

Succeeding in Today's Industrial Equipment Markets

Leverage Your Supply Chain as a Competitive Weapon

by the Manufacturing Performance Institute

Executive Summary

Industrial equipment manufacturers (IEMs) face fundamental changes in the way they do business. A dramatic shift in this vast market around the globe has made it possible for firms with vision, strategy, and flexible supply chains to rapidly capture market share. And the prize is large and, after a brief but sharp downturn, once again growing for those that do.

In 2010, the United States exported \$137.8 billion in machinery and imported \$105.5 billion worth of these goods. That represents a strong recovery for the sector from \$113.4 billion in exports and \$87.8 billion in imports in 2009.ⁱ The European Union exported €334 billion in industrial goods and imported €204 billion in 2009. The industrial goods sector represents a third of manufacturing processes in the EU and employs almost 11 million people.ⁱⁱ Based on data for new manufacturing orders in the EU, which rose steadily into 2011 after a dramatic drop in late 2008,ⁱⁱⁱ EU IEM economic growth similar to what is occurring in the U.S. IEM sector should be expected.

As IEMs deal with recovering economies and global customers ready to invest after years of neglect, the ability of IEMs to effectively manage their operations — and those of their supply-chain partners — will likely determine their successes or failures (and perhaps survival) in coming years. *Succeeding in Today's Industrial Equipment Markets* will help industrial equipment and machinery manufacturers better compete and succeed by examining the:

- Changing IEM customer market (e.g., demand for increasing value at the same or decreasing cost; expectations of nonproduct services and support),
- Challenges facing IEMs as they attempt to leverage market changes (e.g., coordinating and improving upstream efforts with suppliers with their own operations and the changing demands of customers), and

- Skills and tools needed to address changes and challenges (e.g., moving beyond the traditional, buy-sell relationship with customers; information technologies to improve demand visibility and connect with customers and suppliers).

Changing IEM Customer Market

Customers' demands of industrial equipment manufacturers (IEMs) have changed dramatically. Most importantly, customers now demand increasing value at the same or decreasing cost. And while few products are as complex and/or customized as industrial equipment, customers increasingly view the equipment itself as a commodity — with the major differentiators between companies now found in nonproduct value such as service, delivery, integration services, and maintenance. Many IEMs earn more today in after-sales service and maintenance agreements than they earn on sales of the original equipment.

At the same time, the customer touch point for IEMs shifted and continues to shift, fueled in part by recession as manufacturers trimmed staff and jettisoned manufacturing engineers. The result is that with reduced in-house expertise, industrial firms suddenly lack the skill sets to accurately identify and specify equipment needs, coordinate lines using equipment from many IEMs, install and implement new lines and equipment, or even maintain existing equipment. Customers now require assistance from IEMs not just for selection and installation of the equipment itself, but for a wide variety of value-added services ranging from line-integration planning to implementation to actual operation of the production line itself. Many European equipment makers were quick to act in setting up alliances to satisfy this demand for a broad range of start-up services, and now IEMs around the globe are following suit.

As if those changes weren't enough, the core component of an IEM's "value package" also must include the same high standards of quality and reliability as ever — yet at a reduced total cost of

ownership (TCO) over the lifetime of the equipment. Most IEM effort in addressing TCO comes in the form of nonproduct value-add:

- Training for customers' employees (on the job, classroom, and just-in-time modules available online);
- Technical aids and equipment documentation (from installation to operation to maintenance);
- Customized, on-machine visual instructions and alerts corresponding to safety and maintenance management; and
- Energy-optimization strategies and techniques.

These services have led to an ongoing redefinition of what it means to be an IEM. Customers now ask IEMs for help in reconfiguring *existing* equipment to accommodate new product lines, and for asset-management information and service to maintain and improve equipment performance.

These demands could be viewed as a huge drain of resources and expenses for IEMs. Yet savvy IEMs view these trends as opportunities to dramatically increase profits. Why? Because providing more customer value doesn't *necessarily* require substantially more investment on the part of IEMs, while many of the additional value components (such as asset monitoring and management) offer chances for new revenue, increased customer loyalty, and ongoing renewal of postsale agreements. But thriving (or even just surviving) in this new business landscape will require IEMs to adopt new tools and new ways of thinking about how they operate — especially with partners in the supply chain.

