

# THE SMARTER SUPPLY CHAIN OF THE FUTURE

GLOBAL CHIEF SUPPLY CHAIN OFFICER STUDY



METALS AND MINING EDITION



## INTRODUCTION

Today's "new metals economy" is mostly characterized by upheaval in the traditional supplier/producer/customer landscape. Globalization and economic challenges are driving most external shifts. According to the 2009 IBM Global Chief Supply Chain Officer Study, an overwhelming 82 percent of metals and mining (M&M) companies believe that aggressive global competition is impacting their supply chains.<sup>1</sup>

Emerging markets now drive a larger percentage of global growth, while advanced steel economies in the United States and Europe are contracting. These rapidly developing M&M markets present new revenue opportunities, but also represent new competition. Recent marketplace volatility has further pushed advanced economies toward recession. Annual growth in steel, up more than 45 percent over the last ten years, has slowed in 2008, as industries buying steel are affected by tightening credit.<sup>2</sup>

In the past, most metals companies viewed their operations in terms of moving volumes of product through the supply chain and delivering to customers at completion. The emphasis was on maximizing capacity utilization and reducing costs at each phase of the supply chain. To deal with volatile markets, M&M companies have relied on traditional levers, such as idling capacity, drawing down inventories, leveraging low freight costs and examining divestiture opportunities.

## TIME FOR A NEW RESPONSE

The future calls for bolder moves, both strategically and tactically, and for most, a reinvention of how M&M companies view their core businesses. To address this industry shift, M&M companies will need a different kind of supply chain – one that is much smarter. By this, we mean a supply chain that is far more:



### **INSTRUMENTED**

Using sensors and “smart” devices to gain greater visibility, mitigate risk, reduce cost and manage rising complexity.



### **INTERCONNECTED**

Integrating the entire supply chain to better intercept demand signals, manage risk in realtime, make decisions collaboratively and share information, not just between people, but with products and smart objects across the supply chain network.



### **INTELLIGENT**

Relying more on advanced analytics, simulation and modeling to evaluate increasing complexity, dynamic risks and constraints and manage the entire supply chain more scientifically.

Today's focus on value involves a difficult transition – doing more with less, optimizing resources and building business flexibility. The smarter supply chain presents M&M executives with a tremendous opportunity: a pathway to the business of the future.



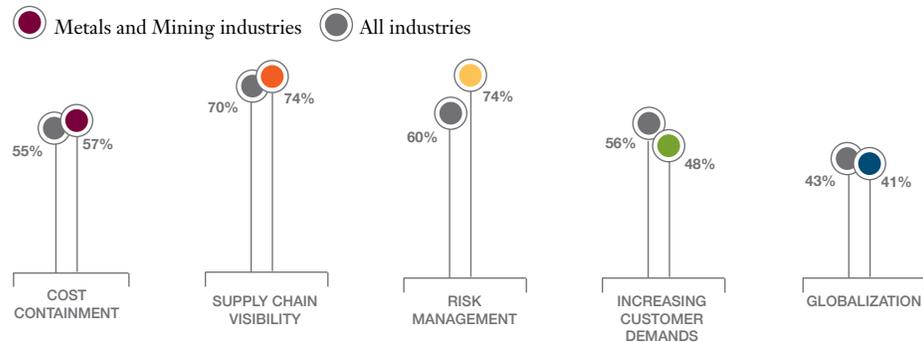
# THE TOP FIVE PRIORITIES

## THE TOP PRIORITIES FOR METALS AND MINING SUPPLY CHAIN EXECUTIVES

The 2009 IBM Chief Supply Chain Officer study was conducted through in-depth interviews with nearly 400 supply chain leaders around the globe, including major metals and mining companies. Through this study, we learned about the top issues and business drivers affecting supply chain leaders today. The most important challenges identified by M&M respondents were supply chain visibility, customer demands, cost containment, risk and globalization.

**FIGURE 1 TOP SUPPLY CHAIN PRIORITIES FOR M&M – A COMPARISON TO ALL INDUSTRIES**

Percentage who report this challenge impacts their supply chains to a significant or very significant extent.





