



THE COLLABORATIVE MANUFACTURING SOLUTION  
FOR OPTIMUM SUPPLY CHAIN PERFORMANCE

Manufacturing Advantage

**HighJump**<sup>™</sup>  
SOFTWARE

## Turning Today's Production Challenges Into Tomorrow's Competitive Advantage

The challenges companies face in today's competitive business environment come in many forms. Customers demand first-rate quality, lower costs and rapid delivery. Global competition requires manufacturers to produce at an unprecedented pace, with zero defects and waste.

Whether a plant is building to orders, schedules, or market forecasts, supplies run short, orders change, machines go down—efficiency erodes. The schedule becomes obsolete, and changes are communicated verbally. Operators struggle to understand the status of orders, machines and materials. But the information they need isn't available, resulting in errors and waste. A domino effect is inevitable.

Businesses that want to compete—and win—must meet these challenges by adopting new processes, value-added services, and technologies. The efficient management of critical processes and resources is paramount in today's deadline-driven world.

For those managing production, the key is to be adaptable and efficient enough to produce the industry's best products—just in time, in the right quantities, and according to the highest standards for quality and turnaround. When people are empowered with real-time information, they proactively prevent disruptions from occurring across the production cycle—from sourcing and fabrication to assembly and final delivery.

Now, there's a solution for manufacturers that delivers all of these advantages, without compromising productivity and budgets: HighJump Software's Manufacturing Advantage™ solution.

## Manufacturing Advantage: Optimizing Production With Robust Functionality and Unmatched Adaptability

Manufacturing Advantage is the manufacturing solution that empowers plant managers and shop floor supervisors with the robust functionality needed to turn today's production challenges into tomorrow's competitive advantage. The solution's architecture has the flexibility to meet the unique needs of each manufacturer, and can be reconfigured quickly and belongs to the HighJump adaptable Supply Chain Solution that provides you with a low total cost of ownership.

**This robust and adaptable solution is remarkably easy to:**

**Justify:** Like all HighJump solutions, Manufacturing Advantage offers fast return on investment and belongs to the HighJump adaptable Supply Chain Solution that provides you with a low total cost of ownership.

**Implement:** Manufacturing Advantage integrates quickly and seamlessly with existing enterprise systems. It can operate on a stand-alone basis or as a complete supply chain solution that can be upgraded easily and cost-effectively.

**Use:** The intuitive interface requires minimum training, and results in maximum productivity on the shop floor.

**Change:** Manufacturing Advantage resides on HighJump's Advantage Platform—one that empowers customers to embrace change and easily adapt the system to meet specific needs.



### **CHALLENGE:** Schedule Versus Reality

Product scheduling is a complex, difficult task. Schedules rarely account for the disruptions that can occur in production and are often outdated by the time they are generated. Inconsistencies between actual and scheduled production result in error-prone, manual methods for determining what to build and when to build it, contributing to miscommunication, errors and waste.

### **SOLUTION:** Manufacturing Advantage Scheduling Workbench

The Manufacturing Advantage Scheduling Workbench helps ensure the right products are produced at the right time. With this robust functionality, shop-floor planners and schedulers can effectively manage production against a set schedule. The workbench provides visibility into actual versus planned production, visibility to disruptions, and the tools for managing priorities on any build request in the plant.

### **CHALLENGE:** Dealing With Disruptions

Disruptions such as material shortages, down machines and poor quality issues affect production on an hourly basis. If noticed, supervisors go into “fire fighting” mode, and often use manual communication methods to address the problem. Further, as workers handle disruptions, efficiency is compromised and downstream operations are adversely impacted.