Challenges for IEMs in Leveraging Market Changes

It's a paradox: as focused as IEMs are on *downstream* challenges with customers, the ultimate solution for meeting those customer demands lies in coordinating those demands *upstream*

within their own operations and those of their suppliers. The IEM market has always been supplier-centric, requiring well-planned procurement and sourcing strategies for hundreds of components and subassemblies — integrated circuits and chips, motors, sensors, controllers, stampings, etc. — from an array of vendors around the globe. Interestingly, this reliance on part and component vendors actually increases over the life of equipment, as replacement parts (and the documentation supporting them) are vital in keeping manufacturing customers up and running. Providing these service parts is a complex undertaking, since a typical IEM may produce a piece of equipment incorporating hundreds or thousands of parts from a similar number of suppliers (and parts and components must be available for years to come as long-lasting equipment is maintained and repaired).

Productively meeting customer demand has always required IEMs to develop more than a simple buy-sell relationship with their suppliers. IEMs frequently need to quickly assess not only their own inventory levels but also those of their supply chains; indeed, one of an IEM's greatest operational concerns is typically its ability to manage inventories as tightly as possible without putting customer orders in jeopardy. This in turn helps it to manage cash flow to address the next wave of customer orders and supply procurement. Savvy IEMs also look out over the supply chain to assess available resources (e.g., design expertise, integration skills) and production capacities throughout the supply chain, to accommodate not just fluctuations in demand but new product opportunities as well. This is especially critical — and challenging — as IEMs develop new business around the globe, in China and other emerging markets, and begin to source nonproduct services to complement their industrial equipment. In turn, suppliers look to IEMs for up-to-date perspectives of customer demand — not just the IEMs' forecasts, but the IEMs' customers' forecasts as well. Suppliers may be willing to colocate facilities and inventory to new markets — but not without a reliable demand forecast.

This visibility and sharing, up and down the supply chain, rarely emerges from simple buy-sell relationships, but rather requires IEM coordination of alliances, partnerships, and information (as well as overcoming the technical challenges of connecting information technology systems among suppliers/partners). These challenges are compounded when suppliers serve multiple IEMs, meaning that one IEM's product development or engineering secrets run the risk of exposure to competitors. Smart IEMs partner with suppliers while at the same time developing clear, definitive working agreements that address intellectual property and proprietary equipment knowledge.

For most IEMs, enhanced supply-chain management and coordination should be an extension of what's already occurring. Surprisingly, though, the IEM sector hasn't made significant progress. For example, 41% of IEMs describe their relationships with suppliers as "buy and sell (e.g., cost and quality focus)"; only 20% describe these relationships as "partnership (e.g., sharing resources, intellectual property, cost savings)." Relationships with customers aren't any more advanced: 39% of IEMs describe their relationships with customers as "buy and sell (e.g., cost and quality focus)," while only 20% describe these relationships as "partnership (e.g., sharing resources, intellectual property, cost savings)." What does all this mean? Simply put, IEMs — despite requiring more cooperation to deliver services and maintain profitability — aren't building relationships with suppliers and/or customers that allow true collaboration to happen.^{iv}

