

Perspective



Using Metrics To Improve Product Supply Capabilities

An Infosys Perspective

Overview

Intermeshing. Volatility. Visibility. Disruption. Complexity. Agility. Risk. As the supply chain grows new links to fulfil the demands of an interconnected global marketplace, these words have come to dominate the thinking of manufacturing organizations.

Globalization, outsourcing, and geographically dispersed operations are playing a pivotal role in manufacturing, enhancing efficiencies and cost savings while fattening margins. However, these benefits come with a greater risk exposure. Today's supply chains are so intricately interwoven that even a minor problem can trigger a chain-reaction crippling operations across organizations and geographies. On the other side of the manufacturing process lie the demanding and discerning customers who are more than willing to take their business to the competition if their ever-increasing, ever-changing expectations are not met.

Walking the tightrope of a fragile supply chain driven by customers, manufacturing organizations require agility to succeed. They must move quickly to make the dynamic decisions needed to attain manufacturing efficiency, retain and gain customers and improve revenues in a chaotic and competitive marketplace.

This agility can only come by using composite manufacturing metrics that are measured, captured and analyzed in totality through manufacturing supply chain intelligence systems. This performance management offers organizations end-to-end visibility into their supply chain and enables effective decision-making. Thus empowered, the manufacturer can better support upstream and downstream activities with suppliers, vendors, employees and customers leading to improved top- and bottom-line performance.

AMR Research study in Collaboration with Infosys

AMR Research in collaboration with Infosys conducted 75 web-based interviews of process manufacturing executives in March 2010 to glean insight into their perspective on the process manufacturing sector, its supply chain, its weak links and strengths, challenges and the way forward.

The research survey included 26 EMEA and 38 US-based firms (and one from an unclassified region) in industrial and specialty chemical industries - metals, pulp and paper, and industrial chemicals, and branded specialty chemicals and performance materials. The survey revealed key findings on business strategy drivers, pain points and challenges, performance gaps, manufacturing capabilities, metrics usage, technology approaches and IT decision-making.

Post recession, as manufacturing organizations climb out of the economic abyss, leveraging the advantage of a robust supply chain can help them garner growth quickly. The survey findings can hopefully empower the organizations to take proactive steps to build agile operations with a strong supply chain that links up to the opportunities the global marketplace offers.

The executive summary is based on the AMR Research, the viewpoints of Infosys experts and our industry interactions in the field.

Agility is Essential, Metrics the Key

Manufacturing agility is a fundamental imperative. With the complexity involved in running a manufacturing organization growing, operations becoming unwieldy and the supply chain seeming opaque, the survey research and our industry experience show that manufacturers realize that agility is the key to sustainable success.

As many as 59% of the organizations surveyed state that customer demands are critical to their manufacturing business strategy. If the organizations are to take on the competition and succeed in an unpredictable market with demanding customers, they must be agile - optimizing performance and utilization of assets efficiently, anticipating trends astutely, adjusting the type of products supplied fluidly, and scaling up at will to deliver rapidly. Only then can they take advantage of new opportunities and increase their margins. Infosys feels that such decision-making calls for effective performance management - and hence metrics - covering operational, tactical and strategic hierarchy of the organization.

The Survey States...

Manufacturing companies have started investing in data visibility solutions in the supply chain area to get better control over operations. Most are using commercially available, off-the-shelf software to capture and measure manufacturing metrics. They are focusing on visibility into optimization and utilization of assets, implementing standard business processes, and improving design-to-manufacture processes to gain better visibility into operational performance and tradeoffs across multiple sites. Cross-geography organizations with higher degrees of complexity in their networks have clearly defined their goals to achieve this. Interestingly, only 54% of these organizations place importance on capacity utilization while aiming for increased agility. From our domain experience it is clear that deploying an appropriate supply chain system that can help collate, measure, and analyze metrics to yield actionable manufacturing intelligence becomes a prerequisite. In the survey, most organizations express that increased

From our domain experience it is clear that deploying an appropriate supply chain system that can help collate, measure, and analyze metrics to yield actionable manufacturing intelligence becomes a prerequisite. In the survey, most organizations express that increased usage of metrics will impact immediate performance gaps in yields (59%) and quality (48%), as well as schedule adherence (49%) - all vital manufacturing metrics. Specialty process manufacturers expect a higher increase in use of metrics compared to industrial manufacturers.