### **SOLUTION:** Manufacturing Advantage Event Manager and Scenario Generator

The Manufacturing Advantage Event Manager provides proactive notification to supervisors of shop floor disruptions, such as when machines go down or scheduled activities do not occur. Notifications are delivered via e-mail, pager, status lights or electronic reader boards. Once a supervisor is notified, they can use the Scenario Generator as a “virtual sandbox” to create alternate scenarios for re-routing and re-prioritizing work. With the Scenario Generator, order priorities, routings and assigned machine resources can be altered to determine the most effective way to handle disruptions. The predictive capabilities of the Scenario Generator prevent inefficiencies that often occur with disruptions and help plants quickly return to peak efficiency.

### **CHALLENGE:** Technology on the Shop Floor—Obtrusive, Difficult to Use

While most manufacturers want the benefits that come with shop-floor data acquisition, many hesitate to deploy a solution because the technology is obtrusive, difficult to use and requires too much training time. Because many ERP systems are not designed with shop-floor use in mind, manufacturers often rely on error-prone and untimely processes—operators write down data, and clerks key the data into the ERP system.

### **SOLUTION:** Manufacturing Advantage Shop Floor Touchscreen

Entering transactions into a computer should be secondary to the shop-floor employee’s main goal: that is, to build products. The shop-floor interface for Manufacturing Advantage was designed with this in mind, using automatic identification and simple screen images that are touch-enabled for quick and easy transaction capture. The interface allows for quick data entry and is as simple to use as an automatic teller machine. The result: more value-added time for shop-floor employees, more timely and accurate information, and less time and effort spent on training.



### **Control Where It’s Needed Most— On the Shop Floor**

With Manufacturing Advantage, companies can resolve the specific challenges they face in today’s demanding manufacturing environment. This comprehensive software solution consists of several components, which work together to provide a complete technology framework for seamless manufacturing execution. With real-time visibility into exactly what’s happening on the shop floor, and a single source of control, production operations run smoothly and efficiently.

**CHALLENGE: Communicating Work Instructions, Specifications and Drawings**

Communicating the shop floor schedule and relevant documentation to operators can be a manual, error-prone task. Some supervisors walk the shop floor and communicate the schedule verbally, while others use visual indicators such as grease or chalk boards. Additionally, documentation such as work instructions, specifications and drawings is often paper-based and centrally located, requiring operators to leave work cells.

**SOLUTION: Manufacturing Advantage Work Dispatcher and Shop Floor Document Manager**

The Manufacturing Advantage Work Dispatcher provides a single, electronic, real time source for work dispatch and review of work queues from the shop floor. Shop-floor employees use a single source of control to know which items and orders have the highest priority. The build schedule also can be displayed on shop-floor touch screens or on electronic reader boards on the shop floor. The Shop Floor Document Manager delivers documentation electronically via the touchscreen device. Documents can be delivered in many formats, including CAD drawings, photographs, videos and word processing documents. The Shop Floor Document Manager improves quality and reduces the waste associated with paper documentation.

**CHALLENGE: Operator Certification**

It is common that operators must be certified to conduct a particular test, execute an operational step, or run a machine. Ensuring proper certification can be time-consuming for shop-floor supervisors, and manual methods are usually insufficient in highly regulated industries that require audit trails on operator certification.

**SOLUTION: Manufacturing Advantage Operator Certification Manager**

The Manufacturing Advantage Operator Certification Manager helps ensure that operators have the appropriate certifications prior to starting a job or machine, by providing an interface to manage certifications. Operator certifications can be time-phased to enforce expiration of certifications. Additionally, Manufacturing Advantage provides an audit trail for changes to operator certifications to make sure operator certification processes will always meet regulatory requirements.

**CHALLENGE: Machine Status and Use**

World-class manufacturing demands the effective use of manufacturing assets. Manually capturing data related to machine availability, performance and quality is a time-consuming task, and the required data is often inaccurate or unavailable. This lack of visibility to machine usage leads to poor management decisions and ineffective uses of capital.