## Cost containment

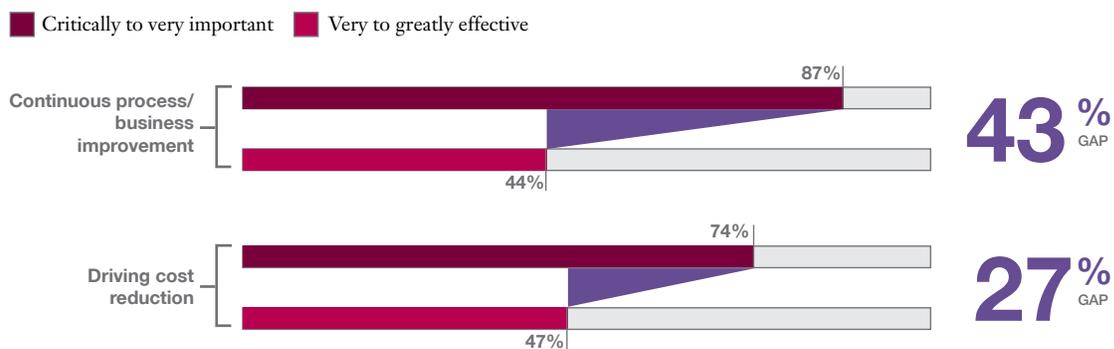
Cost containment is a critical aspect of the role of supply chain executive. Seventy-four percent of metals and mining respondents position support of growth initiatives as their primary task, with cost control as a close second. Almost three-fourths of M&M executives positioned their supply chains as critical to cost containment for their overall businesses.

How well are they managing costs? Their responses indicate a 27 percent gap between the importance they place on cost reduction and their effectiveness at reducing costs. To control costs, companies often turn to continuous improvement practices. However, M&M executives identified a significant difference between the importance of continuous improvement and their effectiveness at highlighting areas for improvement across the supply chain (see Figure 2).

.....  
“Increasing supply chain efficiency and decreasing total cost is the key to a competitive supply chain.”  
.....

*Vice President of Supply Chain,  
Chinese steel company*  
.....

**FIGURE 2 M&M SUPPLY CHAINS HAVE COST CONTAINMENT GAPS**  
The difference between importance and effectiveness of their best practices.



Some practices associated with cost containment – such as formal distribution strategies or working with third-party logistics companies – are common among M&M companies. But when compared to top supply chains across industries, M&M companies are less likely to utilize other tools like exception-based management or network optimization and simulation.<sup>3</sup> And when they do implement these capabilities, less than half of M&M companies are extremely effective at using them. Other examples of opportunities not exploited to their full extent are purchasing outsourcing and reverse logistics. And although often outsourced, transportation and export management efforts have been less than effective, representing other areas for further cost savings.

M&M companies know controlling costs is at the heart of their businesses and have focused their attention on this one topic, sometimes overlooking other important performance drivers. With this hawkish focus on costs, it is surprising to note how often shop-floor scheduling processes and technologies lack end-to-end integration from melt shop to finishing lines.

Looking forward, smarter cost reduction activities will focus on more than just reducing expenditures; they will simultaneously build more value into the supply chain and enable companies to be more flexible and agile in their operations.



## Supply chain visibility

Three out of four metals and mining supply chain executives cite visibility as their top challenge. Supply chain visibility is the ability to “see,” via information and collaboration, supply chain activity and recognize the need to react both internally, as well as through the extended network of suppliers and customers. Good visibility enables M&M companies to coordinate activities across the supply chain, improve efficiency and respond more quickly to supplier, market and customer events.

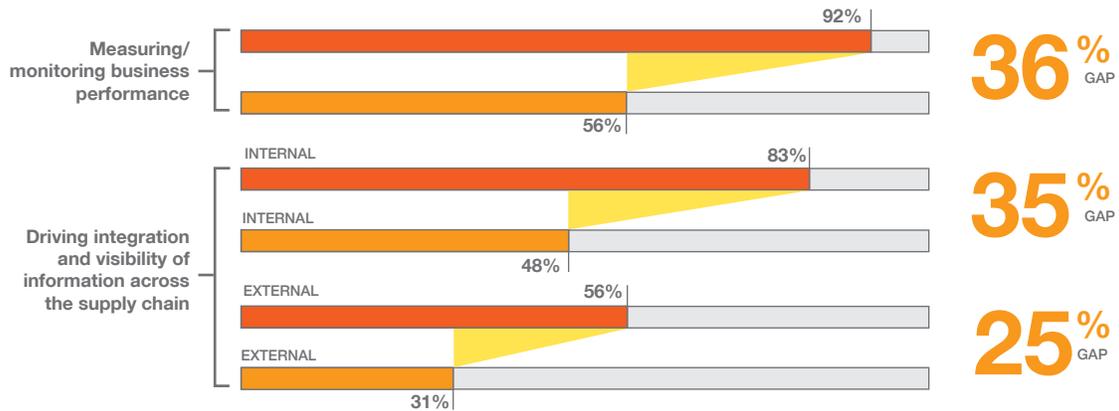
Visibility is inhibited when people are not adequately incented to collaborate, either by business measures or availability of tools. According to our study, the most significant inhibitors to collaboration for M&M companies are “Individuals are too busy” (78 percent) and “Performance measures are not aligned to reward collaboration” (77 percent). These represent both procedural and cultural issues, and likely indicate a siloed focus of supply chain practitioners who are measured only on their immediate jobs rather than holistic considerations of the supply chain.

