SYSPRO™

GLOBAL TALK

EDITION 9

INDUSTRIAL MACHINERY & EQUIPMENT

TACKLING TRADITIONAL CHALLENGES WITH ENHANCED SOLUTIONS

MANUFACTURING the Pipe Dream

Pierce Pacific Grows on SYSPRO Foundation

TECHNOLOGY INSIGHT
with Phil Duff

Embracing Innovation

"One of the greatest discoveries a man makes, one of his great surprises, is to find he can do what he was afraid he couldn't do."

– Henry Ford

There's no doubt we're living in a brave new world. The boundary between digital and physical continues to blur, new technologies are disrupting the status quo and digitization is opening the door to infinite possibilities - with profound implications for the way companies will do business going forward.

As we find ourselves facing rapid technological advances, it becomes even more important to acknowledge the innovation happening around us – and to embrace and improve on it wherever possible. Daring to do things which previously seemed impossible has become critical.

In fact, businesses which don't exploit the opportunities offered by new technologies run the risk of falling behind their competitors. However, innovation isn't about taking unmanaged risks, it's about working smarter to stay relevant and finding strong partners who can help us achieve the things that we perhaps think we can't. Those that recognize these technologies as opportunities for growth and wholeheartedly embrace them are sure to prosper.

In this brave new world, supply chains will become conduits of information that foster transparency and collaboration among factories, suppliers, retailers and customers. Ultimately, people will be freed up to do what they do best, use their creativity and imagination to innovate, create, build stronger relationships, service existing customers and source new ones.

During the next decade, I believe the term 'supply networks' will become very familiar as digital technology transforms the way supply chains function. Today's digital supply chains will be seen as an intermediate stage between the traditional supply chain and supply networks embedded in a fully digitised, industrial new age.

Typical of the technology arena is the barrage of buzzwords and 'what if?' scenarios that are, understandably, confusing. Yet manufacturers need to see through this - to understand clearly where they stand in terms of digital supply chain technology, to discern where investment in technology will deliver the most strategic benefit and to plan accordingly.

Currently, a digital supply chain comprises the same basic elements that have existed since organized commerce began. In a left-to-right, linear sequence these are: plan; source; make; and deliver. Others may be included, such as: develop; return; and support, but the point is they are discrete, sequentially linked operations. Activity in a supply chain element depends on information coming from another element in the sequence.

Almost every modern manufacturer's supply chain is a digital supply chain to some extent, as companies by now have digital technology involved in one or more of these elements. In the best examples, every section of the chain uses digital technology to enhance operational performance and those manufacturers have engaged with ERP systems to process and harness the data produced.

Nevertheless, supply chains are incredibly complex and no manufacturer yet operates a supply chain that is fully digitised, with end-to-end visibility and operating in a dynamic network, but the day is fast approaching when everything we do will be driven by technology.

With SYSPRO's focused approach to adopting the emerging technologies that are adding value, simplifying complexity and providing a competitive advantage, no one is better equipped to take this journey towards digitization with you.

Please read on to see how some of our Industrial Machinery & Equipment customers are using SYSPRO to embrace digital technology and optimize their supply chains.

Phil Duff
CEO
SYSPRO

INDUSTRIAL MACHINERY AND EQUIPMENT INSIGHT

By Roger Landman

Tackling Traditional Challenges with Enhanced Solutions

The Industrial Machinery and Equipment (IM&E) manufacturing sector has a number of unique challenges, many of which have been around for some time. However, with better and better solutions now available to address these challenges, considerable progress is being made in the quest to increase efficiencies and effectiveness.

While it's true that generic Enterprise Resource Planning systems may be adequate for simpler manufacturing situations, Industrial Machinery and Equipment manufacturers need more. They seek industrial strength ERP solutions with strong capabilities for complex equipment specification and production, comprehensive quoting and estimating, integrated quality management, and meticulous traceability.

One of the leading challenges these manufacturers face is the cost of generating quotations and improving conversion rates. A substantial amount of time is spent calculating costs to offer accurate quotations, and this often results in a cost to the business – yet it is critical, as most of the work in the factory is won through the quotation process.