**SOLUTION: Manufacturing Advantage Asset Manager**

The Manufacturing Advantage Asset Manager delivers real-time visibility to industry standard Overall Equipment Effectiveness (O.E.E.) metrics. If the automation layer is under PLC control, the solution can automatically extract the machine usage data from the automation layer. In less automated environments, Manufacturing Advantage provides simple user transactions to assist in collecting machine usage data. It provides time-phased and real-time visibility to O.E.E. and its subcomponents: machine availability, machine performance and machine quality. The Manufacturing Advantage Asset Manager also provides visibility into asset usage to support effective management decisions.

**CHALLENGE: Traceability, Warranty and Recall Support**

Detailed traceability is a requirement in many industries, and new government regulations have prompted the need for greater traceability across industries. Many ERP systems do not support these new traceability requirements, and companies have resorted to inefficient, paper-based processes that increase the cost of warranty service and product recalls.

**SOLUTION: Manufacturing Advantage Genealogy and Traceability Manager**

The Manufacturing Advantage Genealogy and Traceability Manager provides the shop-floor execution and visibility needed to effectively deal with complex genealogy and traceability requirements. Using data from the automation layer or transactions from shop-floor employees, Manufacturing Advantage can tie lot numbers, serial numbers or other data back to the appropriate work order or demand signal. The robust data model and transaction history enable a variety of Web-based reports for viewing unit histories, genealogies and part traceability.

“As a tier one automotive supplier, we need to ensure that we have best practices-based processes in place to support real-time information availability and continuous improvement. We selected HighJump Software because of their ability to understand our just-in-time environment and how we could best meet our established goals with Manufacturing Advantage.”

—Greg Conrad  
Vice President of Manufacturing and Engineering  
North American Lighting

**CHALLENGE:** Pull Demand - Right Product, Right Place, Right Time

Increasingly, manufacturers are realizing the benefits of pull-based manufacturing systems. Commonly called lean, demand flow, just-in-time or kanban, this manufacturing approach dictates that real-time information be available and visible. Migrating from current manufacturing methods is difficult, as legacy or ERP manufacturing systems often do not support lean execution on the shop floor. This results in inefficiencies and limits production workers' visibility.

**SOLUTION:** Manufacturing Advantage Electronic Kanban

Manufacturing Advantage's Electronic Kanban functionality helps ensure that goods flow through the production process based on actual demand signals rather than a top-down schedule. Electronic kanban can be used across the plant, or with specific parts or feeder lines that use a pull system. Electronic kanban can be used to deliver raw materials directly to point-of-use locations as well as to communicate demand signals for feeder lines.

**CHALLENGE:** Acquiring Quality Data, Sampling and Interpreting Results

When left to paper or manual processes, collecting quality data on the shop floor is inefficient and prone to errors. Often, quality management cannot provide the exact specifications for quality data acquisition, and shop-floor employees aren't clear on what to test and which tests to perform.

**SOLUTION:** Manufacturing Advantage Quality Manager

The Manufacturing Advantage Quality Manager allows quality management to define test and sampling plans, and have test data collected on the shop floor with a touchscreen interface or extracted from the automation layer. Test plans and sampling rates can be tied to particular routes or customers to support customer-specific test plans. Samples that fall outside specified tolerances can trigger immediate event notification.

**CHALLENGE:** Executive Visibility

Timely and accurate access to production information is critical for manufacturing executives, who often manage operations based on untimely and inaccurate production data. Disparate systems and manual processes contribute to this lack of visibility.

