

# INNOVATE

Microsoft Dynamics AX

## Creating Innovation Breakthroughs in Industrial Equipment Manufacturing and Machine Assembly

White Paper

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# Table of Contents

<b>Introduction.....</b>	<b>3</b>
Quick facts .....	3
<b>Key Challenge: Delivering Quality in a Cost-Focused World.....</b>	<b>3</b>
The advantage of modular designs .....	4
Turn compliance into opportunity .....	4
Identify your most profitable customers.....	4
Enhance collaboration.....	4
Bid and Quote Management.....	5
Issues affecting global competitiveness .....	5
A single integrated backbone .....	5
The need for a systems road map .....	6
<b>Industrial Equipment Manufacturing for Microsoft Dynamics AX.....</b>	<b>6</b>
New tools of the trade .....	6
Solution map of industry-specific capabilities .....	8
More customer-focused benefits.....	8
Streamlined sales procedures and improved business relationships .....	9
A long-term commitment .....	9
<b>Conclusion .....</b>	<b>10</b>
About Microsoft Dynamics .....	11
About Microsoft.....	11

## Introduction

Global changes in manufacturing are creating a new industrial revolution.

Competition from low-wage companies, the meteoric rise of e-commerce, evolving supply chain practices, and the mandate to produce a rapid return on investment (ROI) at any cost are all exerting severe pressures on industrial equipment manufacturers. Daily, they confront challenges related to product quality, business integration, on-time delivery, evolving supply chain initiatives, and improved customer service. The competition for each customer is intense—a fact not lost upon buyers, who are demanding that manufacturers produce faster and cheaper goods without sacrificing product excellence.

In a fever to retain market share, many manufacturers rushed to implement shop floor improvements. However, by focusing on shop floor improvements alone, companies overlooked the substantial benefits of streamlining all company processes, from concurrent engineering to customer service, sales, marketing, and accounting. In reality, shop floor operations make up a relatively small portion of a company's overall costs.

This white paper outlines some of the ways manufacturers can improve processes across their company and successfully reposition themselves as solution providers. Software solutions can help by automating processes and making it easy to share information. This paper will also address specific ways that Industrial Equipment Manufacturing for Microsoft Dynamics® AX can help your industrial equipment manufacturing company operate competitively.

### Quick facts

- The rise of low-wage competitors in developing countries has radically altered traditional manufacturer and customer relationships. Geographic loyalties are fast eroding as customers face increasing pressure to demonstrate a rapid ROI. For many buyers, price is everything.
- Intellectual property protections count for little outside of a manufacturer's home region. It's not unusual for a manufacturer to design, build, and install high-quality, made-to-order machinery, only to find that a low-cost competitor has reproduced the original at a far cheaper price.
- The Internet has forever changed buyers' expectations about speed of communications. Customers are stepping up demands to receive a rapid reply to their requests for quotations (RFQs).
- The Internet has also revolutionized expectations about how information is shared, and effective collaboration is critical. This powerfully affects industrial equipment manufacturers who operate in clusters of contractors, vendors, and suppliers.
- As manufacturers are pressured to produce goods faster and more cheaply, it becomes increasingly obvious that competing on the basis of price alone will not work for most companies.
- Lean manufacturing is here to stay. Today's industrial equipment manufacturers must focus innovatively on reducing waste, improving lead time, and upgrading quality—and lean strategies help manufacturers meet these goals.

### *Key Challenge: Delivering Quality in a Cost-Focused World*

Delivering high-quality products on time is a major challenge for industrial equipment manufacturers caught in the squeeze between cost pressures and quality demands. Other worries include the rapid rate of modernization in developing countries and regions of the world, where labor costs are a fraction of the wages paid in industrialized countries.

The good news is that even as some long-standing customer relationships erode, new opportunities exist for innovative companies to stand out from their competitors. The possibilities are enormous. However, realizing their full potential will require some significant changes for manufacturers. This paper will outline some of the ways business leaders can help ensure that motivation remains high as employees cope with these changes.

## **The advantage of modular designs**

Some innovative industrial equipment manufacturers are developing products on a modular basis, which offers compelling benefits for everyone involved. First, the manufacturers' customers are able to customize products before they purchase, and second, this capability represents an important market differentiator for the manufacturer. If customers require on-site customizations, they will be at a severe disadvantage if their manufacturer is located far away.

Modular design means, of course, that manufacturers will shoulder more responsibilities for product design and quality. Fortunately, new technologies are being brought to market that make it significantly easier to design, assemble, and deliver machines by automating many of the steps. Equally significant, manufacturers can easily share information without investing in a complex infrastructure for data distribution—a Web browser is all it takes.

