

ISO 9001 and ERP: A *United* Approach

By Mike Sweet

Pursuing ISO 9001 certification or ERP software implementation will give pause to even the most aggressive and visionary manufacturing leader. When these projects go reasonably well, those who have gone here will still attest to the immense cost and time of each undertaking -- often measured in years. At worst, most know of or have personally experienced cases where these projects have failed, suffering cost overruns, interminable delays, or unfulfilled expectations.

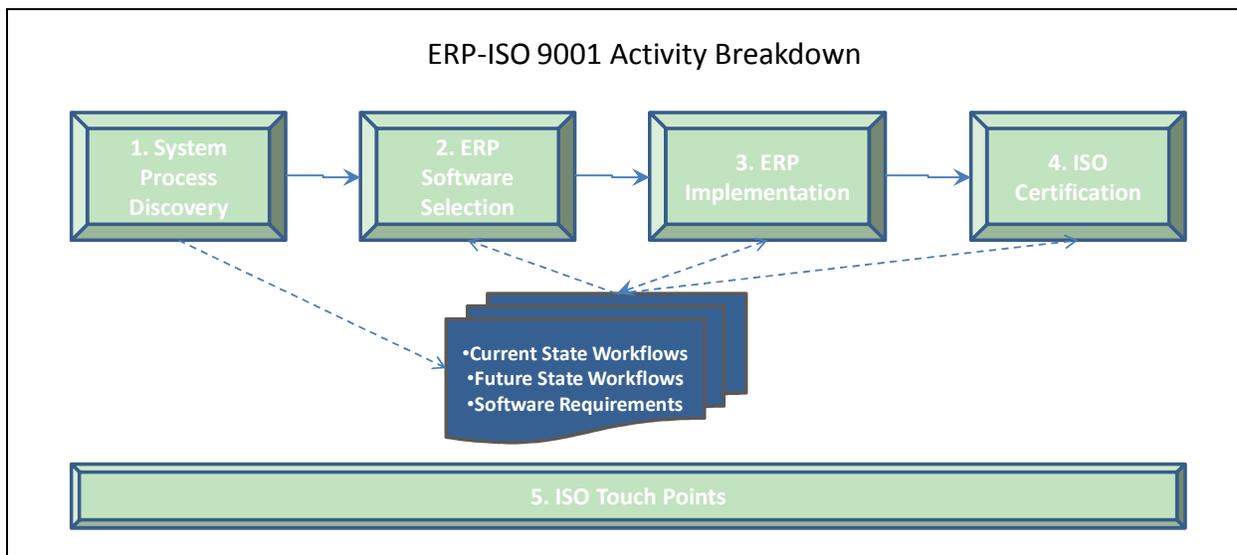
Often, manufacturers postpone ISO 9001 and ERP indefinitely due to their magnitude when considered alongside the daily job of running of the business. And yet ISO 9001 and ERP are now increasingly necessary in light of advancing technology, firmer audit requirements from customers, and stiffer price competition.

What to do? While the author does not pretend to have all the answers, he offers that, since ERP and ISO 9001 are both centered around process documentation and system thinking, they should be evaluated, planned, and potentially executed in single or highly connected workstreams, making them more manageable, cost effective, and successful on the whole.

Medina, OH based United Tube Corporation, a manufacturer of welded steel tubing, could be considered a poster child for successful ISO 9001 and ERP implementation. Using examples from United Tube's experience, some hopefully useful suggestions for achieving ISO 9001 and ERP are presented here.

Swallowing the Elephant

While situations vary by manufacturer, mutually considered ISO 9001 and ERP can be broken down into four (4) primary sequential activities, with a supporting fifth activity.



1. **System Process Discovery:** Kick off the overall initiative with discovery, wherein current state and future state desired process workflows and software touch points are documented and agreed upon internally. A capable potential software partner or third party process consultant can be helpful here.

2. **ERP Software Selection:** Evaluate ERP solutions that demonstrate the ability to execute the future state processes easily, with a nimbleness to adjust to change. The importance of the vendor's willingness, technical ability, and track record in accommodating future change cannot be understated.
3. **ERP Implementation:** Conduct the ERP technical implementation, staying true to the processes as documented, or knowingly adjusting as more is learned during testing and training.
4. **ISO Certification:** Follow the ERP implementation closely with ISO certification, while the new business processes are still fresh.
5. **ISO 9001 Touch Points (Supporting):** Involve your ISO auditor at key intervals throughout the entire program, to gain helpful third party insights and best practices and to be on the same page in advance of the scheduled ISO certification.