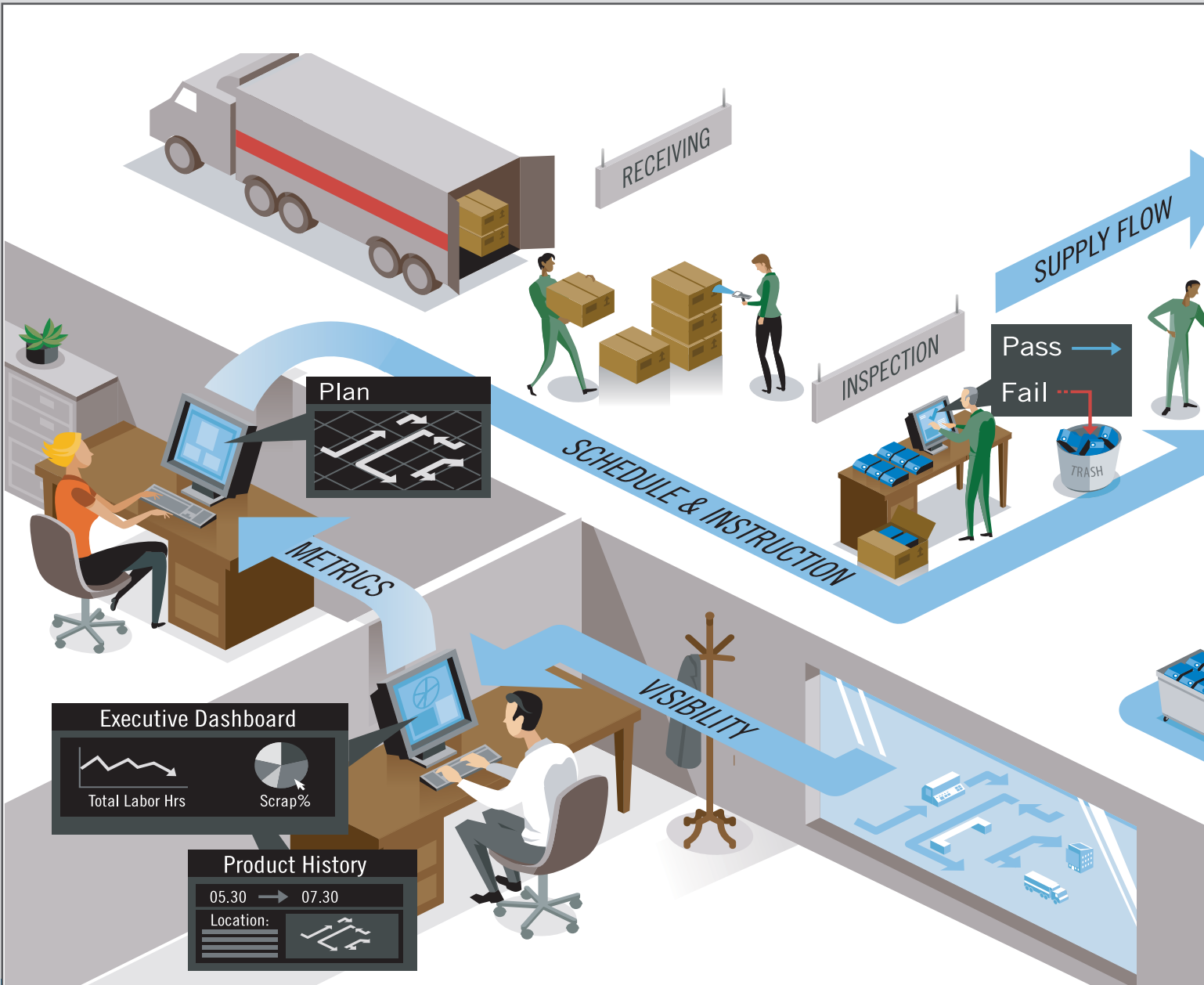
**SOLUTION:** Manufacturing Advantage Executive Dashboard

The Manufacturing Advantage Executive Dashboard provides accurate, real-time visibility to production data. Using Web-based portal reporting, executives can view actual versus planned production along with information about the number of customer orders satisfied, scrap, asset use and labor. This information is available in real time and over time, for historical comparisons. Any metric can be expanded to view detailed production transactions, allowing executives and managers to spot exceptions and quickly determine their cause of exceptions.

**Lean Enablement**

Key features of Manufacturing Advantage, such as event-based management and real-time information flow, combine with HighJump's intuitive user interface to support a lean execution philosophy. And, like other HighJump solutions, Manufacturing Advantage supports continuous improvement by allowing customers to reconfigure business processes quickly and cost-effectively. This is in keeping with lean manufacturing and inventory management initiatives critical to the ongoing success of today's businesses.

