

Win in the flat world

The process improvement journey in the ERP World

- Somnath Majumdar

Abstract

Process improvement is critical to the success of any organization in today's markets. It is vital for organizations to correctly identify the processes which need an improvement initiative. The process improvement journey involves:

- *Identification of Key Performance Indicators (KPI)*
- *Aligning ERP systems to KPI measurement parameters*
- *Identifying performance targets*
- *Development of performance plans*
- *Benchmarking*

Benchmarking is critical to measure process improvements — it needs to be weighed against the best in the industry operating in an environment similar to your organization. Benchmark measurement parameters also vary according to an organization's manufacturing strategy. Post-implementation audits enable an organization to assess whether the ERP implementation has been a success or a failure.

The process improvement journey has just about begun with ERP systems deployment. This is contrary to the belief in the industry that deploying an ERP system is the cure to all process improvement worries.



Introduction

Corporations today are unable to meet customer promise dates in spite of deploying sophisticated ERP solutions. This is after spending millions of dollars on the deployment effort which also involves a big transformation exercise for the corporation as a whole. IT officers managing ERP Deployment fail to satisfy their managers when it comes down to hard numbers in business. They also fail to demonstrate the benefits of deploying the ERP solution. In a typical situation, the bigger picture around process improvements is ignored by most corporations.

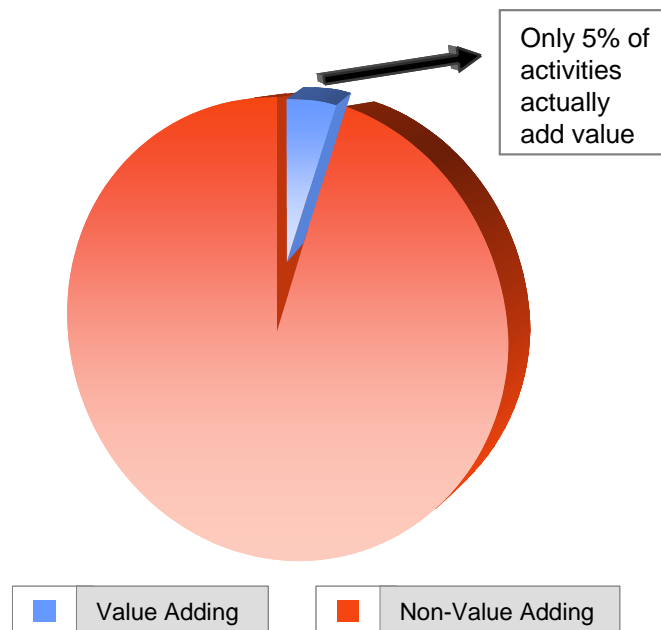


Fig 1: Depicts non-value adding activities comprise as much as 95% of the process

A study by Meta Group reveals that approximately 80% Performance Metric Systems fail or is discontinued within two years of deployment. Performance measurement programs like Six Sigma, Benchmarking have been in place for sometime now. Add the complexity and challenges of an ERP implementation to this and you will know why this may be a difficult area to address. This may also help explain why most companies do not adequately address performance measurement, post-implementation audits, or benefits realization as part of their ERP projects. The only problem with performance management programs, however, is that most companies fail to implement them correctly. In most business cases for large investments such as IT projects or mergers focus only on high-level measures which can be difficult to track against and drive employee accountability.

The Process Improvement Dilemma

Most corporations today who are planning to deploy ERP Solutions have a strange dilemma at hand. The confusing question they have in mind is: should we carry out process improvements before deploying ERP systems or should we wait for ERP deployment to complete and then embark upon process improvements? There is no right answer to this question but most are of the opinion that process improvements should be taken up before ERP deployment.

Process Improvement: What processes to take up?

This is a question that tricks most organizations when embarking upon a process improvement initiative. Some of the drivers that help one reach a conclusion as to which processes should be improved are depicted in the exhibit below. The process selection parameters for improvement mentioned below include but are not limited to the following factors.