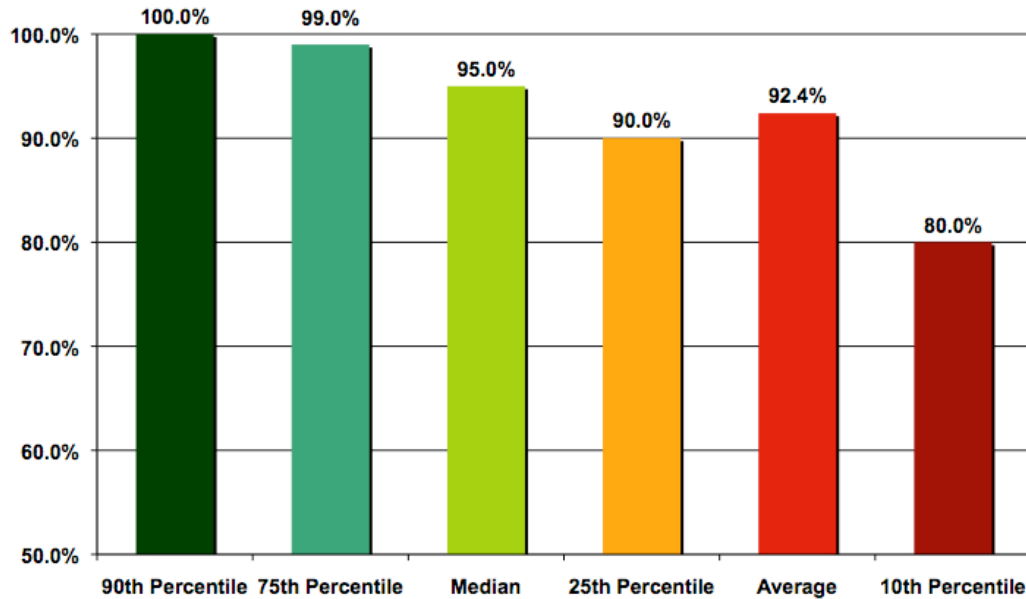
The failure to develop greater integration up and down the supply chain — sharing information, forecasts, and product knowledge — has contributed to poor customer-facing performance metrics for many IEMs. For example:

- *Warranty costs:* Approximately 15% of IEMs report warranty costs, as a percentage of sales, at 4% or higher — compared to a sector median of just 1%. Imagine how those lost dollars vs. the industry benchmark — \$3 million in additional costs at an

organization with sales of \$100 million — could be used for investments that drive improvement and growth.^v It's clear that many IEMs are paying out far more in warranty costs than others, indicating flawed delivery and fulfillment processes. This may also indicate an inability among some IEMs to effectively manage supplier parts and/or share warranty burdens with suppliers.

- *On-time delivery:* In addition to quality, as indicated by warranty costs, delivery is an issue for many IEMs. Here, too, it's understood that this market is not comparable to assemblers bolting together a few widgets or process firms filling tankers; long development and production lead times are frequent among IEMs. Yet 21% of IEMs have on-time delivery rates of 80% or lower, compared to a sector median of 93%. Can an IEM really succeed if one out of five orders are late?^{vi}
- *Customer retention rates:* Most IEMs keep the vast majority of their customers from year to year, with a retention rate of 95% (median *as shown*). Yet 12% of IEMs have retention rates of *80% or worse*. Compared to the median or typical retention rates in the industry, these struggling IEMs have to invest more in sales and marketing to replace four times as many customers as their better-performing competitors. Given many of the warranty and delivery issues cited earlier, this outcome isn't unexpected.^{vii}

IEM Customer Retention Rate
(% of customers retained from previous year)^{viii}



Amid poor customer-facing performances, the tendency is often to focus on internal processes, myopically narrowing the problem down to production without considering the broader spectrum of sales, design, sourcing, production, distribution, maintenance, and all the factors that influence success at those activities. Even the leanest of plant floors cannot satisfy customers if those same theories aren't applied to supply-chain processes that affect customers. Many IEM problems (and solutions) in this complex industry are found outside the walls of the organization itself.

- How efficient is the demand-driven supplier network (the processes and systems that connect customers with operations and suppliers)?
- How visible is information about these processes?
- How well is information translated into actionable plans and schedules for the entire supply chain?

For example, how are last-minute customer-order changes communicated to both internal production and external suppliers? Conversely, do sales representatives influence customer-demand patterns in ways that optimize supply-chain capacities and inventories — or do they drive sales and customer requests that increase operational complexity without adding customer value?