It's simple: get the quotation process wrong, and the business will shut down through loss-making projects or insufficient work. To survive and increase the conversion rate, the business needs to be as accurate as possible with its quotations.

A further challenge is the increase in client demands on principal contractors, creating an expectation for sub-contractors to supply the necessary assurance that the quality will exceed minimum standards. As a result, sub-contractors are compelled to implement and maintain fully-fledged Quality Management systems.

The combination of these requirements with the adoption of digital technology in the IM&E industry offers an opportunity for businesses to automate and significantly improve their processes. Although the IM&E industry tends to be highly traditional in its work methods, as Phil Duff has explained in this Global Talk, taking advantage of the digital technologies offered by an ERP solution will significantly improve the efficiencies and effectiveness of IM&E manufacturers' people and processes.

As mentioned above, enhancing the quotation process and consequently improving the conversion rate is a priority. Here are some technological innovations to drive these improvements:

- **The Configurator** is a program that provides an automated online product design and rapid quotation system to the potential customer. It has already been integrated with a number of manufacturing systems, including the MRP system.
- **MRP (Materials Resource Planning)** is a system that focusses on enabling a careful material planning and ordering process that will significantly improve cost controls on a job. Without proper controls, a job can quickly overspend or end up with shortages of key components. MRP is designed to eliminate this issue.
- As the digital automation of the industry progresses, **CAD Integration** will become more and more of an industry norm. CAD Integration allows organizations to access and print any drawing format as well as to work on drawings on their own CAD systems. This will certainly speed up the quotation process, as modern CAD programs offer built-in costing software.
- Most of the factories in the IM&E market sector are a combination of specialist and generalist equipment, requiring the factory to be flexible enough to tackle any job. As a result, the development of specialist skills is a significant competitive advantage. A powerful addition to help optimize factory output and reduce job costs is Manufacturing and **Operations Management (MOM) software**, which balances loads between specialist and generalist equipment and onto specialist artisans, and increases overall factory efficiencies. Implementing this software will lead to more accurate delivery dates through the 'capable-to-promise' functionality.

To exploit the potential of these features, IM&E manufacturers need end-to-end integration across the entire business cycle, and this can only be achieved through an integrated ERP system that understands and specializes in manufacturing.

INDUSTRIAL MACHINERY AND EQUIPMENT INSIGHT

SYSPRO AFRICA

Manufacturing the PIPE DREAM

When Hall Longmore began manufacturing welded steel pipes in 1924, it paved the way for the development of a major engineering enterprise which has become the largest operation of its kind in sub-Saharan Africa, exporting to more than 30 countries around the globe.

Today the company owns manufacturing facilities offering modern, industry-leading equipment and process control for the production of large-bore welded steel pipes. Applications range from the transportation of water, gas, petrochemical product and slurries to piling and structural steel fabrication.

Hall Longmore is involved in the manufacture and processing of pipe for a number of environmentally significant water projects throughout southern Africa. As a relatively dry region, southern Africa is extremely reliant on these projects for the transportation of water. Rand Water, Amatola Water, Umkhayakude District Municipality, Bloem Water and the Medupi Power Station are just some of the organizations that have benefited from Hall Longmore products.

The company's state-of-the-art manufacturing facility features the most modern pipe-making equipment and technology to ensure that stringent quality standards are maintained. Hall Longmore's management team recognized that this commitment to excellence needed to be supported by an ERP system with the same level of expertise and flexibility.

Tommy Truscott, Financial Director of Hall Longmore, says effective reporting structures and an accurate Bill of Materials were among the most important requirements. When the Barnes Group acquired Hall Longmore in 2014, a number of entities within the group had already implemented a SYSPRO ERP system.

"To improve our costing models and streamline reporting, we entered a three-month user acceptance testing phase and went live with SYSPRO 7 in January 2015," Truscott says.

