LEAVING A LEGACY

Swagelok's pursuit of world-class performance through enterprise resource planning.

If you ask design and process engineers of high-pressure fluid systems—the brains behind the safe function of offshore oil platforms, chemical and gas processing plants, nuclear reactors, pharmaceutical and semiconductor manufacturing facilities, and countless other industrial processes—Swagelok Company is synonymous with premium quality and unwavering reliability.

It's a reputation earned over the privately held company's nearly 70-year history, and affirmed through annual global surveys the company conducts to keep its eye on the ball in terms of customer satisfaction.

"...every time we looked at where we wanted to take the business, we saw infrastructure hurdles that would keep us flat."

-Art Anton, President and CEO

Over the last 10 years—through the leadership of President and Chief Executive Officer Arthur F. Anton, an 18-year veteran of the company—Swagelok has experienced unprecedented growth. It has doubled annual revenues to reach the $2 billion mark.

Interestingly, Anton's legacy as a leader may not stand on the profound business growth that his team has cultivated. It may rise from the decision to invest in a foundational enterprise resource planning (ERP) system and his role as champion of the four-year change journey that ensued. By all accounts, it was the biggest team effort in the company's history.

Swagelok's reputation for quality, reliability, and collaborative problem-solving has carried a lot of weight with customers for decades but Anton and his leadership team felt its legacy information systems were throttling growth and getting in the way of world-class performance in corporate functions such as supply chain, operations, customer service, and finance.

"We're pretty intuitive in our strategies, and every time we looked at where we wanted to take the business, we saw infrastructure hurdles that would keep us flat," observes Anton.

Anton's perspective and thinking focused on the long-term future of the company. Deliberations with his team centered on the question: Are we an ERP company or not?

"We decided we wanted to buy the integration," recalls Matt LoPiccolo, vice president and chief information officer before and during the ERP implementation, and current vice president of customer service and supply chain. "We didn't want to build the integration anymore."

If Swagelok stayed the course with its legacy systems, not too many people from outside the company could consult and help with system refinements. "Now we're on a relevant platform," says LoPiccolo. "We can go anywhere in the world and get help from people who understand what we're doing. And we can benchmark better."

Pictured on cover: Matt LoPiccolo (foreground), vice president of customer service and supply chain, Christine Kemmerling, director of customer service and James Cavoli, vice president and chief financial officer

Multiple information systems always require reconciliation. It takes time and energy to make sure numbers are right. Without a single source of truth for its data, Swagelok leadership saw a future where it would be difficult to keep pace with customers' expectations for made-to-stock product availability and made-to-order product delivery deadlines.

TRANSFORMATION SUCCESS FACTORS

Supply chain optimization was a major motivation for Swagelok's significant investment in its business system transformation.

"You can't have a world-class supply chain without having the systems behind it to make decisions on a daily or minute-by-minute basis," says John Westendorf, a global account executive for SAP. "Swagelok now has the foundation in place to operate a full predictive supply chain. They've made big gains with visibility to inventory. They can skate to where the puck is going as far as demand cycles go."

As part of its due diligence and vendor review, Swagelok conducted numerous interviews of people who had taken the ERP journey. When things went wrong, common themes were organizational fatigue and hell-or-high-water deadlines.

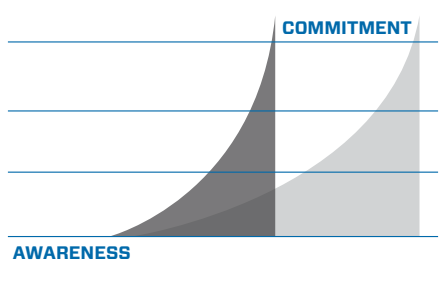
"We were not going to fall into that trap," says LoPiccolo. "We were guided by the values of our organization. We brought those to the project."

Dave Krabill, vice president of information services and chief information officer, adds, "We saw a lot of companies use one group to select the software and another to put it in and make it work. That seemed odd to us. Our selection team was also the implementation team."

Dave Krabill, vice president of information services and chief information officer, says guiding principles grounded the team's decision-making during each deployment.

