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Midmarket Manufacturers Must Address**

*by David Caruso, SVP Research, AMR Research, Inc.*

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# The World Class Challenge: Six Critical Issues Midmarket Manufacturers Must Address

by David Caruso, SVP Research, AMR Research, Inc.

With the benefit of hindsight, we can now see the sweeping changes brought about by e-business. Leading companies have completely subsumed manufacturing into the supply chain, and much of the interaction between customers and suppliers is electronically enabled. Still, manufacturing is as important as it ever was. In fact, one could argue that world-class performance in manufacturing is necessary for companies to succeed in today's product and financial markets, where there is no longer any room for error.

All things considered, manufacturing is alive and well, but it will face increasing costs and mounting competitive pressure, as well as global political uncertainty, in 2003 and beyond.

## The business trends of the last decade continue to accelerate

Manufacturers have endured gut-wrenching changes in the past 20 years. And their ailments won't abate anytime soon as massive industry changes spill from one vertical industry to another. Several major business forces will continue their prominence:

- Globalization of manufacturing and consolidation of capacity will continue in every industry.
- Increasing numbers of products will be produced by virtual or extended enterprises, with linkage between tiered suppliers and Original Equipment Manufacturers (OEMs) to create and deliver the physical product.
- Mass customization will require communicating customer-specific information from the order management process to each production site. New electronic customer channels and customer relationship management tools are a must, especially in industries where aftermarket services constitute a considerable amount of revenue opportunity.
- Product innovation is the lifeblood of many industries. Companies will need to continually reduce the time necessary to bring out new, marketshare-grabbing products and speed the market entry throughout the extended enterprise.
- Cost and variability will be reduced through lean manufacturing, inventory elimination, and improvement programs such as Six Sigma. This will drive the need for improved visibility of your manufacturing operation on a global scale and improved analysis of data trends and performance insight.
- The government, OEMs, and even end user customers will push regulatory compliance requirements on their manufacturers, including Environmental, Health, and Safety (EH&S) standards, such as ISO 9001 and 21 CFR Part 11. Manufacturers will find themselves increasingly responsible for warranty claims on supplied parts, too.

Unfortunately, the growth economy that masked internal operating inefficiencies during the 1990's has waned and now CEOs and CFOs alike are concerned with managing their business for profitability in a constrained growth environment. Executives are recognizing that this period may be the best opportunity to build an infrastructure that can power their companies to greater profitability and accelerated growth when the economy turns up. As a result, they are looking for improved tools to manage the business and reduce operating costs and overhead, while also reducing Information Technology (IT) costs. Not surprisingly, ERP systems continue to be identified as the essential platform upon which companies are building their competitive business process upgrades. Some of the primary reasons that Enterprise Resource Planning (ERP) is still the engine are discussed below.

## **Global markets demand integrated information systems**

The days of regional products and manufacturing are over. Regardless of company size, the competitive landscape for all companies is based on a global map. Competing on a global basis means responding to continuous customer demand overseas, global sourcing, joint ventures, and developing global presence through acquisitions. New markets, such as China, dictate expansion of production facilities in areas of high customer density or where manufacturing efficiencies can be achieved.

As a result, manufacturers must adopt more and more applications that provide cross-divisional or corporate-wide leverage to maximize global corporate resources, buying power, and intelligence, such as the following:

- Sourcing and procurement
- Customer portals, order management, and customer fulfillment
- Financial consolidation and cash management
- Supply chain management
- Enterprise performance management

Not surprisingly, many companies have systems at every location, but this plethora of systems often prevents global views or does so at tremendous complexity and cost. For many companies, the need to move beyond a multitude of unintegrated control systems to a single integrated backbone is a necessity, not a luxury.

## **Manufacturers need to e-enable new customer service channels**

More intimate relationships with suppliers and customers are the essence of any e-business strategy. Globalization and better access to information is accelerating product commoditization—customer service is now a recognized path to differentiation and higher satisfaction. Moreover, the trend toward contract manufacturing, multitier supply chains, and vertical-industry-optimized logistics strategies expands the complexity of managing for customer service excellence. For most companies, the new era Internet-based customer interaction will require overhauling many long-held business processes.

