

A hand holding a gear against a blue background with technical drawings.

WHITEPAPER

BPM IN THE MANUFACTURING SECTOR

Content

In today's competitive manufacturing environment, it takes more than incremental improvement and downsizing to consistently achieve revenue and profit growth. Forward thinking companies are taking action to use Business Process Management (BPM) to optimize operational performance in both primary and support processes.

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Introduction



Manufacturing firms have historically led the way in improving operational performance by applying incremental improvement techniques such as total quality management (TQM), Six Sigma and Lean. Similarly, many manufacturing firms have adopted information system solutions such as material requirements planning (MRP) and enterprise resource planning (ERP) systems. However, in today's competitive manufacturing environ-

ment, it takes more than incremental improvement and enterprises systems to consistently achieve revenue and profit objectives. Business Process Management (BPM) offers the means for manufacturing sector participants to optimize performance not just in operational processes such as production and supply chain – but also in supporting processes such as recruiting, financials statement preparation, and environment, health and safety.

Industry Overview

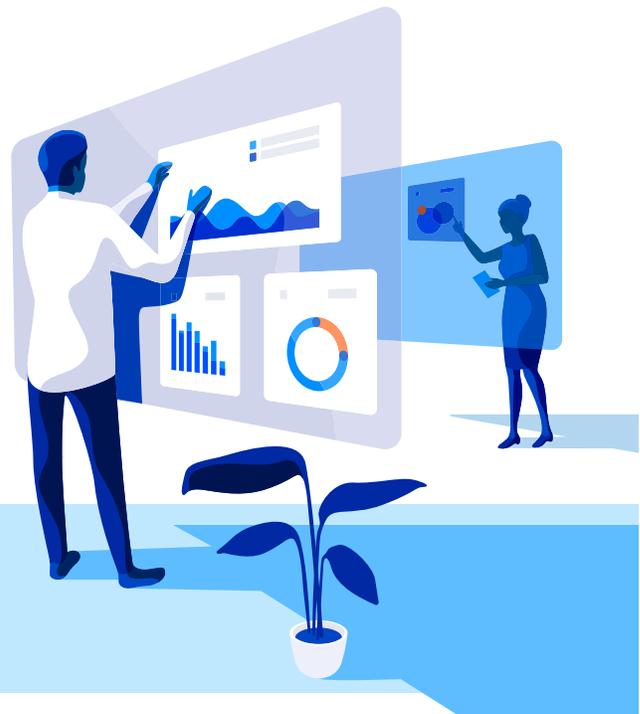
The manufacturing sector has historically been the backbone of most industrialized economies. However, recent demographic and environmental trends are now creating a new set of challenges for this sector. Three of the most significant challenges can be found in areas such as changing demographics, environmental concerns, and the rising costs of healthcare.

In terms of demographic changes, as the baby boomer generation reaches retirement age, there is a considerable skills gap in the workforce of many manufacturing firms. While firms are making some effort to bridge this gap, there is still much to do in bridging the skills and experience gap.

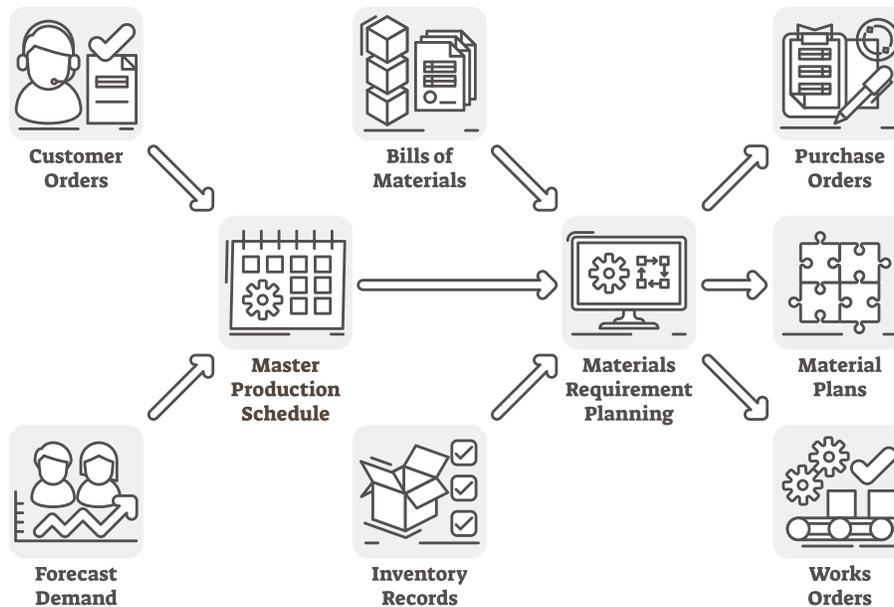
With respect to environmental concerns, the fact is that environmental regulations can be expensive – especially for manufacturing firms. Manufacturers need to be aware of these costs and the likely trends.