## **Turn compliance into opportunity**

To remain competitive, industrial equipment manufacturers must look beyond price to communicate their overall company value.

For example: Many industrial equipment manufacturers have detailed knowledge about the compliance issues that their customers face, but the customer may not be aware of the value-added benefits this knowledge can bring to the relationship. For example, if your customer is a local food exporter who exports globally, you can be certain the exporter copes with vastly different laws governing worker safety, product safety, recycling, and other issues. A manufacturer that can assume some of the burdens of coping with international regulations as part of the bid will be viewed favorably by the customer, even if their bid reflects a higher price than that of another competitor.

Here's another example: Many European companies are taking a hard look at the labor practices of manufacturers who build their products. If a low-cost manufacturer can't provide proof that its workers are treated humanely, its customers may take their business elsewhere. If your company can offer custom on-site installation, including knowledge of local compliance issues, and proof that your workers are treated humanely, that amounts to a significant market differentiator where low-wage competitors really can't compete.

## **Identify your most profitable customers**

All customers are not created equal, but identifying the customers who can offer the greatest long-term value will require some hard analysis. Industrial Equipment Manufacturing for Microsoft Dynamics AX helps you streamline processes and capture customer data, because the system uses just one business logic, one source code, one database, and one comprehensive toolbox. You can easily track the sales you've made to your most important customers.

## **Enhance collaboration**

To be successful, industrial equipment manufacturers must communicate and collaborate effectively from early in the design process to final delivery and customer service—internally, with customers, and across their entire supply chain. For example, if a designer makes a change to a shop drawing, it ought to be quickly available for viewing by engineers regardless of their location. Access to the drawings and specifications is important for internal departments and supply chain partners as well. For example, purchasing needs to know what components to buy and operations needs to review whether changes affect production. Customer service personnel need the latest documentation to be able to respond to queries and problems. Component or subassembly partners need to see the drawings as well to make sure they can deliver as promised.

Encouraging employees to take a customer-driven focus can help them communicate more effectively with customers, solve problems, and exchange knowledge gained across the company. Although technology can assist in this process by providing a collaborative environment, companies may have to do more to maintain a consistent, customer-driven focus; for example, some companies initiate recognition and rewards programs. Consider how ongoing management support for a customer focus can extend across your organization.

## **Bid and Quote Management**

Some equipment manufacturers are offering “pay-as-you-go” options to help alleviate customer worries about ROI. Other variations include, “Try it free for three months,” or “We will modify it for free after three months.”

If your company isn’t offering a variety of pay-as-you-go options, it may lose business to a more nimble manufacturer. Software solutions can help you create better bids that include pay-as-you-go options.

As mentioned earlier, knowledge transfer about compliance issues in various countries—and any other unique benefits your company can offer—should be included in every bid. Often, they are not. Always ask as each bid is being prepared: Are there are benefits that we routinely offer customers that we are not spelling out in the bids? Does our bid accurately reflect the customized on-site installations we offer, the design excellence, the superb after-market support?

## **Issues affecting global competitiveness**

Industrial equipment and machinery manufacturers are primarily midsized original equipment manufacturers (OEMs) that work closely with their customers and distributors. As with all equipment manufacturers, they sell standard products through distributors and customized products directly to customers in specific market segments. The majority of the companies in this industry operate as component or subassembly vendors to whole-systems manufacturers.

This kind of company profile can make competitiveness and efficiency more difficult, because:

- The potential for error is higher when data is transferred between nonintegrated systems.
- Multiple subsidiaries often maintain multiple local sources for the same data. This means views can be inconsistent, with the possibility of great detriment to product integrity. An engineer viewing data in the home plant, for example, may be viewing a different set of drawings than an estimator working in a remote location.

The solution is to locate all relevant information on a company intranet available through a business portal for quick access by the internal partners who need it. Access permissions assigned by the system administrator help protect data. With password access, engineers in different countries can access the same information with just a few clicks. Access can even be extended to core customers.

## **A single integrated backbone**

Not surprisingly then, many companies have manufacturing and control systems at every location, which can create information silos and prevent global views. But companies are moving beyond nonintegrated systems to a single integrated backbone and end-to-end business management solution.

With a comprehensive business management solution, remote partners, employees, vendors, and customers have access to the information they need, when they need it most. Traditional file sharing carries risks. PDF files as e-mail attachments may download slowly, or images may degrade so much they become unusable. Faxing documents is inefficient and can be frustrating, and puts documents at risk of interception. A Web-based business portal enables quick access to documents by remote partners based on permissions that you assign.