Business System Transformation: Guiding Principles

LEADERSHIP	• Willingness to evolve and change • Listen, learn, and help • Keep our focus—it's a priority • Strategy and roadmap enablement
PROCESS & DATA	• Data integrity—one source of truth • Improve data visibility and analysis • Adopt best practices • Implement then refine • Process ownership
GOVERNANCE	• Dedicated project managment office (PMO) • Quality first, schedule flexibility • Zero core code changes • Strong change management and risk mitigation • Transparent to customers (Zero Customer Disappointments)
COMMUNICATIONS & TRAINING	• Commitment to change leadership • Active communication • Build talent • Institutionalize change



Swagelok developed its change curves based on change management thought leader Dr. John P. Kotter's change model in *Leading Change*. Company leaders needed to move from awareness to understanding, acceptance and then commitment before others touched by the business system transformation.

With SAP selected as its software partner and PricewaterhouseCoopers (PwC) chosen to assist with the implementation, Swagelok's executive leaders reached across the organization to build its internal team.

Swagelok established a project management office (PMO) for the entire program, a multi-year and cross-functional effort. The company also created a process model, a concept where there's a process lead in each area of the business and a business analyst at IS. That core team was surrounded by a strong infrastructure team within IS and a strong organizational change leadership team.

Swagelok opted for a phased approach to its implementation, an SAP supported best practice that helps to shield end customers from any inconvenience or disruption in product availability.

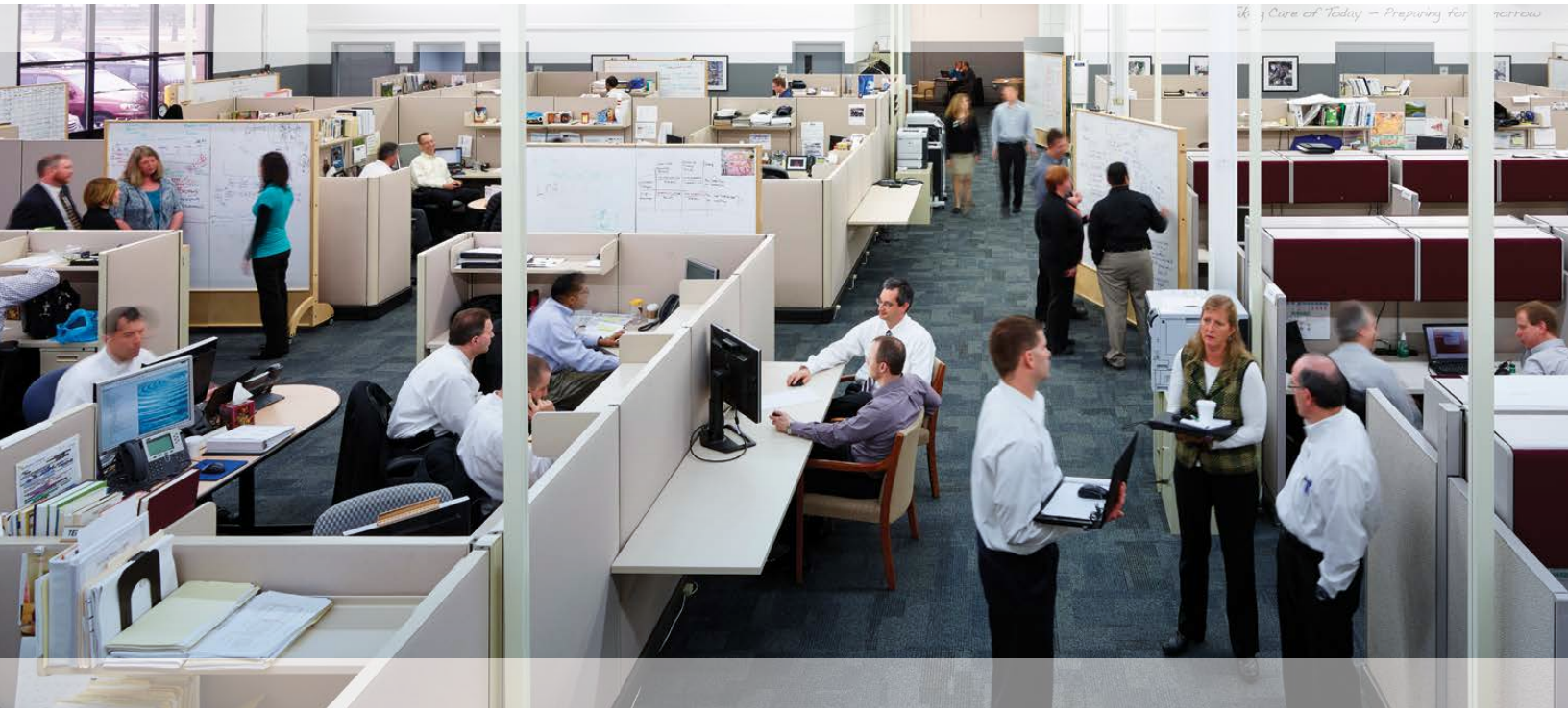
Krabill believes the project's guiding principles were key anchors to the company's ERP implementation and resulting business system transformation.

