



# PRATT & WHITNEY CANADA

## SAP BUSINESS TRANSFORMATION STUDY

### AT A GLANCE

<b>Industry</b>	Aerospace
<b>Employees</b>	10,000
<b>Location</b>	Quebec, Canada
<b>Web Site</b>	<a href="http://www.pwc.ca">www.pwc.ca</a>
<b>SAP® Solution &amp; Services</b>	SAP® xMill

Pratt & Whitney Canada is a world leader in the design, manufacture, and service of engines powering helicopters and aircraft and offers auxiliary power units and industrial gas turbines. A United Technologies Corporation company, Pratt & Whitney Canada operates in 193 countries and has more than 40,000 engines in service. United Technologies is a diversified company providing high-technology products and services to the global aerospace and building industries.

#### Key Challenges

- Get a handle on increasing costs
- Establish a central system to gather statistical process control data
- Institute real-time data processing
- Integrate data
- Conduct adequate Six Sigma analysis on “lean” initiatives
- Reduce scrap, rework, repair, and nonconformity

#### Why SAP

- More mature solution with excellent track record of accomplishment
- Open-standards platform that could integrate existing solutions and support IT strategy
- Potential for management to have dashboard visibility into all aspects of the operation
- Lower total cost of ownership
- More cost-effective and rapid development of industry-specific product innovation

#### Implementation Best Practices

- Senior executive participation
- Sophisticated culture change procedure
- End-user participation from the outset
- Sophisticated training and user support

#### Low Total Cost of Ownership

- Lower software development cost over time
- Lower recurrent maintenance costs
- Development of an integrated data network at lower cost

#### Strategic Benefits

- Deliver higher-quality products at reduced cost
- Extend process certification to the shop floor and suppliers
- Provide real-time, actionable intelligence to improve quality
- Create more productive data gathering on the shop floor at a lower total cost of ownership

#### Five-Year Financial Benefits

- Estimated annual savings include payback of less than three years and an internal rate of return in excess of 30%
- Savings are expected in six major areas:
  - Fewer incidences of internal scrap rework and repair
  - Lower supplier scrap resulting in lower material prices
  - Decreases in quality notification (QN) items
  - A reduction in warranty expense
  - Improvements in engine retest ratios and shop productivity
  - Reduction in the probability of rejected products



### Pratt & Whitney Canada Improves In-Process Intelligence

Pratt & Whitney Canada, poised to begin manufacturing of a new generation of engines, realized that greater speed of production and real-time analysis of parts quality would be necessary to sustain this initiative. Toward that end, the company wanted to improve in-process intelligence about critical-to-quality (CTQ) parts.

The SAP® xApp™ Manufacturing Integration and Intelligence (SAP xMII) composite application integrates information from different applications used on the shop floor. In addition, the statistical process control (SPC) Web functionality of SAP xMII enables integration of the information flow throughout the value chain.

### Implementation Process and Best Practices

The implementation process for SAP xMII is structured to achieve the desired level of process control and provide a framework for realizing the strategic benefit of process certification. A steering committee directs the process and exercise controls on decision making. The governance structure is established to set goals, monitor achievement, and make certain that the business results of process certification are realized.

Involving the business owners is also paramount. Creating defined phases for the implementation, allowing for small wins and communicating them to the various stakeholders, is crucial. Most important, the phased approach decreases the inherent risk of the implementation and increases its speed to value.

### Greater Control and Data Quality

SAP xMII enables the collection of data demonstrating that the quality control for each process is working – and that overall manufacturing quality is trending toward Six Sigma (with each process achieving Cpk greater than 1.33). One of the greatest challenges is the existing number of coordinate measurement machines (CMM) and the reports generated. SAP xMII helps integrate all the CMM data within its existing implementation of the SAP® ERP application. As a result, SAP xMII helps realize value in quality management, Six Sigma analysis, and data transfer.

Since SAP xMII integrates data flow throughout the process, the stage is set for superior quality cost management because of less internal scrap rework and repair and lower supplier scrap, resulting in lower material prices. In addition, SAP xMII helps decrease the number of quality notification items as well as warranty expense from fewer customer rejections.

### In the Long Run: Continuous Performance Improvement

SAP xMII enables the creation of better processes. Higher-quality products will result in lower levels of scrap returns and costs and higher levels of customer satisfaction, increasing revenue and freeing up cash flow for future funding.

Key to the long-term goals is the integration of the information and intelligence from the CMM with the central SAP ERP application. This way, operators have the right data to monitor improvements and improve output quality. To make certain that operators use SAP xMII most effectively, end-user requirements are used during the implementation process to construct the operator dashboard. This dashboard is a key element in making the system as easy to use as possible.