A third area which represents a challenge for this sector is the cost of healthcare. While the manufacturing sector is far from the only one to be hit, rising healthcare costs for workers is one of the factors that is putting an additional strain on already fragile manufacturing cost structures. There are also a number of traditional challenges related to areas such as maintenance, supply chain management and information systems that continue to be on the radar for the manufacturing sector.

The costs of preventative maintenance and keeping equipment functioning continues to be a top priority and a challenge in running a manufacturing facility. Well-designed and regular preventive maintenance can increase throughput



Material Requirements Planning (MRP)



Supply chain management has and continues to be a key challenge for industrial sector organizations. While many firms have attempted to increase supply chain efficiency, this has sometimes resulted in an increased level of complexity. The time has come for manufacturing sector firms to re-assess if the material and labor savings justify the coordination and oversight costs involved in supply chain management practices².

Many manufacturing companies believed that computerized systems could provide the solution to growth and profit challenges. **Material requirements planning (MRP)** and **enterprise resource planning (ERP)** system experts encouraged organizations to implement software programs and promised that the bottom line would take care of itself. Like many advertised panaceas, these programs often received a lot of hype, but contributed little towards the achievement of promised growth and profit potential.

For a measure of their shortcomings, one needs only to spend some time in an MRP scheduled manufacturing facility – especially during the last weeks of a financial quarter. Some manufacturing companies have spent many thousands of dollars in pursuing MRP and ERP only to see growth and profits decline due to uncontrolled operating costs³.

The combination of these traditional and emerging challenges in the manufacturing sector create an environment where “business as usual” is no longer an option. Forward thinking companies are now considering Business Process Management (BPM) as one way of optimizing operational performance.

Creating Value with BPM

Manufacturing firms have historically led the way in improving operational performance by applying incremental improvement techniques such as Six Sigma and Lean. Indeed it was the manufacturing sector that first adopted the combination of Lean and Six Sigma to improve performance. The integration of these concepts - [Lean Six Sigma](#) - was first published in 2002 in [Lean Six Sigma: Combining Six Sigma with Lean Speed](#), by Michael George.



The Lean Six Sigma technique has used the DMAIC (define, measure, analyze, improve, and control) phases similar to what is practiced in Six Sigma. However, Lean Six Sigma projects typically combine Lean's

waste elimination mandate with Six Sigma's focus on characteristics critical to quality.

However, the incremental improvement techniques of six Sigma and Lean Six Sigma have often been deployed independently of the information system initiatives such as ERP and MRP. An integration of incremental improvement techniques with BPM presents a real and present opportunity for manufacturing firms to improve performance. Gartner has proposed that to maintain their competitive edge, producers must implement "smart manufacturing." For CIOs and IT leaders, this means learning new skills, adopting new measures and redefining what "value add" means. Success in manufacturing relies on one of the core strengths of BPM involving an understanding of how to amass the right information and harness it to drive business forward⁴.