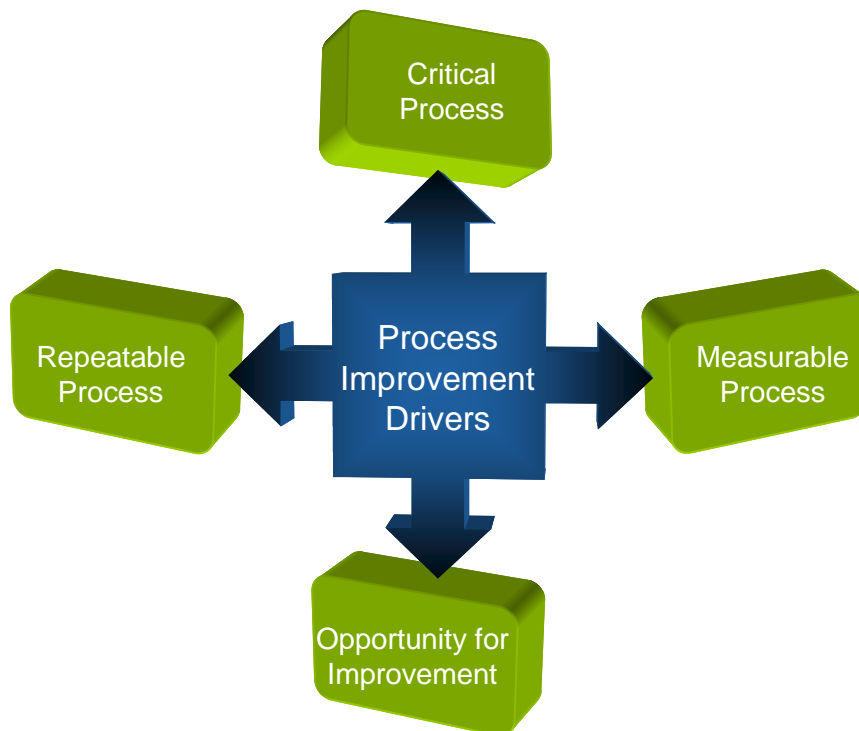


Fig 2: Depicts which processes could be taken up for process improvement

High level steps for process improvement

The process improvement journey, when deploying an ERP Solution, should include the following high level steps.

- **Define and prioritize Key Performance Indicators (KPIs):** It is important to define and prioritize the Key Performance Indicators (KPIs) before embarking upon any process improvement initiative. The processes that are possible candidates should have characteristics as depicted in Fig. 2.
- **Align ERP Reporting Systems with KPIs:** It is imperative to align the ERP reporting systems with the KPIs identified in Step 1. It may also entail configuring the ERP system to ensure that the data associated with the KPIs is collected during transaction processing. Usually, portals are defined which actually track these KPIs on a daily basis.
- **Benchmark KPIs against Best-in-Class Performance:** The KPIs identified need to be benchmarked against the best in the industry. It should be noted here that benchmarking should always be against comparable industries competing against it. Operating environment and the competitive strategy employed by the organization are critical factors to actively consider while drawing comparisons.
- **Identify performance targets and ERP Return on Investment (ROI):** It is important to identify and quantify the performance measurement targets and subsequent ERP Return on Investment to ensure that ROI calculations are meaningful. Every measurable parameter must have a target value and it needs to be monitored on a daily basis to measure its progress against the performance target.
- **Develop performance plans to achieve ERP improvements:** This is the last step in the process improvement journey. Performance plans are developed in response to the measured parameters to ensure that continuous process improvement is the final outcome. The process improvement journey needs to be incremental in nature. Typically, large quantum improvements are difficult to sustain in the longer run.

Industry-based performance parameters

There is a need for developing industry-based performance parameters. Performance parameters may vary significantly even within an industry based in the same operating environment. The performance parameter also sometimes depends on the particular parameter(s) that a company is trying to compete for in the market. These parameters may be cost, quality or a product-focused strategy employed by the company to achieve a strong leadership position in their respective industry segment.

Benchmarking

Benchmarking is critical to evaluate how well you are doing compared to the industry. Sometimes you can purchase information from industry associations, at other times; it may be available from a government resource. You will need these numbers to establish specific performance metrics. If your performance metrics include improvements in inventory management, you'll need specific industry benchmarks to determine how well the software is performing against the standard. Otherwise, you may notice an improvement in turns but if your competitors are beating your numbers, your software isn't living up to its potential — and neither is your business.

Six Sigma Projects

Six Sigma Projects are taken up by organizations post go-live of ERP systems to capture process parameters as part of day-to-day transaction processing. The whole idea is to identify and improve certain processes that are not optimized as of today. Detailed below are the steps to deploy process improvements using Six Sigma Projects.

- 1) Define scope for business process that needs process improvement
- 2) Form a team for the Six Sigma Project which should ideally be a cross functional team with participation across departments
- 3) Analyze the process that is in scope
- 4) Generate ideas from the group to improve the process
- 5) Freeze upon one of the ideas based upon consensus and discussion in the group
- 6) Carry out a pilot project if necessary
- 7) Define parameters that need to be captured
- 8) Carry out ERP system changes (may include configuration changes as well)
- 9) Roll out the system changes to the production environment
- 10) Collect data to measure system performance
- 11) Analyze the data
- 12) Improve process parameters

Generic measurement parameters

Some of the measurement parameters for discrete manufacturing industries include the following:

- 1) Estimated job completion time vs. actual job completion time
- 2) Scheduled ship date on sales order line vs. actual ship date
- 3) Sales order entry date vs. order received date
- 4) Engineering change order implementation cycle time
- 5) Job throughput time
- 6) Line throughput time
- 7) PO line promise date vs. actual received date
- 8) Rolled up configured product lead time vs. actual product lead time

Measurement Parameters by Manufacturing Strategy

The manufacturing strategy employed by any organization has a big impact on the parameters that are to be monitored by the particular industry.