According to Greg Gorbach, vice president of collaborative manufacturing, ARC Advisory Group, it's clear that to be successful, companies must integrate manufacturing operations with overall supply chain flows and provide visibility to shop-floor activities and inventories. Companies also are demanding increased flexibility and real-time control in manufacturing processes. *"These benefits are precisely what HighJump's new MES solution is targeting."*



# Manufacturing Advantage



## Optimizing Production With Robust Functionality and Unmatched Adaptability

Manufacturing Advantage is the manufacturing solution that empowers plant managers and shop floor supervisors with the robust functionality needed to turn today's production challenges into tomorrow's competitive advantage. The solution's architecture has the flexibility to meet the unique needs of each manufacturer, and can be reconfigured quickly and belongs to the HighJump adaptable Supply Chain Solution that provides you with a low total cost of ownership.

### Key Features

#### Scheduling Workbench

- Electronic work dispatch
- "Virtual Sandbox"
- Machine loading and labor requirements

#### Production Manager

- Production reporting
- Electronic documentation access
- Labor and machine time tracking
- Genealogy and traceability

#### Material Flow

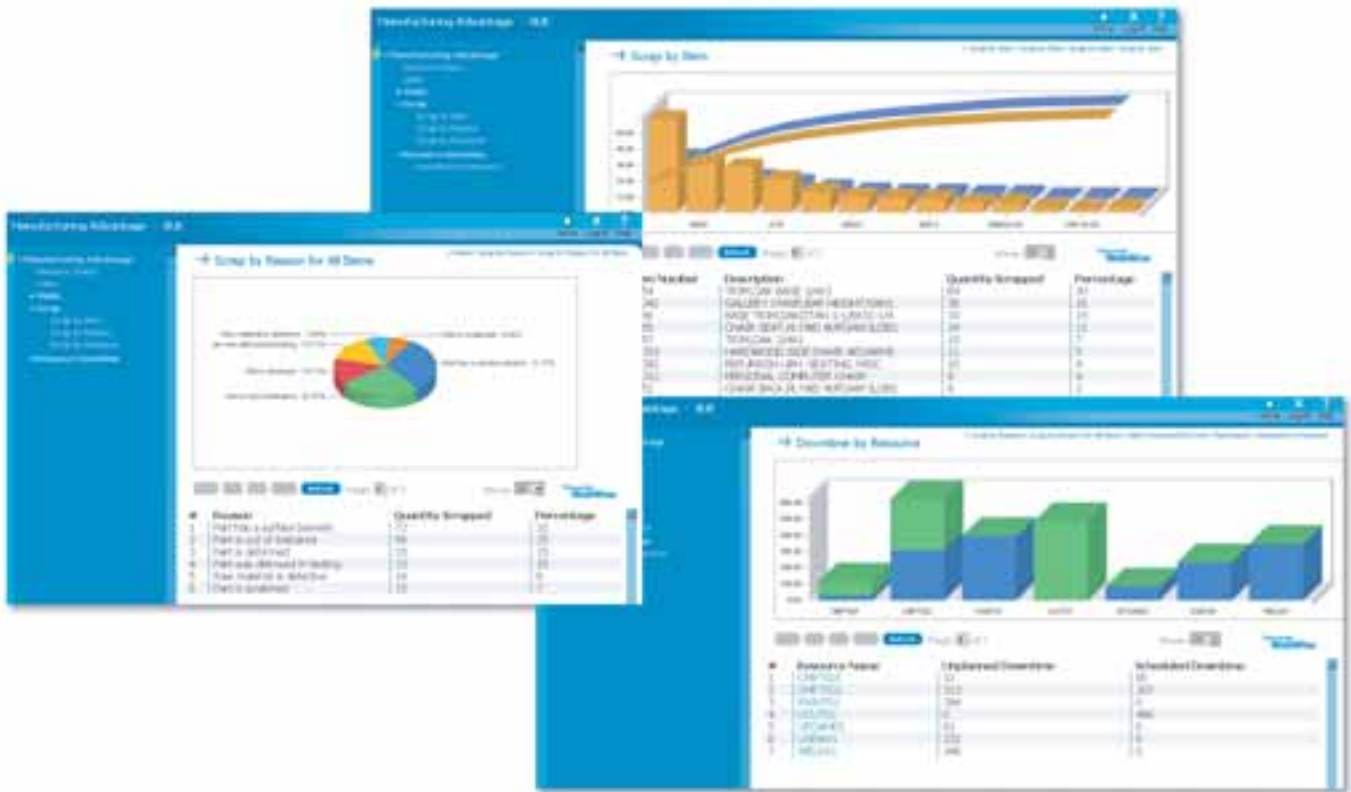
- Work-in-process tracking
- Raw material receipt and delivery
- Electronic kanban
- Material handling work dispatch