Hall Longmore chose SYSPRO as a value-for-money system that provides a simple, user-friendly solution. There is little need for extensive functionality but an immediate response to queries and useful support is critical to Hall Longmore management.

"Professional support is a critical factor. In our business, we need to know that when we ask a question we will get an answer. SYSPRO's responsiveness to our queries takes the guesswork out of ERP," he says.

SYSPRO Reporting Services (SRS), using the well-known

Crystal Reports Engine, enables the custom design of reports to virtually any level of complexity, tailored reporting options, preferences and layout features. SRS has given Hall Longmore the freedom to design and create reports that are relevant and useful for the various functional areas of the business. The improved access to accurate data means that management is better equipped for rapid decision making to meet their internal organizational needs as well as the external industry-based requirements.

Linda Fischer, Hall Longmore's Systems Project Engineer, explains: "SYSPRO 7's Update 1 has significantly improved our reporting processes. Selective information is available to authorized users and saved reports can be shared among several users or groups."

Cost and time savings are realized through built-in drivers, report archiving, and rapid development by eliminating the need for external report designers as well as through protection from changes in technology upgrades.

Hall Longmore has found that access to information has been significantly enhanced since the SYSPRO 7 implementation. Reports are easier to compile and distribute and it is possible to enter the Accounts Receivable Module without clicking through multiple screens.

A pipe tracking system was written to trace the steel from when it is delivered to the Hall Longmore premises right through to when it is laid in the ground.

"SYSPRO's ability to integrate with other systems and the willingness of SYSPRO developers to find workable solutions made this possible," says Fischer. "This has enhanced our visibility into our manufacturing process."

"Real costing understanding and a precise grasp of a Bill of Materials are rare skills," explains Truscott. "In the metal fabrication industry, the BOM is the lifeblood of a successful business."

Visibility and control over the business and its manufacturing process delivers a net saving in time as well as reduced costs.

"As a result of the similar technologies used by SYSPRO 7 and real-time operations management software Wonderware, our two systems integrate seamlessly and this gives us a far more detailed knowledge of our processes," Tommy Truscott, Financial Director

INDUSTRIAL MACHINERY AND EQUIPMENT INSIGHT

SYSPRO CANADA

Saltworks

Technologies Cleans Up

with SYSPRO

Based in British Columbia, Canada, Saltworks Technologies is a privately-held water technology company that designs, builds and operates industrial wastewater treatment plants. Its efforts are focused on zero liquid discharge, brine concentration, and industrial wastewater desalination. Saltworks Technologies' mission is to provide reliable and economic water treatment solutions to a wide range of industries.

With plants sold worldwide and repeat orders from major multinational organizations, Saltworks has an established history of delivering solutions that treat the most complex brines and wastewaters.

The company won the Clean Technology Category at the British Columbia Export Awards in 2017 and was named in the annual Global Cleantech 100 this year. This publication lists the top 100 companies in the world with innovation and technology capable of making a significant positive impact in the cleantech sector.

Saltworks Technologies' Chief Operating Officer, Joshua Zoshi, explains: "Our manufacturing process is as complex as that of assembling a jet engine, and our components come from many different suppliers and many different geographical locations. This necessitates a high degree of control and visibility."

A robust, integrated solution

Saltworks' steady growth necessitated a search for a robust, integrated toolkit to support higher production capacity. The intricacy of the Saltworks manufacturing process and the abundance of components required to produce the technologically advanced systems created the need for a meticulous inventory management system.

The decision was made to move away from a spreadsheet-based approach to production management and Saltworks began to investigate various ERP options. The availability of local regional support, strong financials, and specific knowledge of manufacturing industry frameworks led the company to a SYSPRO solution.

One of the criteria that Saltworks considered when they were investigating ERP options was the provision of an on-premise solution. "The security of our data is paramount, and we are most comfortable knowing that it resides within our control. Although SYSPRO does offer cloud-enabled solutions, we were pleased to discover that we had the option of cloud, on-premise or a hybrid deployment," Zoshi says.

Additionally, during the selection process, Zoshi and his team were adamant that their chosen ERP system would not be cobbled together from a myriad of different vendor tools.