BPM can help manufacturing sector companies address competitive challenges and economic pressures, enabling them to not just reduce costs but also to improve value and speed-to-market. BPM can help not only to automate business processes, but it has the capability of better managing documents, and improve performance measurement.



What's needed is an evolution from a departmental driven focus on incremental improvement to a customer focused, process based view. Table 1 below depicts the shift in attention that's involved in this respect.

The Process Classification Framework developed and popularized by the American Productivity and Quality Council can serve as a good starting point for companies in making the transition to a process based view.

Selected examples of how BPM can be instrumental in improving operational performance include the following:

- ◆ Reduce costs and improve collaboration through document management in marketing.
- ◆ Reduce complexity in the warranty management process.
- ◆ Improve compliance adherence through process automation.
- ◆ Automate key transactions in the sales process to improve visibility and control.
- ◆ Improve the request to receipt process by automating paper based transactions.

Firms in the manufacturing sector can also benefit by automating back office processes for improved quality and reduced costs. Typical candidates in this respect include:

- ◆ Recruiting: from requisition to onboard.
- ◆ Financial Statement Preparation: from record to report.
- ◆ Treasury Management: from risk to mitigation.

BPM to Improve the ERP Experience

Perhaps the biggest impact area of any BPM is around the ERP itself. The ERP represents a goliath piece of software in most manufacturing firms. As such, the ERP almost always represents the biggest part of annual software spend for large manufacturing firms. Unfortunately for these companies, the ERP does not end up solving the entire problem. In fact, due to the complexity of the ERP software itself, it often creates a need for more software to automate tasks in and around the ERP. This is certainly not the news that CFOs and CEOs want to hear, but it is true.

It is not too difficult to guess who the biggest culprit is. That's right...SAP. It is not that SAP does not do a good job at what it does. SAP is the ERP market leader for a reason. It is extremely stable, highly secure, and used throughout the world. However, on the flip side, SAP is extremely com-

plex (we are talking about SAP ERP and not SAP Business One). This complexity is also very costly. Making changes and modifications in SAP almost inevitably requires a team of very expensive SAP consultants.

This is where a powerful yet nimble BPM system can solve a lot of problems. After spending many millions of dollars and several years on an ERP implementation, be it SAP or another, CFOs are understandably reluctant to embark on the installation of more unnecessarily complex software. BPM does not have to be complex nor does it have to be expensive. However, there are a few key things that buyers need to look at carefully when looking at closely integrating a BPM system with an existing ERP:



1. API – How good is the API on both sides? Is it easy to use? Is it highly responsive? Is it well documented?

2. Flexibility with Interfaces – This is often overlooked. A great API is very important but often times additional interfaces will need to be added to one or both of the systems. How will this be done and what tools are available to make this easy to do?

3. Elegance & Simplicity – ERPs are already too complicated. If you are adding another system to make tasks in the ERP easier then you will want this system to be lightweight and simple to use. Look for something that is intuitive, does not have a lot of different parts that you have to somehow “fit together,” and has a short learning curve.



The processes that most manufacturing companies create with a BPM to integrate to the ERP will often sound a lot like the very things that the ERP is supposed to do. In fact, often times they are. The difference is in the way it is done and at what cost it can be done. The secret to efficiently leveraging the BPM when integrated with an ERP is in making good use of web service users and then moving user interface points from the ERP to the BPM. Assuming

that your cost per user in the BPM is lower than in the ERP and assuming that interface development in the BPM is easier than in the ERP, this can result in a big savings.