#### Visibility and Event Management

- Shop floor event notification
- Executive dashboard
- Overall equipment effectiveness
- PC browser or wireless PDA ready

#### System Integration

- PLC/automation
- ERP interfaces: SAP®, Oracle®, MAPICS®, PeopleSoft®
- Integration technologies: XML, Web services, TCP/IP sockets, OPC, ISA-S95



## Manufacturing Advantage Key Benefits

### Maximized Efficiency

Productivity goes up as employees streamline manufacturing processes and eliminate the potential for errors and waste.

### Reduced Operating Costs

Efficient and streamlined processes yield immediate, tangible reductions in costs associated with inventory, labor, regulatory compliance and quality.

### Decreased Cycle Time

Intelligent work dispatch, accurate execution and integrated manufacturing logistics work together to streamline material flow and decrease cycle times.

### Improved Quality

Validating process steps, executing quality management workflows, and delivering accurate work instructions to shop floor personnel all contribute to increased levels of quality.

### Enhanced Customer Service

Gaining real-time visibility of manufacturing operations vastly improves customer service levels through faster turnaround and more accurate deliveries.

## The HighJump Difference

HighJump offers the right combination of solutions—all designed to meet today's business challenges. From sourcing and fabrication to assembly and final delivery, HighJump empowers people with real-time information so they can proactively manage critical processes, prevent problems and respond to customers with unprecedented speed and accuracy. And, with a low total cost of ownership, HighJump makes it easy for companies to gain control over their manufacturing operations and customer relationships.

### Solutions from Source to Consumption

Manufacturing Advantage is a key component of HighJump's Supply Chain Advantage™ suite. These tightly integrated supply chain execution (SCE) solutions work seamlessly to control and optimize the flow of inventory throughout the extended supply chain—from source to consumption.

In addition to Manufacturing Advantage, Supply Chain Advantage includes solutions for warehouse, transportation and performance management; supplier enablement; collaborative inventory management; barcode or RFID-based data collection. Each solution features HighJump's trademark combination of robust, standard functionality and uniquely adaptable platform—the foundation for quickly and cost-effectively reacting to change.

For example, manufacturers can achieve visibility into goods movement across their extended supply chain with all stakeholders—customers, suppliers, freight forwarders and transportation providers. These entities use flexible supply chain infrastructure and

collaboration to reduce inventory and increase customer service levels. They communicate status updates, proactively manage by exception, and eliminate excess inventory and unnecessary buffer stock. These companies quickly configure their supply chain business processes to accommodate value-added services, incorporate changes in regulatory requirements, and ship on time and complete at the lowest cost possible. These companies' technology is an enabler of change and continuous improvement—not a deterrent. Upgrades are fast and technology evolves to meet industry-specific requirements.