However, while metrics are a key enabler in conferring agility, a collection of disjointed numbers viewed in isolation may not help overall operations. Our industry experience demonstrates that the metrics must be tied in across business functions so that organizations gain a holistic view of the supply chain dynamics and customer demands and can make adjustments to the manufacturing operation accordingly. The organizations require easy-to-use and intuitive dashboards, which can lead to direct determination of actions required. However, Infosys feels that there seems to be a critical lack of decision support coming from the metrics being measured and managed. We feel that organizations need to look out for ways to facilitate role based infrastructure thereby making the insights gained actionable. There is a need for a system that pervasively delivers actionable insights.

From our client interactions we see that what organizations need is a supply chain intelligence system that allows them to examine each individual metric and then fit the jigsaw pieces of the metrics into a complete picture. Only then can a manufacturer respond to the needs of the marketplace with agility.

This brings us to the next major finding of the research.

Demand Forecasting and Pipeline Visibility are Critical

The answer to the quest for growth is simple for any organization: Make your customer happy by meeting promises and fulfilling needs and you will increase your sales and margins. However, this is easier said than done.

To fulfil customer needs, organizations must truly understand their customers and to do that, they require greater visibility into the demand patterns. Demand sensing and forecasting is therefore essential, enabling organizations to synergize production with demand, engage in product innovation and ramp up production.

Our industry experience shows that the problem most manufacturing organizations face is that much of the intelligence is disconnected from demand and the production operations. The survey demonstrates that only 25% respondents can sense and respond to demand changes in 2 weeks or less. Moreover, the ability to aggregate and synthesize data remains limited. With the demand side, supply side and manufacturing operations operating in virtual silos, there is limited collaboration on demand fluctuations at the plant level, thus robbing manufacturing organizations of critical market-beating agility.

It is significant that most manufacturers are deploying commercially available, off-the-shelf product like MS Office (59%), ERP (41%) and quality management systems and standalone BI (33%) software to capture and display manufacturing information and metrics as seen in the survey. These systems are better at offering metrics relating to the transaction side of the business. Most supply chain data visibility and decision-making tools use master data from execution systems like ERPs. These execution systems work efficiently when the quality of master data is low. However, data visibility and decisionmaking systems require very high quality master data for efficient operation, something execution systems are unable to support.

The result? Manufacturers simply do not have visibility into demand and most implementations are unable to derive full benefits because of this gap. Thus, as our industry experience shows, the data available is not leveraged into useful information to drive decisions and there are significant challenges with the quality of data and the ability to consolidate the information across the various systems. Moreover, the capacity utilization of supply networks is not optimal due to poor visibility into operational metrics.

Our client interactions establish that manufacturing metrics which have traditionally taken a back seat vis-a-vis financial and order fulfilment metrics are extremely important in driving competitive advantage. These metrics are even more pertinent today when manufacturing organizations are distributed across sites and in terms of processes and engage contract manufacturing.

However, some manufacturing intelligence applications may not meet the requirements of operations - that of having visibility into the entire pipeline to gain agility. Infosys feels that for the manufacturers to reap optimal value out of increased use of metrics in the manufacturing intelligence space is to tightly integrate it with demand and forecast planning. This will help measure overall supply chain performance and allow better visibility into the pipeline.

Conclusion

As manufacturing organizations strive to become agile by improving customer experience and satisfying customer demands, they must ensure end-to-end visibility into the pipeline by addressing cross-functional integration issues. Thus, their IT systems need to power manufacturing metrics with demand and forecast planning. Infosys believes that what is required is a manufacturing intelligence system that links manufacturing metrics to the supply chain and customers to provide a foundation of visibility into operations.



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