## **The need for a systems road map**

Software solutions can help move nonintegrated systems toward integration, but wise companies also undertake periodic road map reviews to reveal information shortcomings. The IT division may be unaware of silos such as worksheets or designs stored on someone's hard disk drive, let alone paper-based worksheets or drawings stored at someone's desk. Creating a current systems map of all network equipment, including every hard disk drive, handheld device, printer, and fax machine, can help reveal any information-sharing bottlenecks.

## *Industrial Equipment Manufacturing for Microsoft Dynamics AX*

In response to industry demands, an effective lean solution must support your main business process, from quotation requests to delivery.

Industrial Equipment Manufacturing for Microsoft Dynamics AX helps industrial equipment and machine assembly manufacturers implement lean initiatives across their company by optimizing processes and eliminating wasteful practices.

Specifically, Industrial Equipment Manufacturing for Microsoft Dynamics AX provides a technology foundation for simplifying and streamlining the processes of ordering, planning, and producing customized products. The solution helps companies share data, get visibility into projects and finances, and gain the flexibility to adapt quickly to changing business requirements. Lean transformations won't occur overnight. And technology alone can't move a company into a more competitive mode. But Industrial Equipment Manufacturing for Microsoft Dynamics AX will provide many of the essential tools manufacturers need.

## **New tools of the trade**

With Industrial Equipment Manufacturing for Microsoft Dynamics AX, businesses can gain the following benefits.

### **Flexible product planning**

Your company can create flexible product models according to your variables such as color, size, and materials. Products can then be configured to match your customers' individual requirements. When the product has been configured, your customers receive up-to-date pricing and delivery information based on their choices.

### **Superior customer service and sales**

With access to key documents, company knowledge can be transferred across the organization. Customer service and sales teams benefit from this and real-time views of customer data that helps them step up their responsiveness.

### **Master planning**

Use information from across your company and supply chain to help optimize scheduling, production, and materials planning. For example, finite materials and capacity scheduling can be performed at the same time so that available capacity, inventory levels, and purchase lead times are taken into consideration in production planning. The result is more reliable planning of purchase, production, and transfer orders, which optimizes your production flow and helps ensure on-time delivery to customers.

### **Real-time information**

Manage your multi-site business efficiently with real-time exchange of information across locations through one central database. You can, for example, create and update sales orders and purchase orders across your locations in real time. Minimize stockholding costs by making stock-on-hand inquiries in all subsidiaries, and sourcing raw materials across locations.

### **Clear insight into your shop floor and beyond**

Check production schedules, capacity loadings, material planning, shop floor activities, and production costs to make sure you're managing resources efficiently. Go beyond day-to-day monitoring to view patterns and locate possible profit-eroding inefficiencies. Gantt charts provide a real-time graphical overview of your production schedule.

### **Smooth, reliable processes**

The development and production of complex products demand reliable processes. The Product Development feature can optimize your processes for configuring and developing new products and making revisions, and help coordinate between the manufacturer and the customer. You can maintain control of processes by requiring the use of documents to track items from the time of materials purchase through production and sale. In the case of a recall, you can communicate quickly with everyone who needs to know. In addition, the warehousing function includes lot control and location control to help you track products. If a question regarding a specific item arises at any time, you can easily retrieve data on how the item was engineered and where it is being used.

### **Accessible engineering information throughout the organization**

A lot of information in an industrial manufacturing organization is created and maintained in the engineering department. The information often consists of product drawings, technical specifications, and measurements. A central product information system makes it easy for this information to be used by others and helps increase product knowledge throughout the organization.

### **Integration with powerful Microsoft products**

Industrial Equipment Manufacturing for Microsoft Dynamics AX works like and with the familiar Microsoft Office system tools that your employees already use: Microsoft® Office Outlook®, Microsoft Office Word, and Microsoft Office Excel®. You can maximize your technology investment by integrating with other Microsoft products, including Microsoft Internet Information Services, Microsoft BizTalk® Server, Windows SharePoint® Services, Microsoft Office SharePoint Server, and Microsoft Office PerformancePoint™ Server.