"What counted in SYSPRO's favor was the way in which the solution has grown organically and offers a single platform," says Zoshi. "SYSPRO does not consist of an array of disparate parts and we wanted to avoid the risks associated with add-ons from numerous vendors."

A number of additional factors secured the selection of SYSPRO. "Our investigations revealed SYSPRO's impressive customer retention rate and solid reputation within the ERP marketplace. We also received several glowing referrals from respected sources and were keen to have local support," Zoshi explains.

Keeping pace with ongoing evolution

With its ability to provide advanced water treatment solutions across a wide range of industries, Saltworks is a constantly evolving organization. This growth requires a system with a specific focus on supporting the manufacturing process as it expands and transforms.

SYSPRO's multi-tier architecture ensures that its functionality can be continually extended to meet the ever-changing business goals and objectives, as required.

"We haven't yet explored the functionality of SYSPRO's Material Resource Planning (MRP) offering but look forward to investigating how MRP will provide further visibility and control over our inventory," Zoshi says.

Enhancing inventory control

Effective inventory control is critical for Saltworks, as its manufacturing process consists of numerous components sourced from suppliers around the world. SYSPRO has allowed the company to successfully address this particular business challenge and has provided better visibility into the movement of components between various manufacturing locations. SYSPRO's Inventory Management suite offers all the attributes necessary to better handle and control Saltworks' stock.

Saltworks has also found greater efficiency in the high degree of integration between SYSPRO and its engineering programs, which include SolidWorks and AutoCAD.

While implementing SYSPRO, Saltworks embarked on a data clean-up drive. "This was a challenging process, but the improved quality of the data made it worthwhile," remarks Zoshi.

"Deploying an ERP solution is not without its nuances, but the technical know-how of my team certainly helped to ease the adoption challenges that come with any new solution. While enhanced inventory control is a major advantage, the improvement of our financial reporting, particularly project cost tracking and allocation of costs, has also boosted our business," Zoshi concludes.

INDUSTRIAL MACHINERY AND EQUIPMENT INSIGHT

SYSPRO EUROPE

Extract Technology Boosts Aftermarket Sales

with SYSPRO

A **leading UK-based supplier of containment systems for the pharmaceutical, chemical and biotech markets,** Extract Technology is renowned for its product range and has an expanding aftermarket division that is growing by 10 per cent year-on-year.

The company's management team acknowledges that this success is supported by SYSPRO, which was implemented by K3 Syspro in just under three months.

Extract Technology is owned by the $300 million turnover Walker Group Holdings. A make-to-order, configure-to-order business, it provides high-quality turnkey containment solutions. Core company products include downflow containment booths that protect operators from respirable dusts, custom-designed dispensing and sampling facilities, and rigid and flexible isolators for containment of potent compounds, with new designs for aseptic processing coming on stream. The company also offers a complete range of pack-off systems to safely offload powdered product into drums or individual bulk containers.

The Aftermarket Division supplies a comprehensive line of replacement parts, as well as a range of complementary services such as upgrades and relocations, to existing customers and field service engineers. Extract Technology's high-profile pharmaceutical customers include GlaxoSmithKlineMerck, Pfizer and AstraZeneca.

The company uses SYSPRO as a key management tool to help drive the business forward. The system replaced an off-site hosted Sage accounting package that was shared with another company.

Martin Price, Business Process Manager of Extract Technology, says: "We lost our accounting system overnight. Instead of treating the loss as a problem, we saw it as an opportunity to install an ERP solution rather than replace pure accounting software. Prior to Sage we had been using an ERP system so we knew what we wanted to get back to."

Chief Financial Officer Jason Armitage adds: "The old system was very basic, so we saw this as a chance to implement a powerful solution that would provide us with greater control over our business processes. We looked at several systems, narrowing them down to Microsoft Dynamics AX, Visual Manufacturing – as used elsewhere within Walker Group Holdings - and SYSPRO.