One of the critical themes seen in manufacturing today is establishing a primacy of customer fulfillment across all areas of the company, from product, service, and information delivery. Excellence in customer fulfillment will separate leaders from also-rans. This will require information from the entire organization—Segmented channel analyses, demand management, and operational excellence programs will drive increased use of business intelligence, portals, and decision support analysis tools.

Investment in the customer-focused technologies addresses some of the chief CEO concerns—focusing on customer retention and revenue enhancement opportunities. At the business process level, companies are finding new success with applications such as the following:

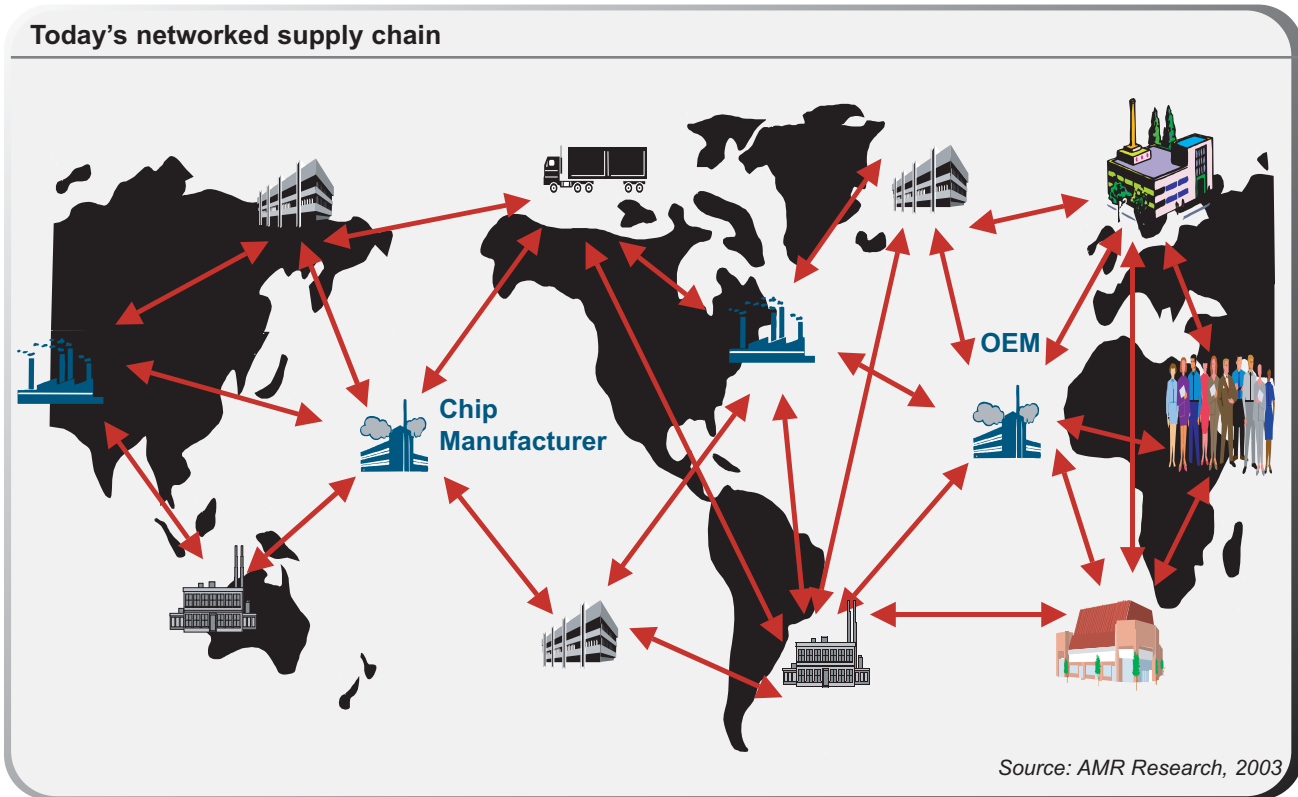
- Sales and opportunity management
- Call center
- Channel and distributor management
- Web self-service
- Catalog and content management
- Field service
- Product configuration

Today, customer service is the key selling differentiator in many industries. Customer fulfillment will become even more important as manufacturers transition to servicing new electronic channels, as they will not necessarily have the face-to-face customer contact typical of previous direct sales environments. As a result, customer fulfillment and Customer Relationship Management (CRM) applications will continue to garner substantial investment over the next several years.