## Driving Continuous Improvement: Adapt or Fail

Continuous improvement initiatives, such as kaizen or Six Sigma, require accurate data to drive critical improvement decisions. Manufacturing Advantage provides a detailed view of a plant's history, and its flexible architecture allows processes to be reconfigured quickly and cost-effectively as manufacturing operations change. By contrast, traditional MES solutions can be nearly impossible to change because they require expensive, time-consuming modifications to custom code. As a result, they become a barrier to operational excellence.

Manufacturing Advantage is built on the belief that software should readily support continuous improvement—not become an obstacle to it. HighJump has created a core architecture that empowers clients to easily adapt the system to meet specific needs—without the use of custom code—in a fraction of the time of conventional systems, and at a fraction of the cost. And because all changes are external to the core software, upgrades and support are not compromised.



## The Power of One

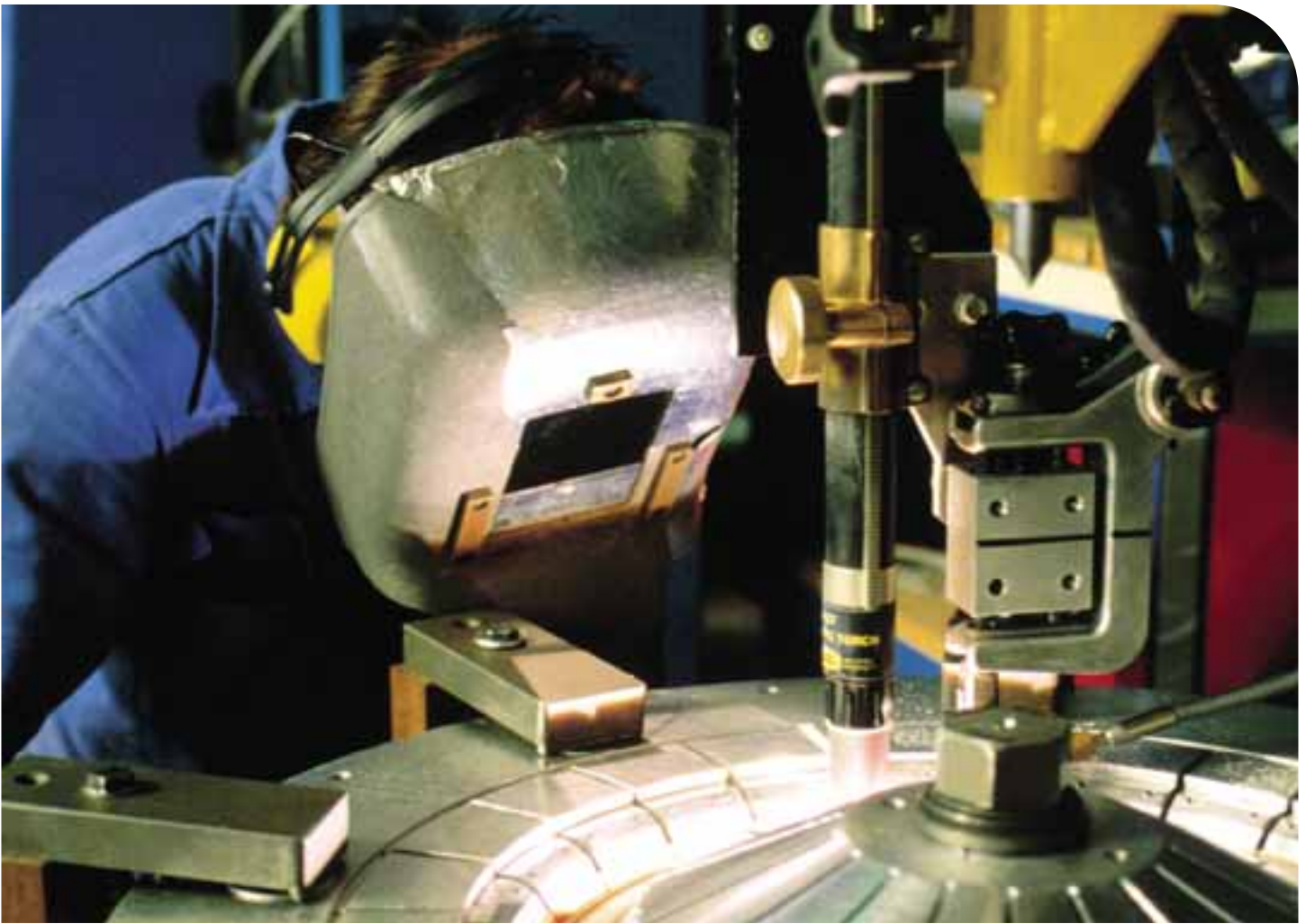
More than 700 HighJump customers worldwide are realizing competitive advantage while maintaining a low total cost of ownership. This is due to HighJump's unique Power of ONE™ approach to its solution suite. HighJump's Supply Chain Advantage Suite is built on ONE execution platform to facilitate integration and upgrades. All solutions share ONE core data model to help ensure consistent/shared data and ONE Web user interface to minimize training. And HighJump has ONE set of adaptability tools to enable fast, cost-effective configuration of every component of the suite as requirements change.