Here are some of the processes that tend to work well in a BPM that is integrating with your ERP:

- ◆ Customer Price Change Request
- ◆ Master Data Creation Request
- ◆ SAP Transport Order Management
- ◆ SAP Data Change Request Process
- ◆ Goods Transportation Request Process
- ◆ Premium Freight Application
- ◆ Supplier Creation or Modification Approval
- ◆ Simulation Work Request
- ◆ Test Lab Requests
- ◆ Non Conformity Charge Process
- ◆ Promotion Cost Approval Workflow
- ◆ BOM Modification Request in SAP
- ◆ Routing Time Change Request for SAP
- ◆ Marketing Sample Request
- ◆ Manual Invoice Approval Request

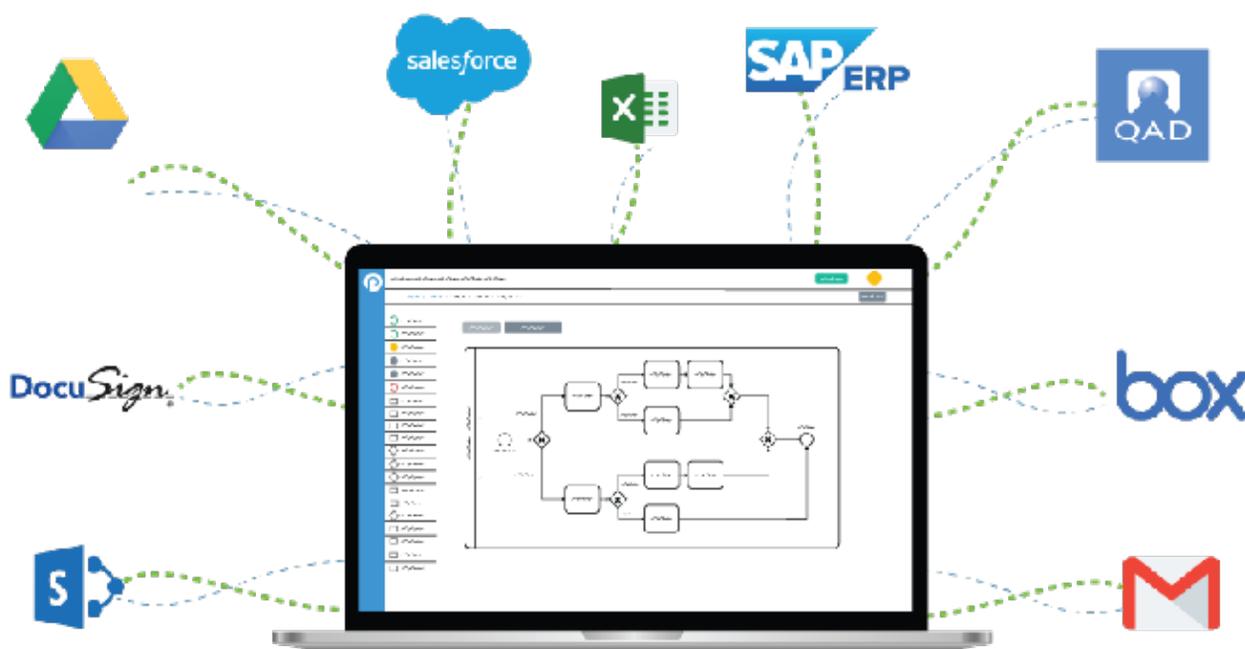
Of course, this list is not at all exhaustive, but it will give you a good way to start thinking of the many areas that you may want to use a BPM system to intersect with and complement your ERP system.

Another area that can benefit significantly from BPM is an end to end perspective on customer touching processes. Looking at the “complaint to resolution process” and the “Warranty claim to resolution process” from an end to end perspective and viewing how work flows across departments can provide a meaningful and refreshing outlook to drive collaboration. In the current very competitive business environment, manufacturing sector companies have the opportunity to take action in using Business Process Management (BPM) to optimize operational performance in both customer touching and back office processes.

About ProcessMaker

ProcessMaker is low-code BPM and workflow software. ProcessMaker makes it easy for business analysts to collaborate with IT to automate complex business processes connecting people and existing company systems. Headquartered in Durham, North Carolina in the United States, ProcessMaker has a partner

network spread across 35 countries on five continents. Hundreds of commercial customers, including many Fortune 100 companies, rely on ProcessMaker to digitally transform their core business processes enabling faster decision making, improved compliance, and better performance.



Find out how we can elevate your business today.
Learn more at processmaker.com

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