## Manufacturers need to bridge disconnects across today's networked supply chain

Your company's relative position in the supply chain drives many of the strategies that you deploy today. Thorough understanding of the multiple roles your company plays in the supply chain could radically alter many of the precepts that vertically oriented manufacturers have held sacrosanct for years. For example, in the High-Tech industry, manufacturers have actually spread the manufacturing process beyond their four walls and across many third-party component makers and final assembly shops in the supply chain.

The challenge now is to integrate worldwide requirements into new designs and tailor specific options, documentation, and marketing programs to specific regions. Decisions on where to manufacture must consider labor cost, time to delivery, taxes and tariffs, and incentives in each region. Manufacturers must also consider the need to source raw materials from suppliers on a global basis to achieve the lowest cost and highest quality, as well as minimize inbound freight expenses.



As is the case in many industries, the move toward demand-driven strategies will challenge manufacturers to bridge process and information disconnects between distributed manufacturing operations, distributors, and service provider intersection points in the supply chain. These disconnects cost the manufacturer responsiveness, market and customer visibility, and higher inventories. This is driving more manufacturers to address expensive and complicated issues of two general areas of importance: supplier integration and supply chain collaboration. In addition, investments continue to be made in upgrading business processes in the following areas:

- Forecasting, demand and revenue management
- Sourcing and procurement
- Supply chain planning
- Supply chain event management
- Transportation and warehouse management

Leading companies are restructuring the value chain surrounding them—often creating virtual manufacturing and supply chains to fuel growth and minimize their asset base. The mission is to create a flexible manufacturing environment that enables them to cost effectively deal with the dynamics of rapid product introduction, swings in demand, and global product availability.

### **Real-time production systems become more important as manufacturers must increase profit margins by reducing cost and improving throughput**

A renewed focus on cutting waste out of operations through improved manufacturing cycle time and process capability has more manufacturers embracing Lean Manufacturing and Six Sigma programs. Often manufacturers have used visual factory techniques and simple desktop applications wherever possible, avoiding IT that adds wasteful overhead or becomes a barrier to continuous improvement. Yet, lean manufacturing depends on high-quality information and materials. This is the point at which many manufacturers recognize the need for integrated next-generation ERP systems in their quest to improve operating performance.

Direct labor is usually a small part of the manufacturing budget, leaving indirect labor costs as the prime target of cost-reduction initiatives. With e-business technology, companies can automate the cumbersome tasks associated with efficiently managing production—such as improved scheduling and coordinating with suppliers—manage quality across the supply chain, and gain visibility of capacity and schedule. A lean, demand-driven organization, which will continue the interest in flow manufacturing and other demand-pull methodologies, is a prerequisite.

To do this and connect your company into your supply chain requires strong cross-functional processes, integrate internal systems and business processes. Unfortunately, most legacy manufacturing control systems have little if any support for lean principles and processes—and working around these limitations isn't your best bet.

Users are now looking for production operations software that allows them to centrally manage the plants, optimize production, and measure performance effectively—in real time. Understanding the information requirements of state-of-the-art manufacturing techniques, IT professionals can empower employees with software tools to help them achieve their continuous improvement goals.

Simply put, manufacturers are looking for ways to shorten the time between events and the response to them. Inefficient workflow processes and inaccessible islands of information are targets for substantial improvement. In addition, manual compliance processes must be automated to free valuable resources for more productive use. Fortunately, many of today's ERP systems are built around the manufacturing enterprise model and provide well-integrated functions and controls. High-quality ERP systems will provide the production operations side of the business with the following:

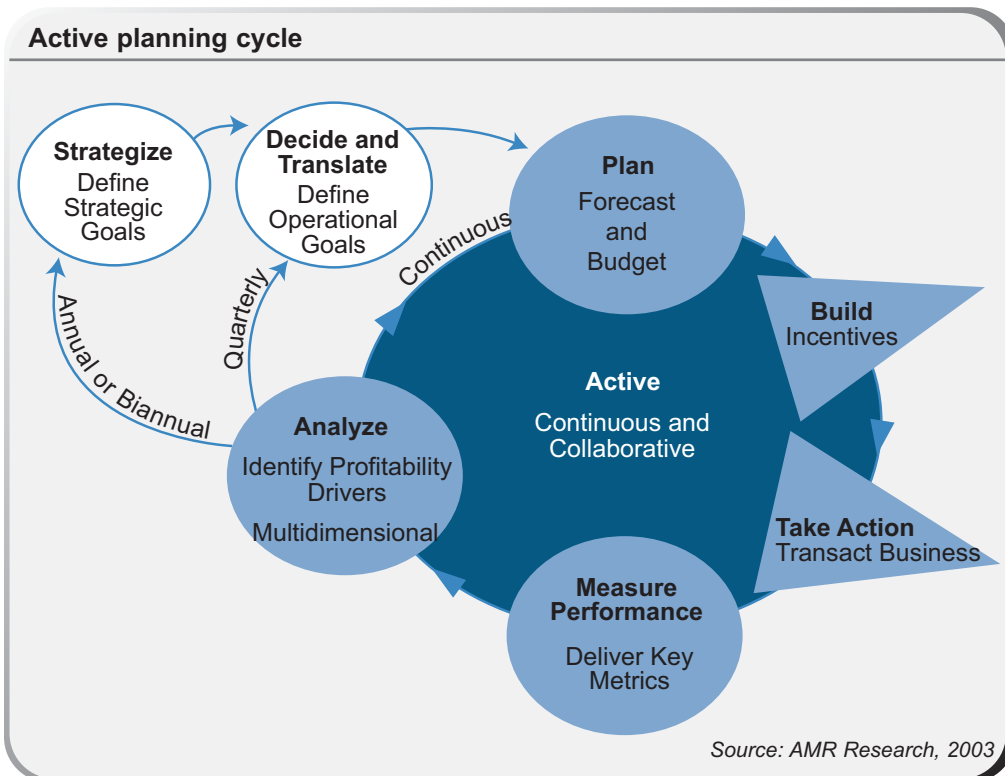
- Capacity planning and management
- Outsourced manufacturing visibility and control
- Optimized scheduling tools
- Quality management system integration

## **Enterprise performance management speaks to the CEO and CFO**

Users have expended countless amounts of time and money implementing a wide variety of productivity-oriented IT projects over the last decade. However, few executives have been able to use the data contained in these systems to manage their business to a desired state of performance. In effect, there has been no business planning feedback loop that permits companies to understand the state of their business processes as applied to strategic goals. Now, though, with the vision of a single, unified environment to manage the entire business still intact, the goal line is in sight. This capability, new to many ERP systems, is Enterprise Performance Management (EPM).

EPM comprises the applications and processes that cross departmental boundaries to control and manage the full lifecycle of business decision-making. It combines strategic goal-setting and alignment with planning, forecasting, and modeling capabilities, using powerful analytics along with tactical reporting to create smarter operational plans in light of inevitable and ever-present tradeoffs. Typically built around business analytics tools, these systems extend the insight of a powerful ERP system right into the boardroom. The major features of ERP-based EPM systems include budgeting, forecasting and planning, supply chain performance analysis, and even activity-based management.

EPM systems finally give powerful context to the way you wish to manage your business. Supplier metrics can be stated in terms of on-time performance and the measure of product, service, and order quality. Customer metrics can be analyzed by stats of loyalty or price sensitivity. Sales metrics are measured against unit counts and customer mix ratios. Employee metrics can be created to monitor attrition rates or performance ratings. Regardless of the measurement, the enterprise demands that operation plans be stated financially to fully assess the monetary impact on the enterprise. Finally, functional and executive leadership has access to information from other groups, enabling users to make decisions that optimize performance globally, not just locally.



## **Legacy systems threaten to drive IT costs out of control**

Reducing IT costs is the challenge that nearly every IT manager is receiving from executive management. It is not a request—it is a mandate. In many cases, the issue driving the IT cost structure is the plethora of applications and integration points the IT shop must maintain.