When asked how effective they are at measuring and monitoring business performance – a critical precursor to decision making – M&M companies rated their effectiveness at only 56 percent (see Figure 3). Less than half of M&M companies have effectively implemented information visibility inside their companies, and only one-third have done so outside their companies; a full one-third have not adopted information transparency at all.

**FIGURE 3 M&M SUPPLY CHAINS ALSO HAVE VISIBILITY GAPS**

The difference between importance and effectiveness of their best practices.

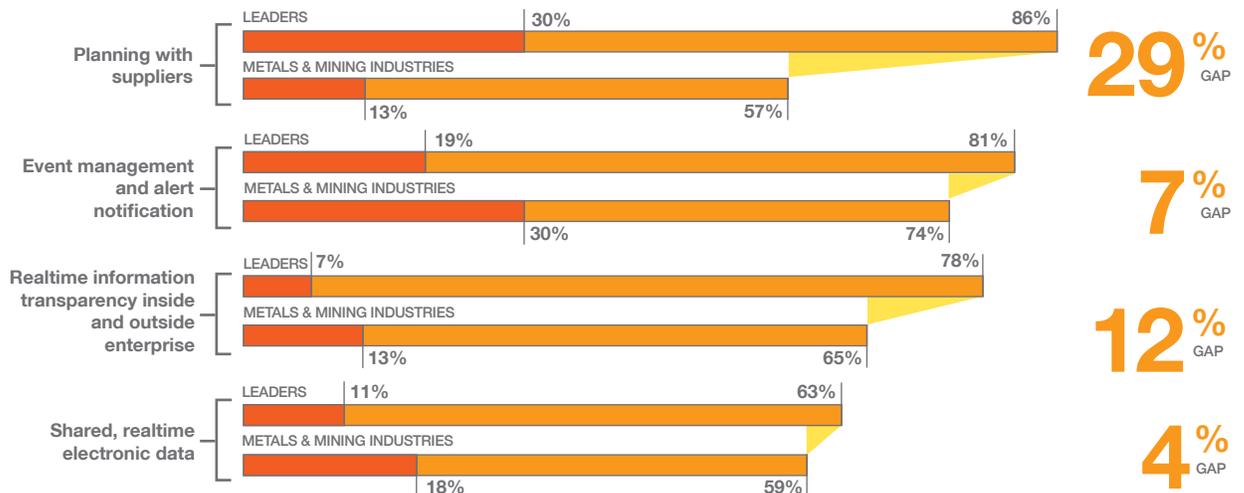
■ Critically to very important   ■ Very to greatly effective



Among common visibility-oriented capabilities, M&M companies trail the top supply chains across industries (see Figure 4). In some cases, these gaps represent a shortcoming in capability; others reflect attributes of the metals and mining industries.

**FIGURE 4 M&M INDUSTRIES TRAIL TOP SUPPLY CHAINS IN THE IMPLEMENTATION OF INTEGRATION PRACTICES**

■ Very great extent   ■ Some extent





## Risk management

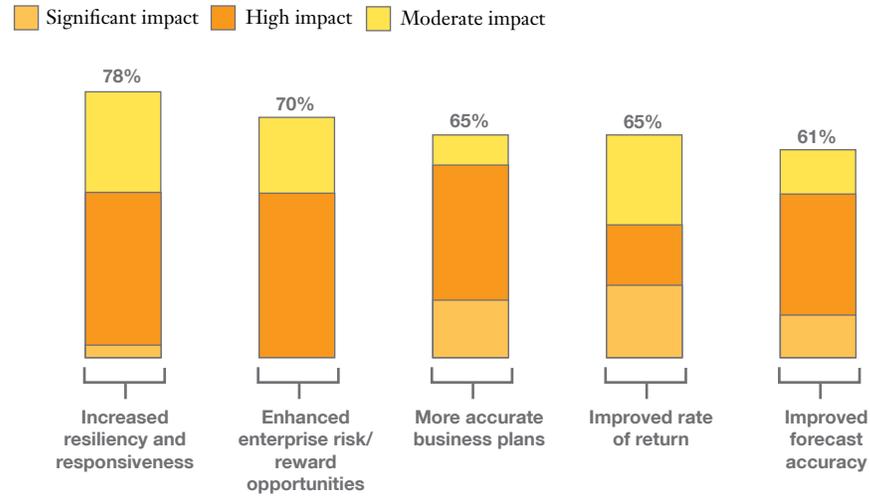
Tied with visibility, managing risk is an important challenge for metals and mining companies. Risk events can take a variety of forms, including economic, credit, supply chain disruption, employee, price, environmental and many others.