"Spending time on data management, having a full-time PMO, the idea of a phased approach, implementing and refining later, and knowing we didn't have to be perfect going in—those guiding principles helped us stay consistent over the long haul, and helped us make decisions," says Krabill.

Executive involvement, another guiding principle, doesn't happen simply because it's a goal. It takes work. Leaders need to support a project at the outset and stay visibly and genuinely interested in its success.

LoPiccolo reflects: "I would tell you that our CEO Art Anton did not miss a meeting, our Executive Vice President Frank Roddy did not miss a meeting. Our executive sponsors did not miss meetings. Our success maps back to their willingness to lead change."

The 'quality over timeline' guiding principle empowered every Swagelok associate leading or touched by the transformation. The company's message to shop floor and office associates: We're not expecting you to be perfect



Associates at the Transformation Center in Solon, Ohio

the day after go-live. “Think about the pressure that takes off of people who are trying to get their job done every day,” says Krabill.

“Swagelok showed a deep commitment to quality over schedule,” offers Chris Beiswenger, a principal with PwC who oversaw the Swagelok implementation. Swagelok made heavy investments in training to make sure every associate understood what the new systems and processes required and how their jobs had changed. “That is how Swagelok avoided customer impact,” recalls Beiswenger. “Many companies make the right investments in systems, processes, design, and data—all that works flawlessly—but they don’t make the right investment in their people. Swagelok did and that’s why their implementation was a success.”

SUPPLY CHAIN NIRVANA

Operating on a single model is a competitive advantage for Swagelok. It’s better able to understand the demands on its supply chain and move people or work around to meet customer demands. The company has full financial and costing information attached to the supply chain and all the parts that are moving through.

“Moving to one data model makes all the difference in the world,” says Matthew Edwards, a Swagelok business analyst for supply chain. “In our legacy systems, associates worked with disparate sets of data from disparate systems. Now we’re planning the entire supply chain all the way from assembly down to raw material. The quality of the data and information is way better. That makes us less reliant on tribal knowledge and local information. We have a much more stable supply chain because we’re not editing that near-term plan.”

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> - Matthew Edwards, Swagelok business analyst

While the company was running on legacy systems, Swagelok's supply chain team worked to make sure an upcoming week was going to be successful. Now they're looking ahead into the third, fourth, fifth, and sixth weeks.

"You don't know what you don't know before a business systems transformation," observes Matt Smith, a manager with Swagelok's hose service group, a unit that operates on a 24-hour order turnaround. "We thought our different legacy systems were very well connected, but when we connected everything through one system, we found things were broken. They were manually overridden by human intervention on a routine basis. It was the standard approach, but it wasn't the best approach."

Swagelok is operating with a much richer, more integrated, and wider plan than before. Visibility was a huge problem in the legacy environment, but now operations schedulers are working inside advanced planning systems, not just in material requirements planning.

"They're on the scheduling board with visibility all the way through the depths of the supply chain," says David B. O'Connor, director of supply chain processes and data governance for Swagelok. "That's a big advantage for operations to see those key performance indicators."