## Low Total Cost of Ownership

Manufacturing Advantage empowers customers to leverage existing enterprise resource planning investments through ease of system integration and robust functionality. And because HighJump allows customers to configure business processes quickly and cost-effectively to meet changing requirements—without the expense and risk of code-level modifications—companies are not tied to HighJump for changes. All changes are external to the core software, so upgrades and support are not compromised. The result: a low total cost of ownership.

## Best Practices-Based Implementation

A successful system implementation is essential to maintaining efficient operations and strong customer relationships. By combining robust, standard functionality with its best practices-based Advantage Implementation Methodology, HighJump consistently delivers implementations that are on time, on budget and on target with customer requirements. This is accomplished by making the delivery process predictable, focused and tightly controlled while simultaneously applying proven and acknowledged supply chain best practices through experienced industry professionals.



### **Unparalleled Commitment to Customers**

HighJump believes that its customers should expect—and receive—first-rate customer service before, during and after an implementation. HighJump’s commitment to the ongoing success of its customers is backed by world-class training and technical support.

### **Ongoing Training at HighJump University**

HighJump University maximizes the benefits customers receive from Manufacturing Advantage with in-depth training courses. These programs prepare teams to operate and administer the solution on a daily basis and to enhance the system as future needs dictate.

### **24/7 Worldwide Customer Support**

HighJump offers 24/7 staffed support for Manufacturing Advantage. HighJump’s Worldwide Support team is well-versed in the details of the solution and is ready to assist in troubleshooting and problem resolution. This team of full-time technicians understands manufacturing and combines that knowledge with the specifics of each individual application.

### **Annual User Conference**

Each year, HighJump’s customers, partners, employees and industry analysts meet to exchange ideas on the latest trends in supply chain execution for manufacturing and distribution. Customers learn how to leverage their solutions to achieve increased efficiencies and maintain a competitive advantage by participating in interactive product feedback sessions, analyzing customer case studies, and working with peers and industry thought leaders in one-on-one and focus group settings.

### **Support for International Operations**

HighJump offers full support for domestic and multinational companies.

## About HighJump Software

Forward-thinking companies entrust HighJump Software to power their supply chains. HighJump Software simplifies the art and business of creating, selling and moving products across global networks. HighJump Software helps more than 1,300 clients worldwide drive growth and manage change.



HighJump Software  
6455 City West Parkway  
Eden Prairie, MN 55344

Phone 952.947.4088 Toll free 800.328.3271  
Fax 952.947.0440 E-mail [info@highjump.com](mailto:info@highjump.com)

[www.highjump.com](http://www.highjump.com)  
[info@highjump.com](mailto:info@highjump.com)



**South Africa:**  
Tel: 083 600 9692  
Fax: 011 486 0112  
Email: [info@iwms.co.za](mailto:info@iwms.co.za)