The more extensively companies emphasize risk management practices in their strategies, the more they understand the benefits. In our survey, no M&M company has widely implemented risk sharing across its network, as compared to 26 percent of top supply chains. With supplier links in M&M less critical than in other industries, this industry's primary opportunities lie in risk integration and compliance with customers, logistics partners and event monitoring.

There are multiple reasons companies are struggling to manage risk. Half of M&M companies identified lack of standardized information as the number one barrier hindering their ability to monitor and react to risks, followed by lack of standard processes and technologies. Only 24 percent of M&M companies have included risk indicators in their formal performance monitoring.

Increased responsiveness topped the list of benefits of good risk management, with 78 percent of respondents saying it has a significant to moderate impact (see Figure 5). Enhanced risk/reward opportunities was a close second at 70 percent. When asked "How much impact would/does an enterprise risk mitigation strategy have on the following aspects of your business?", 65 percent of M&M executives believed that their business plans would be more accurate.

FIGURE 5 M&M COMPANIES BELIEVE RISK MITIGATION WOULD POSITIVELY IMPACT THEIR BUSINESSES



Further good news was that 60 percent were currently integrating process controls in logistics and operations, 56 percent were implementing compliance programs with suppliers and service providers and 56 percent were incorporating risk strategies and mitigation policies in supply chain planning.

On the down side, not a single M&M respondent has reported wide adoption of risk sharing with their suppliers; instead they were concentrating all risk inside their own enterprises. These shortcomings can be viewed as important areas for improvement. Risk management, like new opportunity or performance management, should be viewed as an area that will improve as greater supply chain visibility is achieved.

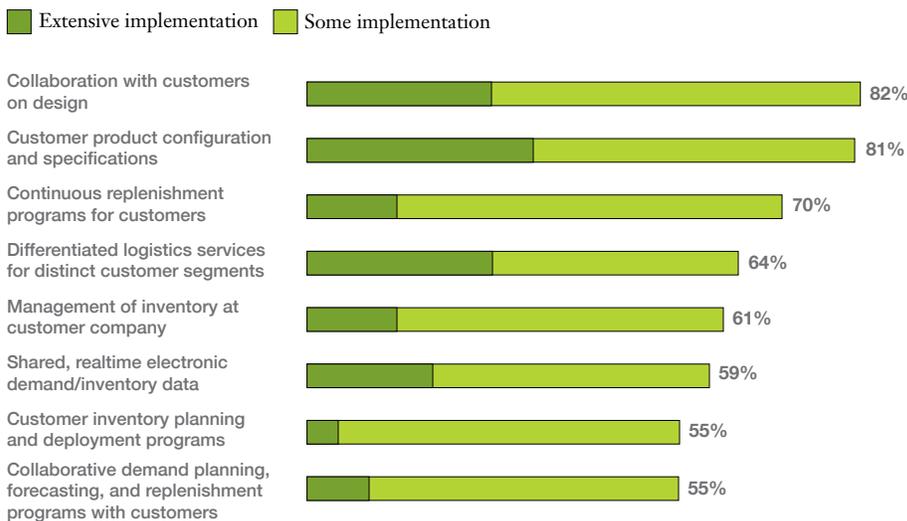


## Meeting customer demands

Rising customer demands in the new economy require a renewed effort toward increasing customer focus in the supply chain. Forty-eight percent of metals and mining supply chain executives cited rising customer demands as a top challenge. Compared to other industries, M&M companies are more likely to work with their customers on product design or configuration (see Figure 6). M&M companies are less likely, however, to collaborate with customers on demand planning, forecasting and replenishment programs. This suggests that M&M companies have an opportunity to improve the value provided to the customer.

Our study indicates that most of the challenges M&M companies face will ultimately require more intensive interaction and collaboration with customers. When they do undertake product innovation practices and supply chain planning with their customers, M&M companies consistently experience overwhelming effectiveness in meeting strategic goals.

**FIGURE 6 M&M COMPANIES HAVE AN OPPORTUNITY INCREASE THEIR USE OF PRODUCT INNOVATION PRACTICES TO IMPROVE THEIR ABILITY TO MEET CUSTOMER DEMANDS**



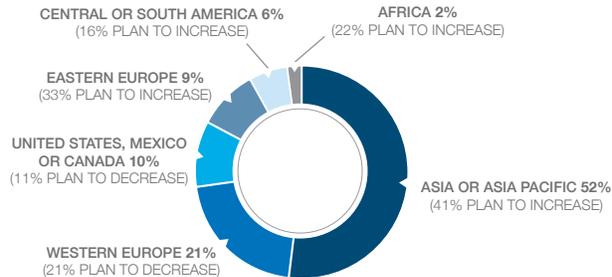
.....  
 “Building collaboration with global suppliers on a long-term sustainable basis is one of our key initiatives.”  
 Director, Supply chain management,  
 Indian steel company  
 .....