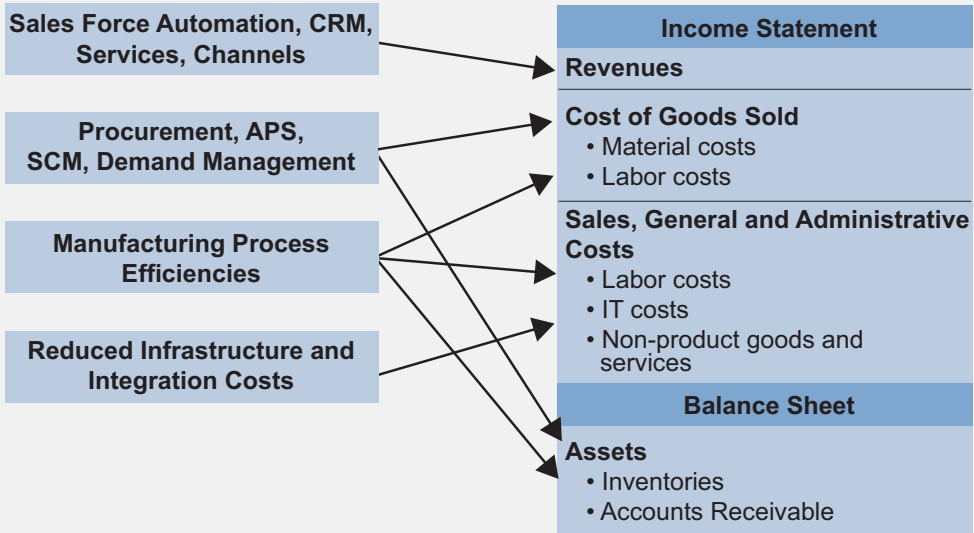
Many companies live with a multitude of applications purchased over the years. As a result, integration continues to increase as a percentage of the overall IT budget. In fact, it is ranked as one of the leading investments for 2003. Well over 80% of U.S. companies are budgeting for some type of integration in 2002, and roughly one-third of U.S. companies consider application integration to be one of their top three IT investments in 2003. Now more demanding of its suppliers, the smarter IT buyer is no longer willing to absorb integration costs that are often greater than the original cost of the application license.

Most companies today live with the multiple applications and vendors needed to optimize and synchronize complex business processes cutting across multiple functions and departments. The complex environment creates a tremendous cost structure that is difficult to reduce, and few companies can afford the overhead of this non-productive investment. It becomes clear that a single backbone ERP system that improves the availability of functionality while reducing the IT complexity and maintenance cost becomes the desirable next step for many manufacturers.

## **Today's ERP systems help**

World-class performance is all about growing market share and building a cost structure that enables margin growth throughout economic downturns as well as growth times. The notion of a singular backbone system—consistent in its technology base and minimizing costly multivendor application integration—has proven its worth over and over in companies large and small. To its credit, the ERP backbone provides a necessary platform for competitive advantage. Savvy executives looking to create competitive advantage need look no further than their financial statements to see where ERP systems can provide positive impact.

## ERP's impact on manufacturers' financial performance



Source: AMR Research, 2003

ERP is very much alive, both as a concept and a software application. Corporations have invested over \$54B on ERP during the last three years, and they are likely to invest another \$64B over the next four years. Clearly, the manufacturing industry has embraced ERP as the essential backbone of its operations. This growth is attributable to the fact that not only have ERP systems providers done an excellent job of designing systems for the manufacturing organization but have also continually invested in expanding the available applications for manufacturers.

Now corporations can expect ERP to provide state-of-the-art support for Supply Chain Management (SCM), CRM, portals, analytics, and Supplier Relationship Management (SRM). This comprehensive set of applications can enable manufacturers to envision and build a global business management system molded to unique corporate requirements that are guided by enterprise performance goals.

AMR Research is a strategic advisory firm that provides business and technology executives with the critical analysis and practical advice needed to manage resources, mitigate risk, and increase business value. The company's industry-specific research initiatives focus on key trends, issues, and developments in Enterprise Management, Customer Relationship Management, Supply Chain Management, and other strategic business applications and enabling technologies that drive the market. AMR Research, founded in 1986, is headquartered in Boston with an office in Irvine and European headquarters in London. More information is available at [www.amrresearch.com](http://www.amrresearch.com).

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## ACRONYM LIST

Acronym	Definition
CRM	Customer Relationship Management
EH&S	Environmental Health and Safety
EPM	Enterprise Performance Management
ERP	Enterprise Resource Planning
IT	Information Technology
OEM	Original Equipment Manufacturer
SCM	Supply Chain Management
SRM	Supplier Relationship Management