"I had used SYSPRO while working at other companies over a period of about 15 years, so I knew what it was capable of. We wanted the level of automation that the system would provide to gain efficiencies throughout our processes. By driving out manual non-value added tasks, we knew we would have more time to concentrate on improvements, customer service and sales."

Extract uses the Quotations module throughout its aftermarket business. For example, the company quotes directly from SYSPRO, converts the quotes to orders, produces requisitions and purchase orders, receipts goods, picks the goods, dispatches finished goods and then invoices using the system. It is an extremely quick and accurate way to work and allows the team to optimise time spent on customer service and sales.

"Aftermarket is very important to us and accounts for 20% to 30% of the overall business. Growing at 10% year-on-year, we realise that SYSPRO has given us the ability to extend this part of the business," Armitage says.

"Speed and flexibility of automating the aftermarket processes has been the key to this. Before we had to draw up the quote manually and we had no integration. Now, SYSPRO helps us to create the quote and streamlines the entire process through to dispatch and cash collection. This has given our sales team more time to concentrate on proactive selling, which has ultimately benefited the business."

INDUSTRIAL MACHINERY AND EQUIPMENT INSIGHT

SYSPRO USA

Pierce Pacific Grows
on SYSPRO Foundation

Pierce Pacific Manufacturing is a world leader in the manufacture of mechanized forestry products. Headquartered in Portland, Oregon, the company builds attachments for hydraulically-driven excavators used in forestry, mining and construction. The attachments add considerable value to the excavators. In fact, the value of the attachment often exceeds the value of the transport device onto which it is 'pinned'. It's not unusual for users to utilize the excavators as transport devices to maneuver the attachments to the desired site.

The attachments are sold directly to customers or through OEMs and dealers, which in turn sell the attachments to contractors. Because of the availability of the attachments, contractors often purchase from the OEMs and dealers with assistance from Pierce Pacific. Pierce Pacific's customer base includes Caterpillar, John Deere, Komatsu and Link Belt.

Pierce Pacific's business is unique in that the majority of its products are built-to-order. The greatest number of any particular product sold is approximately 100 a year. The company often makes one-of-a-kind units for one-time orders.

The company's competitive advantage is its range of product offerings and the speed with which it can build attachments, moving from idea to finished product faster than any of its competitors. However, this also creates chal¬lenges. For example, Pierce has a relatively high SKU count of over 200,000. Each product has numerous variations and it's typical for a customer to state, "I want something over here, a guard over there ... can you please add this ..."

Pierce's products include 105-foot-long booms to pour slurry walls along the levees of the Sacramento River delta. The booms are designed to match the individual carrier using a detailed customer requirement form that even includes the tidal rate of the location of the barge. In response to the huge demand for the booms generated by Hurricane Katrina, Pierce Pacific created long booms to clean canals and remove sludge from waterways and ponds.

Other products include attachments for the logging industry, such as delimbers that process a cut log while a computer simultaneously measures the diameter of the log, delivering cutting instructions based on the customer's re¬quirements. Pierce Pacific also manufactures grapples, log loaders, high-speed saws and scrap machines that move bulk materials onto or from barges. The machines charac¬terize Pierce Pacific equipment which does more with less manpower.

During his time at Pierce Pacific, Operations Manager Brad Sintek has overseen the company's growth. When he joined Pierce, SYSPRO had just recently been implemented. For several years, only a small portion of the software was utilized, but as the company and its requirements grew, more of SYSPRO's capabilities were brought into play.

According to Sintek, Pierce Pacific is unique in the creation of many different products with relatively small production runs. The company classifies a 'large' production run as per¬haps 20 units. The bulk of Pierce's production is fulfilled by runs of 'one-of-one'.

A particular challenge involves the production of spare parts to support the long-term life of the attachments. The company can't always predict what parts will be needed or when, so detailed records on the attachments must be maintained for several years in case a spare part is required. It is not uncommon for parts to be ordered on machines that were built 20 years ago. Due to the uniqueness of each finished product, 30%-40% of the parts generated require brand-new drawings to be entered into the system. SYSPRO has helped meet this challenge, and the system is currently holding information on 220,000 part numbers. SYSPRO also helps the company track 2200 open jobs at any given time.