## Globalization

Given the growing interdependence among economies worldwide, it’s no surprise globalization ranks as a top supply chain challenge. Metals and mining have embraced these changes more quickly than some industries, more widely sourcing in lower-cost countries than our overall industry sample.

However, global sourcing has led to many issues that companies encounter, including unreliable delivery (65 percent), longer lead times (65 percent) and issues with new sources (60 percent), with an additional 22 percent of respondents, on average, anticipating increased problems within the next three years. These challenges in delivery and quality are reflected in sourcing priorities. M&M companies are primarily focused on total cost when working with suppliers, less so on the suppliers’ delivery or overall capabilities. A more holistic supplier relationship strategy may create an opportunity for improvement.

**FIGURE 7 HALF ALREADY SOURCE FROM ASIA/ASIA PACIFIC – OVER THE NEXT THREE YEARS, M&M COMPANIES PLAN TO FURTHER INCREASE SOURCING FROM DEVELOPING COUNTRIES**



Top supply chains report less pain and more extreme gains from globalization over the past three years, indicating that the financial advantages of globalizing markets and operations clearly outweigh the negatives. Leaders tend to excel in the critical areas of cost containment and overall supply chain performance.

M&M companies track closely with top supply chains in implementing most of the globally oriented practices covered by the survey, only trailing by a few points or achieving parity on the others. Leaders and M&M companies had similar scores for direct global sourcing, low-cost country sourcing, global sourcing of indirect materials and using shared services for procurement. The largest divergence between top supply chains and M&M companies was in the use of supplier relationship management programs, with 93 percent of leaders versus 70 percent of M&M companies using them. When compared to other industries with more complex sourcing, such as electronics, M&M performs well in its ability to locate experienced and skilled intercountry suppliers.



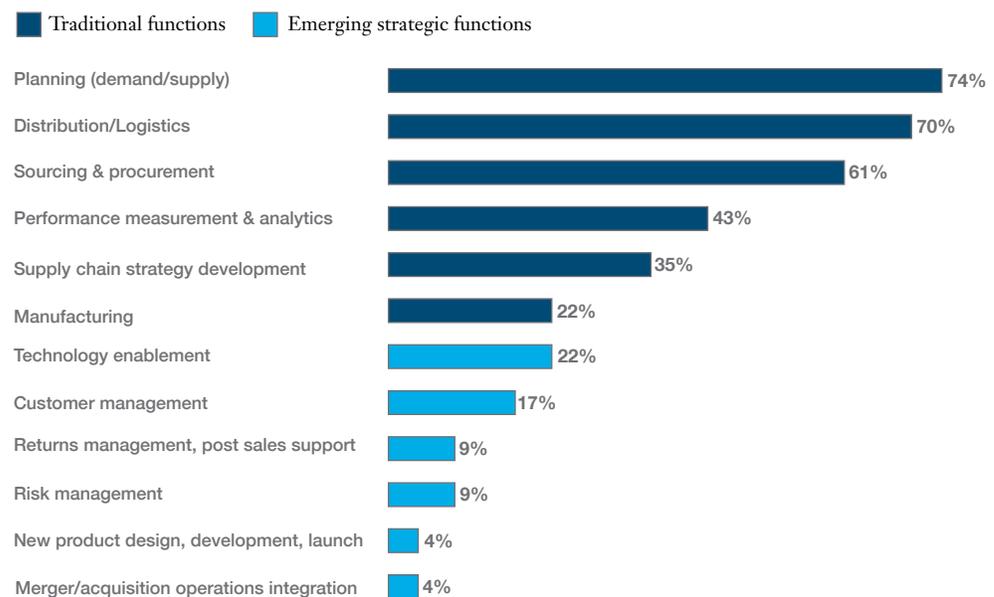
# THE EVOLVING ROLE

## THE EVOLVING ROLE OF THE CHIEF SUPPLY CHAIN OFFICER

The Global Chief Supply Chain Officer Study findings point to an evolving role of supply chain leadership in managing these five challenges. Across industries, the traditional supply chain roles of distribution and logistics, planning and sourcing/procurement are still primary responsibilities.

However, fewer M&M supply chain executives have an increased span-of-control including technology enablement, risk management, and customer management. These represent the emerging strategic functions that relate to many of the key supply chain challenges identified in our study. As supply chain executives address their new challenges, these nontraditional functions will likely rise in importance.

