

ETO is a process, not a product

Engineer-To-Order system gives more flexibility than traditional ERP systems



A Tier 1 automotive manufacturing supplier; a leading pulp and paper manufacturer; a custom-tool manufacturer; a major plastic moulder... these four distinct Engineer-to-Order (ETO) companies, all recognised the need for process improvement and arrived at the same conclusion. All export a large percentage of their product and brief case studies reveal that the process, rather than the product manufactured, is the relevant issue in technology selection. The manufacturing process supersedes the manufacturing sector.

■ **REKO International Group, Windsor, Ontario, Canada**

It is essential to have an accurate picture of project costs. Assuming capacity and delivery performance are equal, what makes the difference is the ability to set a competitive price. Reko International Group, a supplier to Tier-1 automotive industry, needed to improve its visibility over costs, capacity, and work-in-process. Reko currently employs nearly 500 people and is a respected presence in many areas of the metal cutting industry worldwide. Reko's customers are leaders in the consumer and industrial products and aerospace industries. The company has over 300,000 square feet of manufacturing space in ten production facilities located in the greater Windsor, Ontario area. Several years ago Reko's management team recognised that its existing business sys-

tems could not handle the company's requirements in a demanding environment.

■ Existing business systems were not integrated, which forced maintenance of duplicate data sets and manually re-keying information from one system into another. There was no visibility of available capacity. This led the company to use costly outsourcing which could have been avoided.

■ There was no way to measure actual vs. planned performance on projects

After an 18-month evaluation that began with a list of about 60 different software vendors, Reko selected Encompix, a business unit of MADE2MANAGE for its engineer-to-order focus. "Every other vendor told us that they could incorporate the results from Microsoft Project into the manufacturing system, but Encompix was the only vendor to show us how it would work. Microsoft Project is great for what it does, but it couldn't give the visibility over hundreds of projects," said Lido Zuccato, Manager of Process Planning.

Managers can now see the overall profitability of a project. They have complete visibility in time and dollars. At the weekly production meeting, visibility into all projects enables Reko's management to take corrective action before problems become critical. This technology solution has ensured that worldwide product exportation is enhanced.

■ **GL&V, Dorval, Quebec, Canada**

GL&V is one of the largest companies

Thomas R. Cutler is the President & CEO of Fort Lauderdale, Florida-based TR Cutler, Inc., the largest manufacturing marketing firm worldwide - www.trcutlerinc.com.

specialising in the design and manufacture of engineered proprietary equipment for the pulp and paper, mining and other industries. GL&V currently employs some 1,300 people worldwide. From state-of-the-art manufacturing facilities in Canada, the US, and Sweden, the company serves clients such as International Paper and Georgia Pacific.

In 1986, GL&V successfully made its initial public offering allowing the company to accelerate its growth rate, especially by acquisition. These acquisitions have provided GL&V with one of the largest installed bases of pulp and paper equipment. Each acquisition had its own business system; it became increasingly difficult to exchange data and ensure consistency. GL&V was running an old system using "green screen" AS/400 software. The type of machines designed and built by GL&V are engineer-to-order and built to customer specification. Most traditional ERP systems are designed to support companies that build standard products. Such systems plan inventory based on sales orders and forecasts, purchase material for inventory, and issue the material to work-in-process (WIP). Finished goods are moved from WIP to finished goods inventory before shipment to the customer.

"This is fine if you are making standard products," said Sonia Lebot, Corporate Business Systems Manager for GL&V. "We don't make standard products, and they don't go through inventory. We make capital equipment specifically designed to customer specifications, and ship directly from WIP." The difficulties caused by trying to use traditional ERP systems forced GL&V to develop "work-arounds" for hundreds of daily transactions. Lebot said, "It was very difficult to justify a change; we had already spent over one million dollars implementing the previous system. Most companies don't want to admit their mistake in implementing the wrong software."

Lebot headed the selection committee that included an implementation team. Learning from previous experience, the team's first question to potential software vendors was: "Does the system force goods to go into inventory before shipping to the customer?" "If the answer was yes," Lebot explained, "We didn't continue with that vendor." Initially, the committee did not even realise they were actually looking for an engineer-to-order (ETO) system.

The committee evaluated nine systems before narrowing the field down to three finalists. One of the finalists was dropped from consideration because they didn't have an estimating module. Lobot emphasised, "As each

job is unique, new bills of materials and routings are created every time. We are looking to streamline our processes and reduce the time taken to create BOMs and routings; strong estimation and quotation capabilities were critical because in our business we have to respond quickly to many RFQs. It is essential that the original estimation is tracked throughout the system."

The site in Vancouver went live in April 2001. Currently GL&V has 120 users running the same ETO ERP systems as Reko on an NT platform. Because all of the systems are now integrated, GL&V has improved visibility and tracking of jobs, especially in the area of monitoring actual costs against the original estimate.

■ Machines-Outils Henri Line Inc., Granby, Quebec, Canada

Located in Granby, Quebec, Machines-Outils Henri Line manufactures unique custom-built machine tools with

CNC gantry-type milling machines. A \$30-million annual turnover, 200+ staff, and a focus on engineering, quality control, assembly, testing, and service define this organization. In March 2003,

Henri Line went live with a new Enterprise Resource Planning (ERP) system designed specifically for the engineer-to-order (ETO) manufacturer.