United Tube did not tackle ISO 9001 and ERP simultaneously, but did follow the above sequence over a period of time, leveraging the outputs of its ERP project to facilitate ISO later. In 2008, then Company CFO Frank Sadowski knew that ERP was necessary for the future of the business and signed up Steel Viking Software from Fidelis Partners. United Tube had the foresight to immediately conduct a *System Discovery* with Fidelis, equipping the company with workflows and software requirements that would prove highly useful not only to manage its late 2008 ERP implementation, but later with ISO.

In 2013, the company pursued ISO 9001 certification, completing the process in August of that year. According to Mr. Sadowski, who has since become President and Owner of United Tube, "When we began the ISO 9001 certification process, we basically handed process mappings and charts from the ERP discovery over, saving countless weeks."

Business Case

Why should a company approach ISO 9001 and ERP as suggested? There are many reasons, best summarized into three supporting cases.

- **Time savings:** Combining system process mapping into a single discovery activity yields a 25-50% savings of time in the ISO certification process. According to Steve Pettyjohn, President of Quality Assist Consulting, who helped United Tube through its ISO certification, "The outputs of United Tube's ERP discovery and implementation reduced by six months the certification of a quality management system that meets the ISO 9001 standard".
- **Employee ownership:** Involving a core team together in the mapping of processes, selection of software, and ISO certification fosters employee ownership in, enthusiasm for, and accountability around the entire solution, both from technology and process perspectives. Jerry Zeitler, President of Cleveland-based metal stamper Die-Matic Corporation, also a user of Steel Viking Software, says, "We wanted one system that took into account the TS 16949 quality requirements as well as our ERP needs. We involved all levels of management in the development process. By securing their buy in, it allowed us to hold them accountable, which has had a positive effect on our bottom line."
- **Natural order of things:** In the end, we all know that navigating major projects takes some common sense. Who would lay out a production facility without understanding how material will efficiently flow through the plant? Who would construct a freeway system without a clear, detailed knowledge of traffic patterns? Similarly, before choosing and implementing the software platform on which a company will operate, should not the company first document its future information

flows with confidence? This principle is central to both ISO 9001 certification and properly managed ERP.

Lasting Results

The ultimate measure of a manufacturing project's success is return on investment (ROI). United Tube clearly recognized ROI from its synchronized and thoughtfully managed ERP and ISO 9001 ventures. Speaking in terms of overlapping benefits that touch both, United Tube lists six specific tangible results:

1. **Document Control.** Key documents, including quotes, confirmations, work orders, shipping documents, and invoices are automatically generated and archived from one place in the software. Says Mr. Sadowski, "Prior to the ERP implementation, data was entered into multiple places. Sometimes the same process was performed differently by different employees. In just one example, quoting, we now use a single and powerful quote template, with the information captured there flowing forward consistently to later processes."
2. **Equipment Maintenance.** The recording of equipment maintenance is a key tenet of ISO and is sometimes an afterthought and source of angst on ISO certifications. This was not a problem for United Tube. "Our ERP plant floor preventive maintenance module drives the maintenance schedule and automatically documents the process as we go." says David Collins, United Tube's Plant Manager.
3. **Raw Material Traceability.** United Tube connects labeled raw material to production shop orders and shipments using ERP bar code features on the plant floor. According to Mr. Collins, "We can easily show material traceability at the coil level in our ERP to auditors or customers without needing any additional paperwork."
4. **Data Analysis.** Whether for ISO continuous improvement purposes or simply to better manage business, companies need timely access to many levels of historical data. United Tube is now well tooled here to track its key metrics, including material utilization, scrap, and customer trends. Mr. Pettyjohn of Quality Assist Consulting adds, "United Tube has been able to obtain critical performance metrics and subject them to meaningful analysis as a result of their granular ERP system."
5. **Paperless Record Retention.** United Tube realized that most of its operational data was captured in its ERP, and sought to use technology to archive critical documents at key points, eliminating the need for manual job folders. It succeeded, as the comments of a recent ISO audit state: "The ERP system appears to be well designed to support the business and to provide document and record control for important parts of the quality management system. The company has implemented a paperless system ... so that they can be managed in an electronic format."
6. **Future Agility.** Mr. Sadowski knew well that external requirements and related United Tube business processes would change down the road, and thus evaluated ERP solutions having the agility to adjust to their way of doing business. Says Mr. Sadowski, "With our ERP now well coupled with our process, we can easily adjust the software for ISO required form and other required business process changes."

Conclusion

No sane manufacturing leader will claim that ISO 9001 certification or ERP software implementation is straightforward or easy. The fact of the matter however is that well-implemented ERP and ISO have become increasingly required. Case studies like United Tube demonstrate that companies can accomplish their

desired objectives and even thrive as a result of ERP and ISO 9001 initiatives, when done thoughtfully and properly.

About the Author:

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