**FIGURE 8 EMERGING RESPONSIBILITIES DIRECTLY CORRELATE TO M&M TOP CHALLENGES.**



Customer management has indeed become part of the Chief Supply Chain Officer role. As supply chain executives look to extend their value in the enterprise and to customers via collaboration and improved performance, they will ultimately need to nurture customer relationships. The growing role of technology enablement may point to new efforts in integrating “top floor to shop floor” and with business partners and customers. These new capabilities provide supply chain executives with the ability to achieve supply chain visibility while, at the same time, mitigating risks.

Obviously, these new responsibilities and skills will be required not just of Chief Supply Chain Officers, but of their leadership, managers and team. Unfortunately, developing people is one of the steepest challenges noted in the supply chain study. Eighty-seven percent of M&M executives cited “building leadership talent” as the number one challenge in improving their supply chain capabilities. This need, coupled with a startling 53 percent capability gap between the importance of developing people and companies’ effectiveness, raises skill development to the top of the Chief Supply Chain Officer’s priority list.

For most M&M executives, there is a very pronounced perception gap in what they believe is important, and their ability to address it effectively. This should inspire supply chain executives to take on a new leadership role in the orchestration of all supply chain resources and connecting with other leaders and groups inside and outside of the company. This expanded role will require new competencies for the supply chain leader and his team, and new capabilities for the operation and enterprise as a whole.



# THE SMARTER SUPPLY CHAIN

## THE SMARTER SUPPLY CHAIN

Metals and mining supply chain executives are adopting a new supply chain vision built around understanding their customers' needs, developing flexibility and agility and reducing risk and costs. To resist a traditional, incremental approach, M&M leaders should instead seek changes that incorporate a broader, interconnected view of the entire supply chain.



## COST CONTAINMENT IN THE SMARTER SUPPLY CHAIN

To reduce cost and increase agility, metals and mining companies need manufacturing discipline that enables them to focus on maximizing overall throughput and profitability.

Mastering planning and scheduling to drive the execution of production orders in the most cost-efficient way allows a company to react to manufacturing variability and changing business conditions. Tools with global, forward-looking visibility interconnect silo-based operations to highlight potential problems. Extending the scheduling horizon from hours to days or even weeks creates a detailed view of potential problems that could be avoided if known in advance. And using sense-and-respond demand and supply signal notification provides exception-based management of the supply chain.

Japanese steelmakers, such as Nippon Steel and JFE for example, have focused on integrated shop-floor scheduling from melt-shop to finishing lines over the past ten years to achieve these goals.<sup>4</sup> In order to improve reliability and flexibility, they designed processes and systems to deal with the often-perceived inflexibility of steelmaking. They combined end-to-end scheduling capability with materials design and continuous many-to-many inventory allocation. This gives the steelmaker many more angles to deal with demand complexities and production constraints.

In the mining industry, these challenges are often more pronounced. Mining operations, processing and transportation are often within different divisions of a company or business unit, inhibiting integration and cross-value-chain planning. Some companies are now recognizing this and beginning to conceptualize end-to-end planning and control.

Mastering transportation and logistics is often underestimated as an opportunity in M&M supply chains. However, these areas can reduce cost and improve efficiency by optimizing the four key cornerstones: customer- or segment-specific service levels and costs to serve; the design of the logistics network; the sourcing of the services; and the load-balancing and scheduling of the transportation. Too often, these elements are not considered simultaneously, automated nor optimized, leading to excessive costs or extended lead times.

The logistics management teams are often not represented in the overall Sales and Operations (S&OP) planning process, and transportation is considered an “unconstrained resource” at the back-end of the process. This creates situations in which logistic managers are “surprised” by last-minute requests to locate transportation resources. A multipartner collaborative platform for suppliers, customers and logistics providers that allows data synthesis and decision support is critical for success.

To reduce excess freight costs, logistics representatives should be fully represented in the S&OP process to obtain a total view of costs and plans. This helps companies plan ahead and take into account mid- to long-term considerations such as transport seasonality and network design to optimize their performance.



## VISIBILITY IN THE SMARTER SUPPLY CHAIN

As metals and mining supply chain visibility becomes even more challenging – and more critical – interconnectedness is fundamental. Maintaining visibility requires greater integration internally and externally.

Mastering supplier and customer relationships means designing the extended supply chain to support corporate strategic goals in evolving market conditions. A purposeful and formal approach to supply chain design, instead of allowing it to evolve into isolated silos, requires a vision and blueprint for how the supply chain should interact and interconnect among its participants and constituencies.

A key component of this newly designed supply chain is defining collaborative relationships with customers and suppliers across all dimensions of those relationships – design, forecasting, orders and fulfillment programs (e.g., vendor-managed inventory). Once created, these relationships can be extended with top performing suppliers and selected best practices and represented in enterprise resource planning (ERP) and manufacturing execution systems, with ERP-to-ERP connections across the network.