### **Easy customizations, minimal disruption**

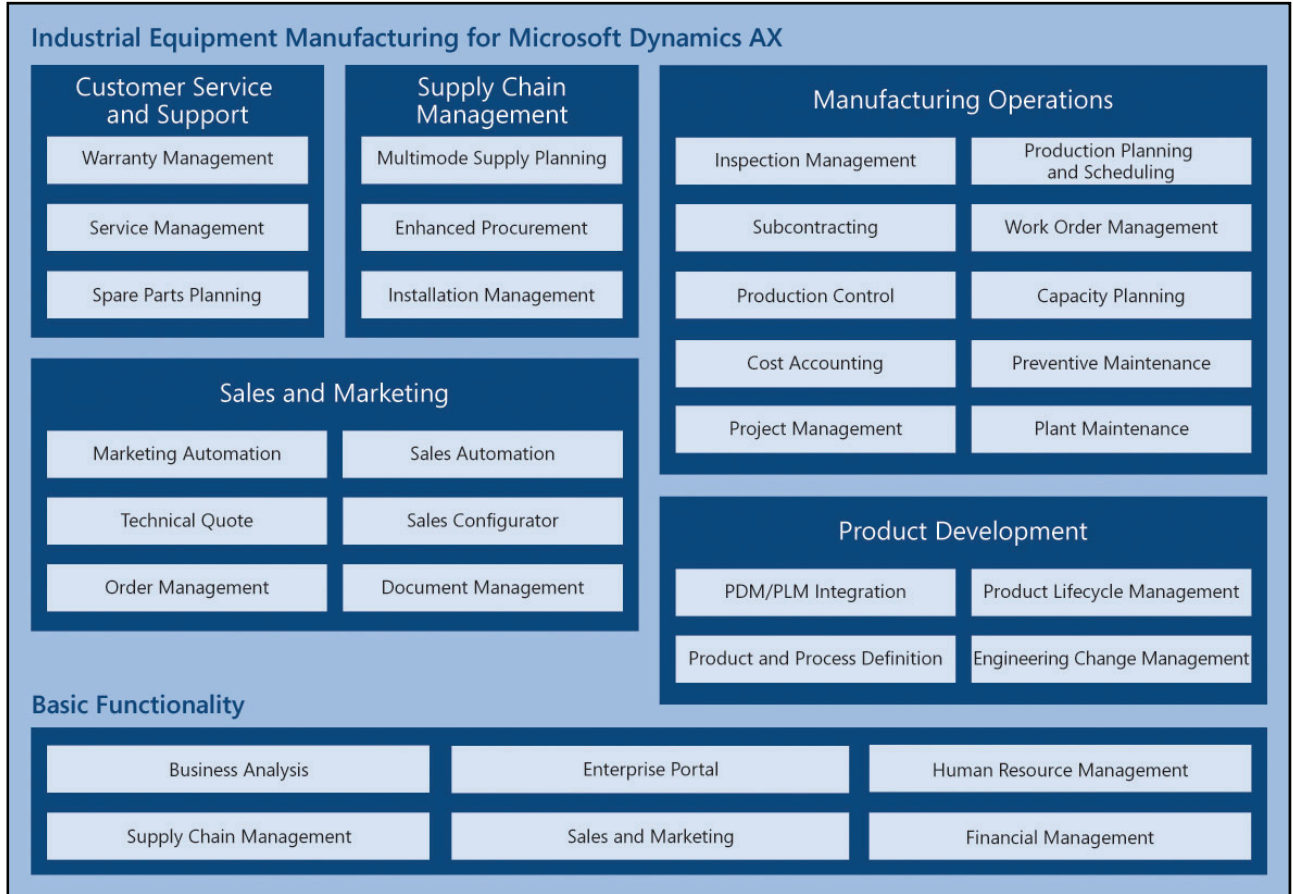
You can modify Industrial Equipment Manufacturing for Microsoft Dynamics AX whenever you need to optimize processes. A flexible layered architecture can be customized one layer at a time, without affecting the functions of other layers. This means you can adapt your solution gradually. You can also activate and deactivate specific features as you need them.

### **Easy deployment and fast return on investment**

Industrial Equipment Manufacturing for Microsoft Dynamics AX is deployed through a Microsoft Certified Partner with the business and technical expertise to help ensure a successful implementation, on time and within budget. Using the Rapid Configuration Tool—a toolkit designed by En'tegrate Software for the 3.0 release—has reduced the cost of implementing Microsoft Dynamics AX for some customers by up to 25 percent, significantly speeding up ROI.

## Solution map of industry-specific capabilities

The following diagram shows the industry-specific capabilities provided by Industrial Equipment Manufacturing for Microsoft Dynamics AX as they integrate with basic Microsoft Dynamics AX functionality.



