with benefits that roll-up into the P&L statement and balance sheet. A key enabler of a transformational initiative often involves technology adoption. Today, cloud, mobile,

analytics, and social technologies are helping to connect previously isolated processes.



Transformational Technologies Impacting Business Processes and MOM

These new technologies – cloud, mobile, social, and analytics – enable new opportunities for organizations to reengineer and optimize their business processes. They can be transformational in that they offer new processes and business models. Also, analytics for structured and unstructured data provides visibility and predictive analytics. A MOM program across multiple sites allows the business units to adapt before being crushed by a competitor.

Resources for MOM Implementation

Leveraging the four transformative technologies has a major impact on IT strategy and resources. For each of these technologies, implementation brings the need for a range of specific IT skills. Also, the current difficult economic conditions have created a low tolerance for poor results or failure. Where can organizations find capable help? The business model of global service providers maps well with the needs of IT during this surge in application development and deployment activity.

The confluence of four transformative technologies involves more than a few specific skillsets. A MOM program has many moving parts and an experienced service provider can help mitigate some of the risk to help assure success. The benefits of engaging a global service provider include:

- **Specific skills when needed:** Access to a variety of IT skills and levels of experience time-sequenced consistent with the needs of a complex project implementation
- **Faster time-to-benefit:** Avoid delays associated with identifying candidates, hiring and on-boarding

- **Flexibility:** Staffing level scale-up and ramp-down rapidly based on project needs and/or changing budget constraints
- **Frameworks, accelerators, and tools for MOM:** Through experience with a variety of clients, the GSP develops repeatable solutions
- **Mitigate project risk:** With experienced architecture and design people for the specific applications and business processes, GSPs can help mitigate risks, particularly for large programs or projects

Case Study – Cummins Inc.

Global engine manufacturer, Cummins Inc., has complementary business units that design, manufacture, distribute, and service engines and related technologies. Engine manufacturing has complexity with many sizes, options, parts, and an extended supply chain. Engines represent the core of Cummins, and its success depends on producing a wide variety on time, at low cost, and with high quality. To achieve high operational performance, most plants have an assembly management or manufacturing execution system. Each plant independently designed and implemented its solution. The variety of solutions and technologies resulted in a support nightmare and created a challenge to integrate with corporate systems.

*"Our Engine business delivered record sales and profits."
"Warranty costs as a percent of sales in 2011 were the lowest in 15 years."*

Tom Linebarger, Chairman and CEO,
Cummins Inc.
2011 Annual Report Chairman's Letter

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Services Partner with Global Reach

Prior to its global MOM implementation, Cummins had several issues converge for its existing MES applications. The company recognized that the wide variety of custom implementations in place in its many plants represented an unsustainable situation. Managing diverse applications globally from the corporate manufacturing IT group introduced difficulties relative to distance, time zones, and technology variations. Also, attempting to integrate different MESs with corporate systems often resulted in a fragile solutions and presented additional hurdles for software upgrades.

Cummins needed a modern, adaptable MES/MOM platform and a strategic services partner that could support business transformation with a global rollout. Cummins selected Tata Consultancy Services (TCS) as a services partner. Cummins and TCS implemented the MES solution in six

plants in 2011, with ten more planned for 2012. The rollout will ramp up with the expectation that the company will ultimately upgrade 80 plants. Cummins has improved visibility; quality; and demand-driven, pull-type manufacturing. The improved workflow dramatically reduced inventory and lead-times with a major improvement the in “order to cash” business process.

Conclusion

New technologies offer an opportunity for transformational change in business process optimization and operational performance. As demonstrated in the Cummins implementation, a service provider with a proven MOM practice, such as TCS, can bring diverse technical skills, program management, and experience managing transformational initiatives.

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