In a smarter supply chain, visibility and analysis extends deep from the manufacturing process instrumentation to advanced business intelligence, enabling adaptive process control, midcourse corrections and product design. Metals chemistry and material characteristics can, for example, be analyzed along with customer end-use data to aid in product design – at both the metals and customer companies.

To create more visibility and understanding of end-customer behavior and demand patterns, companies are extending the value chain. Some companies add value to traditional commodity products by offering services to their customers over and above the product itself. For example, ArcelorMittal with its Steel Solutions and Services group and other companies that deliver “construction solutions,” such as frames and structures, are offering value-added services related to otherwise commodity-based products.<sup>5</sup> These initiatives create both visibility and customer loyalty.

## Case study

### ARCELORMITTAL STEEL SOLUTIONS AND SERVICES GROUP HELPS MAINTAIN VISIBILITY AND CUSTOMER INTIMACY

ArcelorMittal is one of the world's top steel companies, with more than 326,000 employees in over 60 countries, revenues of US\$125 billion and crude steel production of 103 million tons.<sup>6</sup> The company learned that growth through acquisitions does not always translate into healthy, proactive customer relationships. ArcelorMittal understood that to be a leader, it needed smarter relationships, interconnecting its customers' supply chain plans and requirements with its own.

To improve its customer-focused capabilities, the company created a worldwide network of distribution centers, steel service centers, construction and foundation solutions under a single group, called ArcelorMittal Steel Solutions and Services. This entity regrouped and streamlined customer initiatives around customer groups segmented by specialized and complementary markets. Its priorities are to strengthen its position in Europe, add value to its products and services and expand in growth markets.<sup>7</sup>

ArcelorMittal Steel Solutions and Services now operates in more than 500 facilities in 32 countries and serves approximately 200,000 customers.<sup>8</sup> The initiative supports a strong, innovative culture that extends important service and logistics offerings to its customers. The organization has been able to change the value it contributes to commercially marketed steel products in a positive way. It has helped ArcelorMittal to increase customer loyalty and worked directly with customers to generate new expertise in downstream steel solutions. Most importantly, it has been able to align customers' growth and transformation projects closely, simultaneously benefiting its customers and driving ArcelorMittal's own global growth strategy.



## CUSTOMER INTIMACY IN THE SMARTER SUPPLY CHAIN

Smarter supply chains help companies serve a diverse customer base, proactively gathering and analyzing information to develop a consensus forecast and synchronizing supply and demand. The smarter supply chain uses sophisticated simulation models of customer behavior, buying patterns and market penetration. And unexpected shifts in demand are easily accommodated because of realtime connections and flexible relationships with suppliers and customers.

A consensus forecast allows companies to use inventory as a strategic tool to define service levels and gain market share. A consensus forecast is when all participants in the supply chain – suppliers, the mill or mine, and customers – agree on how much product they will make, buy or sell. It involves integrating forecasting and demand. The view from the customer perspective or “market down” means moving from a traditional “push model,” i.e., building inventories based on production efficiencies, to what customers need. Generating a consensus forecast is instrumental for demand planning accuracy and balancing actual demand with overall costs. M&M companies can also look at the market in an “unconstrained” way, using unassigned inventory for new market opportunities or unexpected demand. The case for consciously investing in inventory to grab market share becomes a separate planning activity based on justified markets and economics. Optimizing the product mix for the “unconstrained” portion is just part of the overall planning, not the approach to the entire forecast.

Integrating sales allocation with dynamic supply-demand balancing and timely demand-driven replenishment is also a crucial step. When capacity is constrained, managers need well-defined allocation rules to help ensure customer priorities are met. Allocations are established and then become the basis for accurate order promising and integrated performance management. This process is key in meeting customer demand, boiling down to “how long does it take you to promise an order?” and, then, “how do you perform against that promise?”

By following a similar forecasting and sales allocation process, South Korean steel giant POSCO is able to promise orders in seconds that are accurate 95 percent of the time. This requires a combination of process design, organizational change and systems design, in both the sales and operations organizations. POSCO reorganized its sales and marketing organization from reporting to the sites and moved them into the corporate sales office. POSCO also took a new view of its systems, viewing them holistically, end-to-end in the supply chain instead of as individual, discrete instances.<sup>9</sup>



## GLOBALIZATION IN THE SMARTER SUPPLY CHAIN

Mastering the globalization of the supply chain requires a wide-angle view of the market and an S&OP process that transcends the typical regional focus of most steel companies and uses advanced decision-support analytics and optimization to automate supply chain transactions. The planning and scheduling hierarchy and the role of data and process standards are key enablers both to achieve effectiveness at individual plants and to coordinate multiple operations across the globe. Regional differences, including culture, physical disparity, language, local regulation and availability of skills and leadership, make collaboration and visibility more difficult. The challenge makes the case for standards and collaboration despite the additional barriers cross-continental businesses exhibit.