## More customer-focused benefits

Industrial Equipment Manufacturing for Microsoft Dynamics AX delivers functionality that can help companies maintain a strong customer focus, including:

- Analytics tools, including a business analysis component for standard reporting and a financial management component for accounting and financial reporting.
- Distribution and supply chain management tools, including logistics, trade, and warehouse management components.
- E-commerce tools, including Commerce Gateway in Microsoft Dynamics AX, based on Microsoft® BizTalk Server, and Enterprise Portal components to support partner, customer, and employee access to transaction information.
- Manufacturing management tools, including components for production planning and management, customized product development, and shop floor control.
- A questionnaire tool to enable development of online surveys to gauge satisfaction of customers, partners, or employees.
- Human resources management tools, including components to support business process management, employee recruiting and management, balanced scorecard evaluations, and employee performance management.

- Sales and marketing tools, including components for marketing campaign automation and analysis, sales and marketing coordination, sales force automation, telemarketing, and sales management.
- Tools to support design, customization, testing, and debugging of the Microsoft Dynamics AX environment to support a specific business need.

### **Streamlined sales procedures and improved business relationships**

Accuracy and reliable planned delivery dates are vital elements in sales. Meeting the scheduled delivery date depends on available production capacity. Industrial Equipment Manufacturing for Microsoft Dynamics AX can help companies win more orders and increase customer satisfaction by improving connections between all company departments.

- Deliver fast and accurate information about product availability and delivery times using consolidated information from warehouse, sales, purchasing, and production.
- Track and evaluate sales quotations, run credit checks, convert quotes to sales orders, and plan order schedules efficiently. The system streamlines order entry procedures, with automatic posting of material consumption, work in progress, and finished production costs directly into the financial general ledger.
- Improve your probability of receiving winning quotes by using forecast scheduling.

### **A long-term commitment**

The tendency for employees to resist change is well documented. However, some employees willingly embrace change and can provide leadership to less enthusiastic colleagues—at least within their own departments. Simply making it known that you are looking for these hidden heroes is often enough to bring them out into the open and start the change process. Making change permanent is harder. People get attached to the status quo, even when it doesn't work for them any longer.

Part of the planning for a major change should include considering how you will communicate throughout the organization. Experts agree that involving people in the transformation will strengthen their investment and commitment. Although asking for feedback from every division is time-consuming, the results will be worth it. An effective approach to asking for feedback is to ask, "Is there anything we can be doing to make it easier for you to perform your jobs, satisfy the customers, and complete orders on time?" The results will be more creative and useful than if you take the more traditional approach, which has been, "something is wrong; we need to fix it."

Industrial Equipment Manufacturing for Microsoft Dynamics AX is easy to use, so it can help you overcome employee resistance to change. With the look and feel of the familiar Microsoft programs employees already use and tools to help them work more effectively, people can get up to speed quickly and with minimal training.

## *Conclusion*

Industrial equipment manufacturers have historically embraced shop floor improvements as a way of increasing efficiency, exceeding customer demands, and maintaining profitability. In today's radically altered industrial environment, there is a clear imperative to look beyond the shop floor. To hold down costs and compete against other low-cost companies, manufacturers must seek out areas of improvement in all aspects of business, from estimating, quoting, and bidding to deliveries and follow-through on customer service.

It's no surprise, then, that manufacturers are asking themselves tough questions about any software solution designed to improve efficiencies and help them compete by improving processes, production, delivery, and sales. The pressure to realize a rapid return on any investment is relentless.

Microsoft encourages industrial equipment manufacturers to undertake a thorough review of current systems before considering any software solution. Microsoft not only supports demands for rapid return on investment, but can help establish metrics for measuring improvements. We also expect and encourage questions about speed of installation, ease of migration of data from legacy systems into Industrial Equipment Manufacturing for Microsoft Dynamics AX, and any training that may be required.

Microsoft is in the enterprise resource planning (ERP) space for the long term. With Microsoft, you have a supplier that can help them take your businesses into the future.

To find out more about Industrial Equipment Manufacturing for Microsoft Dynamics AX, visit [www.microsoft.com/dynamics/ax/product/industrysolutions.msp](http://www.microsoft.com/dynamics/ax/product/industrysolutions.msp).

## **About Microsoft Dynamics**

Microsoft Dynamics AX is an integrated, adaptable business management solution that enables you and your people to make business decisions with confidence. Microsoft Dynamics AX works like and with familiar Microsoft software, automating and streamlining business processes and connecting you with global customers, business partners and subsidiaries in a way that helps you drive business success.

## **About Microsoft**

Founded in 1975, Microsoft (NASDAQ "MSFT") is the worldwide leader in software, services, and solutions that help people and businesses realize their full potential.

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