Additionally, Pierce Pacific uses SYSPRO Supply Chain Transfer for warehouse logistics in three separate ware¬house locations. The main warehouse is located in Portland, with two in Canada and one in Baton Rouge, Louisiana. Pierce has expanded dramatically over the past year. Today, Operations is faced with opening and closing 50 new jobs in production daily.

"Everything we do is in SYSPRO. If we didn't have it, we couldn't do what we are currently doing with our business. SYSPRO has everything we need now with capabilities available for future growth and expansion. What really im¬presses us is that SYSPRO is not a limiting factor. On the contrary, SYSPRO can more than handle what we plan for the future," Sintek says.

"The SYSPRO MRP module is very important to us. We're using it to facilitate accurate warehouse stock levels for our customers. It helps us predict future needs and is a great tool with ordering. It assists us in analyzing buying choices, enabling us to make better purchasing deci¬sions and manage our cash flow."

Pierce Pacific Controller Shari Schneider wears many hats in the shape of finance, HR, payroll, administration and IT Manager.

She believes that SYSPRO is more user friendly than others she has used and states that she is amazed at all the data it stores. Schneider gives SYSPRO kudos for the forethought in its design with an emphasis on thoroughness and com¬pleteness of its programs.

"When the company grew from a national to an international business by acquiring a Canadian company, the software proved its usefulness by effortlessly handling currency exchanges and valuing assets recorded in Canadian values," she says.

Sintek concludes: "As Operations Manager, I have to know about every aspect of the business and SYSPRO gives me that information. At Pierce Pacific, we have a philosophy that we need to be better today than we were yesterday, or we will not be in business tomorrow. SYSPRO's capabilities and how we use them have everything to do with that philosophy.

Simplify Your Operations With Industry-Specific ERP Software Designed With Your Unique Business Needs in Mind

If you're an Industrial Machinery and Equipment manufacturer looking for industrial-strength ERP with strong capabilities for complex equipment specification and production, comprehensive quoting and estimating, integrated quality management, and meticulous traceability, look no further.

Generic ERP may be adequate for simpler manufacturing situations, but Industrial Machinery and Equipment manufacturers need more.

Complex bills of materials and unique scheduling requirements, traceability, supply chain visibility and integral quality management are absolutely essential to success. Equipment manufacturers can't afford to rely on custom code and spreadsheets to work around generic ERP limitations. Your ERP systems have to do the job, do it right, and must be easy to use so workers and managers can concentrate on building product - not struggling with information systems.

SYSPRO ERP Software for Industrial Machinery and Equipment is uniquely designed to meet your needs, with broad functionality that brings the entire enterprise and supply chain together. From the first customer contact and request for quotes, through specification and configuration - to procurement, manufacturing, quality management and delivery - to product lifecycle management and end-to-end traceability, SYSPRO ERP is the right solution to keep your business thriving in today's competitive and fast changing environment.

- Demand Management
- Material Acquisition
- Manufacturing Management
- Inventory Management
- Sales Management
- Customer Management
- Administration

A summary of the different types of jobs based on the factory layout and process choices available.

	Project	Work Center	Manufacturing Cell	Assembly Line	Continuous Process
Characteristic	(One-off)	(Job Shop)	(Batch)	(Repetitive Process)	(Continuous)
Processes	MTO, ETO, MM	MTS, ATO, MTO, ETO, MM	MTS, ATO, MTO, ETO, MM	MTS, ATO, MM	MTS
Example	Ship	Furniture manufacture	Bakery - bread	Car assembly line	Oil refinery
Standardization	V Low	Low	Average	High	V High
Flexibility	V High	High	Average	Low	V Low
Cost	V High	High	Average	Low	V Low
Volume	V Low	Low	Average	High	V High

MTS - Make-To-Stock
ATO - Assemble-To-Order
MTO - Make-To-Order
ETO - Engineer-To-Order
MM - Mixed Mode

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