Successful metals and mining companies are able to enhance their ability to meet customer requirements by extending capabilities across global service centers to meet local demand. ThyssenKrupp Steel, for example, is creating a service model in the Americas by constructing a network of facilities – a mill in Brazil near raw material sources that produces and ships slabs to a Mobile, Alabama facility that rolls and then distributes the coils to finishing and automotive component service centers close to the customer bases.<sup>10</sup>



## RISK MANAGEMENT IN THE SMARTER SUPPLY CHAIN

Top supply chains lead in integrating process controls in logistics and operations, building compliance programs with suppliers and service providers, incorporating risk strategies and mitigation policies in supply chain planning, and using supply chain event management techniques with tolerances to monitor disruptions. Many of these activities can be summed up as “top-floor-to-shop-floor” integration, or in other words, when management functions share information with mill or mining operations.

Connecting top floor to shop floor involves integrating enterprise resource planning (ERP) and manufacturing execution systems – and ERP to ERP connections across the supplier/customer network. Risk may manifest itself most visibly within the supply chain planning and scheduling hierarchy. Within the metals and mining supply chain, different management practices have different times frames that they affect. Planning is medium to long term in time; complete in approximate terms; precedes action; and demand-driven. Scheduling is immediate to short term; as exact as possible; precedes action; and is order-driven. Execution, producing steel and filling orders, should be exact and concurrent. Risk should be considered at all three hierarchy levels.

Companies must be able to sense risk using appropriate “headlights” or alert sensors. M&M companies must also have “taillights,” i.e., a rich, data-driven history of past performance that helps them adapt the sensors to change and plan for future risk. Top-floor-to-shop-floor integration is essential to monitor events across the different time frames and bridge the gap between today’s ERP and shop-floor systems to control product flow end to end.

## How will supply chains become smarter?

New capabilities and business practices are emerging to improve performance for companies, customers and the world itself. Three attributes that describe how operations will improve include becoming instrumented, interconnected and intelligent.

**Instrumented:** Automated transactions and smart devices

- Uses sensors, actuators, RFID and smart devices to automate transactions such as inventory location, replenishment detection, transportation location and bottleneck identification
- Supports realtime data collection and transparency from raw material to customer delivery

**Interconnected:** Optimized flows

- Intercompany integration of information across the network
- Collaborative decision making through decision support and business intelligence – starting with the customer
- C-suite risk management programs for integrated financial controls with operational performance monitored and measured

**Intelligent:** Networked planning, execution and decision analysis

- Mining of the collected data from operational shop-floor systems for use in intelligent prediction models; Steelmakers have run pilots recently in predicting quality problems one or two production steps before they occur
- Models to predict equipment failure using shop-floor data, triggering preventive maintenance orders to avoid unplanned shutdowns
- Simulation models to evaluate trade-offs of cost, time, quality, service, carbon and other criteria
- Probability-based risk assessment and predictive analysis
- Networked planning/execution with optimized forecasts and decision support

## CONCLUSION

The profit formula for metals and mining companies is changing. According to many supply chain leaders, increased globalization, cost volatility and risk are accelerating the pace of change. Overall, supply chains will need more visibility and will need to tip the traditional product-oriented model on its head, instead focusing on collaborating with customers to be more flexible and to drive effectiveness in production planning and scheduling.

This change may require some serious reflection on operational strategy. M&M leaders should begin asking themselves some tough questions:

- Do we have enough visibility of our supply chain and customers, and if we had more visibility, could we act on it?
- Are we ready for the impending increase in information volume, variety and velocity?
- How well is risk factored into our operational decision making?
- Are we controlling costs smartly through better strategies, processes and operations?
- Are we managing our customer relationships effectively? How can we improve our forecasting and inventory planning through better collaboration with our customers?
- How should the role of the supply chain organization, and its leadership, evolve going forward? What new skills and responsibilities should we develop now to be effective leaders in the future?

Getting started requires informed leaders who can set the agenda for change and a vision and strategy for what the company will become. Leaders must actively navigate change, clearly communicating simple goals, and seeking out proven solutions and experienced people to get the job done. Successful execution will hopefully move the conversation from surviving in the new metals economy to thriving in it – and preparing for the next wave of change.

Clearly, supply chains have the potential to become much smarter. But this will not happen simply because they can. Smarter supply chains will emerge because they must. The challenges that sit at the top of the Chief Supply Chain Officer agenda demand it.

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IBM Global Services  
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April 2009  
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