"We were using several systems for engineering, bills of materials, purchasing, accounting, and planning," explains Michel Dufresne, MIS director for Henri Line, who selected the same software as GL&V. "The new ETO ERP system allows us to integrate all of these into one system. The data is entered only once." The products manufactured by Henri Line often take between eight and fourteen months to engineer and manufacture. "It often changes, even after the customer gives us the purchase order and we need to track the project advancement. The ability to search by implementation is one of the major improvements we will see with our new system." This level of accuracy is critical in providing Henri Line with the capacity to build a more accurate quote. The ability to track the costs of building a machine, including labour and material, allows the company to closely monitor a project's profitability.

Dufresne says Henri Line chose its ETO ERP system because of these features:

- A focus on ETO companies
- Milestone billing (billing after each phase is completed)
- True costs attributed to projects (engineering alterations can be financially quantified)

“ This technology solution has ensured that worldwide product exportation is enhanced ”

- Creates items in bill of materials without part numbers (a key element of ETO ERP)
- Ships from work in progress (WIP)

Henri Line finalises a machine at the customer site, it is never actually entered into inventory or shipped from inventory.

■ Weber Manufacturing, Midland, Ontario, Canada

Weber Manufacturing is a preferred tool supplier for plastic moulders around the world. The company develops, designs, manufactures, and tests moulds using the very latest in CAD/CAM engineering and high-speed 5-axis CNC machining technology. As Weber grew it implemented stand-alone computer systems to address the needs of various business functions. As these systems were developed, independent of each other, data often became inaccessible, redundant, inconsistent, and outdated; departments still relied on manual systems. Management quickly realised that the combination of manual and obsolete computer systems could not effectively support the business or provide a platform for the future. Doug Gould, Vice President of Administration at Weber Manufacturing, recalls: "In finance we used an old DOS-based accounting system. We used various systems, both manual and computer-based, for order entry, contract management, job costing, purchasing, and material control. For low value, high usage parts we operate a stockroom, but there was no system in place to manage that inventory. Shop labour hours were entered into another separate system that would accumulate hours and costs by job. Those aggregate costs were put into the accounting system at the end of each month resulting in more duplicate data entry with the potential for error. We collected detail by employee, but we couldn't get the detail into or out of the accounting system."

Gould said, "We used a variety of sources to identify potential ETO software vendors including the Internet and trade publications. We collected literature conducted preliminary research on about 20 companies. We narrowed this down to four vendors that we invited in for presentations and demonstrations. We wanted a flexible, multi-currency software package that dealt with the operational issues faced by ETO manufacturers, including revenue recognition, progressive billing, our Canadian tax structure, change order management, and part numbering flexibility."

As Weber grew and started taking on larger contracts with slimmer margins; the risk to the company increased. It became clear to senior management that improved cost visibility would be essential to ensure that projects remained profitable and the company competitive. Gould

suggested, "We always felt that purchasing would represent our biggest challenge, and opportunity, as it had operated in a totally manual environment. Our purchasing manager's assistant was anxious to be part of the implementation team and her willingness to take on the challenge and sell all the changes that moved to an integrated system entailed, was critical to our success." Weber went live with Encompix in early 2003, with a 30-user system. Gould knew that, "The provided structure and a proven implementation process, was the key reason why things went so smoothly. If you don't implement systems for a living you don't know how to go about it properly."

The implementation of a new ERP system is really about improving the business; it is not a technology initiative. After running the system for nearly two years Gould tells some of the benefits Weber has seen: "The accounting side has seen a tremendous improvement. Before it would take us 10 working days to close our books; now we do the same in less than half the time. Accounts Payable work is cut in half, because the information coming in is validated through the up-front processes. "In terms of the whole business, the key words are speed and accessible. If you think about it, we don't create any more information than we used to, we just share it, quickly. For example, at production meetings, the new ETO ERP is projected on a screen to facilitate a live review of job costs when needed. On a daily basis supervisors can monitor their people in terms of the hours worked against individual operations. A business unit manager and our accounts receivable person can share the specifics on a customer account."

Determine the process for manufacturers

The ETO Institute (www.etoinstitute.org) provides some guidelines, resources, and on-line discussion groups for Engineer-to-Order manufacturers and exporters to find the best technology solutions that are specifically designed for their manufacturing process, rather than by the industry sector. Ensuring maximum cost efficiency in these operations allows for enhance exportation opportunities worldwide as the process is streamlined and visibility of the operation maximised. **2.0**

The author is also the founder of the Manufacturing Media Consortium of two thousand seven hundred journalists writing about trends in manufacturing. Cutler is the lead spokesperson for the ETO Institute (www.etoinstitute.org). Cutler is also the author of The Manufacturers' Public Relations and Media Guide. Cutler is a frequently published author within the manufacturing sector; more than 200 feature articles annually, can be contacted at trcutler@trcutlerinc.com