James Cavoli, vice president and chief financial officer, says the new system and tools bring financial information and operating decisions closer together. "We're bringing more business acumen and financial knowledge to the organization, and the whole company is moving a lot faster."

SPEEDING ORDERS

According to SAP, a variant configurator (VC) helps a customer or salesperson put together specifications for a product and ensures the product can be produced from certain specifications. The VC also ensures that production costs do not overstep the mark.

Charles Falletta, operations and engineering manager with Swagelok's hose service group, the first line of business to go live on SAP software, diagrams the before and after of Swagelok's VC. "Before, it was a manual process. Engineers needed to refer to multiple sources of information to develop a routing for a customer. Some service groups were actually master routing everything that came in. That's a ton of labor effort from an engineering perspective."

Matt Smith (left), a manager with Swagelok's hose service group, and Charles Falletta, operations and engineering manager, tested the SAP software by shipping the first post-implementation order to themselves. The company's hose service group was the first line of business to go live on SAP software.

Now engineering knowledge is preserved and allocated to orders based on rules established in the system. On SAP software, the hose service group's auto-order rate—orders that could go through relatively touch-free—improved from 60 percent to more than 80 percent.

The new VC made engineering work more rewarding. Swagelok was able to pull two engineers off information processing that SAP software does more efficiently, freeing them to work on engineered-to-order products, new product development, and process improvements that can produce quality, speed, or cost reductions in operations.

Swagelok wanted to achieve world-class performance for its factory service levels through the transformation, and it has done so. "We've been keeping our word 98–99 percent of the time since going live on SAP software," offers Falletta.

CONSULTATIVE CUSTOMER SERVICE

The work of Swagelok's customer service team is vastly different now that every corporate function is on one data model. Transaction automation has granted customer service associates more time to solve business challenges, manage opportunities, and convert quotes to orders. They are no longer merely typing numbers on a keyboard.

"I think the higher level of thinking and depth of knowledge gained with SAP software, over time, will enable our associates to solve problems with greater independence and collaborate more with planning and operations teams," reports Christine Kemmerling, director of customer service for Swagelok. "We're working in a more anticipatory and problem-solving space. That shift makes us more responsive and more valuable to customers."

TALENT PULL

PwC's Beiswenger believes Swagelok's investment in technology can help the company to attract, recruit, and retain high-quality talent. "People want to work for companies that make investments in the tools, technologies, and processes that help them do their job better," he says. "People in engineering, manufacturing, marketing, and product development, people in every corporate function understand the value of having a strong infrastructure."

EXCELLENCE PUSH

The detailed knowledge Swagelok developed during its foundational ERP implementation will be a platform for growth for many years to come. In 2016 and 2017, many of its continuous improvement projects will optimize its SAP solution and accelerate operational excellence for the benefit of customers.

HOSE SERVICE GROUP AUTO-ORDER RATE

Beiswenger reflects on Swagelok's implementation: "Quality was always at the forefront. The value of their values showed up in the way they implemented technology. That's a testament to Swagelok's overall commitment to their customers."

Transformation by the Numbers

Five deployments across four years, mid-2011 to mid-2015

742,361
hours spent on the program

~4,550
associates using SAP software

69,743
hours spent testing the solution

460
SAP software super users

~53,000
hours spent training on the solution

20
sites using SAP software

Anton knows the enormity of what Swagelok has accomplished—for future generations of customers and associates. "Organizationally, we're much more focused on being responsive and understanding our customers' demands," he says.

In a post-implementation message to company leaders, he wrote: "Perhaps the most collaborative and successful project the company has undertaken is the successful implementation of SAP. Not only by our own standards but by PricewaterhouseCoopers and SAP, who assisted with the implementation. The men and women who dedicated approximately four years to lead us through this transformation are nothing short of exceptional. I am so proud of each and every one of them."

American transcendentalist Ralph Waldo Emerson wrote in his *Essays: First Series,* "When friendships are real, they are not glass threads or frost work, but the solidest things we can know."

For Anton, it's clear; Swagelok associates are the solidest things he knows.