Skills and Tools to Address Changes and Challenges

IEMs face similar partnering challenges with customers; it's difficult if not impossible to offer increasing value and integration capabilities while maintaining a traditional, buy-sell relationship with customers. This means that for IEMs to reconfigure their internal and external processes around a value-added strategy, they must work as hard at building partnerships with customers as they do at building machinery, and at building demand-driven supplier networks to satisfy customers. This is difficult and time consuming, but over time the transition from transaction-based relationships to partnerships and supplier networks will enable an IEM to better understand what customers need — and earn the rewards for satisfying those needs.

As a partner or preferred supplier, an IEM earns the right to customer intimacy, enabling them to receive and analyze information — regarding customer needs, concerns, plans, forecasts, requirements, frustrations, etc. — more readily. But this privilege comes with enormous responsibilities, at the core of which is the absolute requirement to develop a customer information management strategy. Savvy IEMs understand that they must consolidate data and data systems for faster, more detailed analysis; customers react badly when IEMs are given detailed information but fail to leverage it for customer benefit. Conversely, development of a solid customer information management strategy can lead to a clearer view of customer demand, improved visibility into the supply base, and an improved ability to react to market and supply chain signals — and help to optimize schedules among production, service, and maintenance to ensure world-class customer satisfaction.

Smart IEMs understand how mission-critical a customer information management strategy is; indeed, many IEMs and their sales forces are already using various IT tools to be proactive in evaluating customer-buying patterns (products, services, value-add requests) and forecasting customer demand. Enterprise resource planning (ERP) and supply chain management (SCM) applications allow them to unify activities across the supply chain (their suppliers now act as one with them) and map customer demand to manufacturing models (i.e., getting pull signals for lean production flowing back through the supply chain). A strong customer relationship management (CRM) solution also can help manufacturers gain greater visibility into their sales pipeline, resulting in more accurate capacity planning and improved efficiencies across sales and marketing.

Leading IEMs are pursuing an organizational approach to improving IT systems and processes, with the goal to capture and share “product” demand signals across the enterprise and its supply chain, triggering not only production but offers for implementation services, postsale asset-management opportunities, and contracts for replacement parts. Approximately 41% of IEMs indicate that the implementation of new IT has directly increased profitability for their organization. Annual IT spending for IEMs is 1.5% of sales (median) — but among those IEMs that report IT driving profitability, the annual IT spend is 3% of sales (median). Those IEMs getting more out of their IT are *investing* more into their IT.

Most importantly, the IT infrastructure and processes that allow IEMs to get closer to customers must be accompanied by cultural changes that encourage partnership (and end-to-end supply-chain visibility) with suppliers. What good is it to work closely with a customer to secure fast-turnaround contracts for 10 machines if the suppliers providing electronics for those machines aren’t given the same insights into customer timelines?

A demand-driven supplier network can be a strategic weapon, but only if supply-chain visibility provides every partner with not just information, but also knowledge — actionable data that allow effective planning and scheduling to fulfill customer demand. Savvy IEMs are investing time and resources *now* into the IT infrastructures, manufacturing business systems, and customer relationship management solutions that will pay dividends *later* in the form of new opportunities, cost savings, and customer loyalty (and new customers). Are your firm and your supply chain ready for the new IEM landscape?

The Manufacturing Performance Institute is part of The MPI Group, Inc. (MPI), a Cleveland, Ohio-based research organization specializing in research development, analysis, and communications. MPI services include survey creation and fielding, research analysis and white paper and ebook development, webcast and live presentations of research findings, state-of-industry reports, and creation of online, interactive database tools that house performance data, whether developed by MPI or others. MPI is led by John R. Brandt, former editor and publisher of INDUSTRYWEEK and CHIEF EXECUTIVE magazines.

ⁱ Machinery except electrical, TradeStats Express, National Trade Data, 2007-2010 (tse.export.gov).

ⁱⁱ European Commission, Trade, Industrial Goods, Machinery and Electrical Appliances.

ⁱⁱⁱ Eurostat, industrial new orders, June 22, 2011.

^{iv} Data on 361 U.S. and international machinery manufacturing plants, NAICS 333, from MPI Manufacturing Studies, 2006-2010, Manufacturing Performance Institute.

^v Ibid.

^{vi} Ibid.

^{vii} Ibid.

^{viii} Ibid.