Made to Stock (MTS) – The strategy employed here is to manufacture the goods to stock. Customer orders do not drive manufacturing in such industries. The parameters such organizations need to monitor include the following:

- Planned production units vs. actual number of produced units
- Planned throughput time vs. actual throughput time
- Planned machine capacity utilization vs. actual machine capacity utilization
- Forecasted sale units vs. actual MPS Units
- Standard cost of goods manufactured vs. actual cost incurred for manufacturing the units

Assembled to Order (ATO) – The strategy employed here is to assemble the units once the customer order is received. The key here is to stock the most used sub-assemblies and then assemble the goods on receiving the customer order. The parameters such organizations need to monitor include the following:

- Scheduled ship date on sales order line vs. actual ship date
- Sales order entry date vs. order received date
- Forecasted sub-assembly items by product family vs. actual assembly units consumed by product family
- Published delivery lead time by product family vs. actual delivery lead times
- Planned inventory holding cost vs. actual inventory holding cost for sub-assemblies

Configure to Order (CTO) – The strategy employed here is to allow the customer to configure the required product and to build it as per the selected configuration. The key here is to allow the customer to configure any number of options based on they need and still deliver the product within acceptable lead times. The parameters such organizations need to monitor include the following:

- Configured product lead time vs. actual lead time for the configured product
- Scheduled ship date on sales order line vs. actual ship date
- Sales order entry date vs. order received date
- Sales order line promise date vs. actual ship date
- Change order response lead time

Engineer to Order (ETO) – The strategy employed here is to design, build and ship the product as per customer specifications once the order is received from the customer. The parameters to monitor when following such a strategy include:

- Engineering/ design lead time
- Quotation cycle time
- Engineered components procurement lead times
- ERP master data creation lead time
- Engineering change order implementation lead time

Post -implementation audits

Post-implementation audits are very critical in the journey of process improvement. An important but hard question to answer after the completion of ERP implementation is: How does the new application measure up? Here, a well-defined approach to measuring ROI is required. Frequent technology audits are needed from time-to-time with equal (if not more) commitment from the top management. When measuring the ROI, it is important to understand that there are certain factors that are not always directly measurable. The number of steps involved in carrying out a transaction in the ERP system may not always be the correct way to measure the ROI. User community surveys after implementation are very good indicators of the uptake of ERP system by the user community. Does it help them feel more empowered to accomplish key tasks? How quickly do they feel they've mastered the software? Have you made it easier to communicate with peers, share information, or solve challenges?

Several measures have been used to gauge successful implementation of ERP systems. The impact on business performance and bottom line results is probably the best measure of success. The degree to which an ERP system is used internally within the organization is probably the intangible way of measuring success. Four classifications, Class A to Class D, are used to categorize this success. Surveys indicate that 10% of companies achieve Class A status, Class B and Class C get 40% each, and the remaining (10%) are failures.



The ERP system is used to effectively run the whole organization. The manufacturing database defines product structures and efforts are taken to simplify factory layouts and business processes. The system defines realistic Sales & Operations Plans. Sales orders have realistic promise dates and schedules are used to communicate and coordinate production activities across the supply chain. Accounting information is always accurate and it helps provide useful information to senior management to take decisions.



The formal ERP system is partially effective for running the entire organization. Sales and Operation Plans are defined but they lack company wide acceptance and agreement. Unrealistic delivery promises on sales orders contribute to part of the problem. Some informal or parallel systems are employed to manage expediting outside the formal system. Accounting applications are closely coupled with operational reporting, however, exceptions exist which make some financial impacts suspect.



The formal ERP system is only used in part of the company, typically in recording information about sales orders, shipments, purchase order receipts and accounting applications. The manufacturing database is an incomplete and inaccurate representation model of how products are really built. Sales and Operation Plans and typically non-existent and unrealistic delivery promises are made for sales orders. Several parallel and informal systems are used with excessive expediting efforts and duplicate data maintenance. Accounting applications are not closely coupled with the activities reported in production.



The formal ERP system is not used to run any part of the company, and might be running only in the Management Information System (MIS) function. Informal and parallel systems are used to manage the business.

Conclusion

Process improvements are very critical for all organizations today, especially manufacturing organizations. Deployment of ERP systems can be enablers in the process improvement journey for any organization. It is important to define correct parameters before deploying ERP systems and then measure the improvement after implementation. Process improvement parameters vary by industry type, manufacturing strategy and the operations strategy approach adopted by the organization. The success or failure of an ERP system deployment is not merely the number of transaction steps that are required to carry out business transactions. It is therefore apt to conclude that once you have implemented an ERP system your process improvement journey has just begun — implementing ERP systems is by no means a cure to all process inefficiencies.

About the Author

Somnath Majumdar is a Senior Consultant with the Discrete Manufacturing vertical in Oracle Practice in Infosys which is a part of Enterprise Solutions offering consulting solutions in packaged applications.

He has vast experience in at least three end to end implementations in the Discrete Manufacturing space and also managed multiple Oracle E-Business Suite Implementation projects during his tenure with Infosys. Prior to joining Infosys he was part of the Product Development team at Oracle India in Product Life Cycle Management team. He is also an active contributor in external forums like Oracle Applications User Group in the area of Discrete Manufacturing. He holds a CPIM Certification conducted by APICS.

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