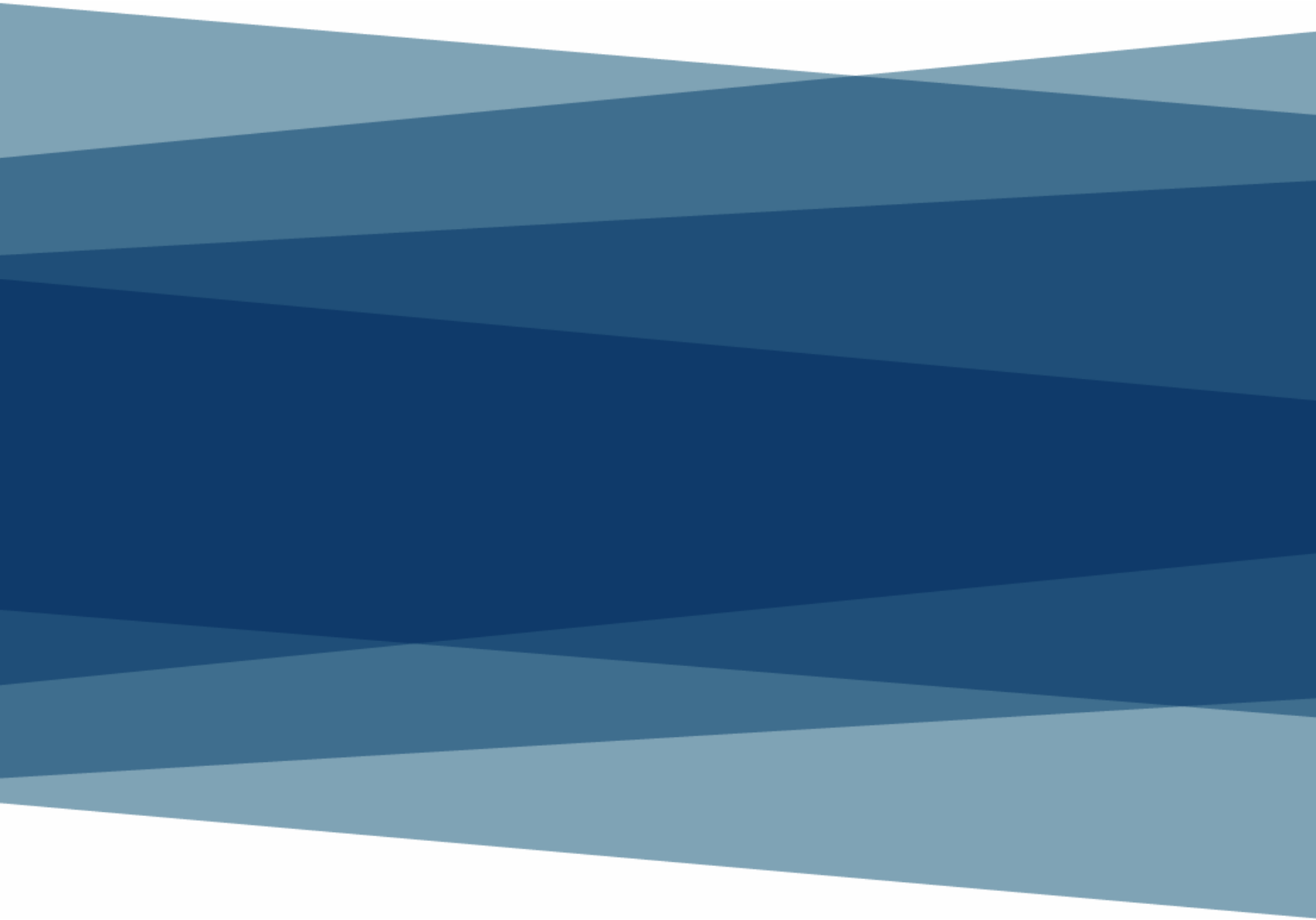




Enterprise Performance Management



Abstract

Enterprise Performance Management (EPM) is the validation of perceptions. It is the ability to analyze business conditions and provide visibility into day-to-day operations to enable more effective and timely decision making. It's more than another technology fad. It places heavy emphasis on the active use of the right information at the right time for the right person to proactively guide the course of the business rather than just passively measuring its progress. It's the link between strategy and execution that encourages a continuous improvement management philosophy. The most powerful ERP systems have long been designed to facilitate EPM.

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A Matter of Perception

How is enterprise performance management similar to production machinery in a manufacturing plant? Both have to be the right tool for the job. For example, producing short-run non-precision metal parts would not require an investment in a new multi-million dollar 196-inch, 100-ton automated, high-speed, multi-turret, CNC controlled, 3D precision laser cutting machine, when an existing hydraulic 60-inch, 10-ton, manual punch press would be sufficient. Selecting the right tool for the job is important whether it is a piece of production equipment or information technology to help improve business performance. Maximum return on investment (ROI) will be achieved by utilizing the right tools—the ones that are perceived to be appropriate and easy to implement, learn and use—that produce the right “product” at the right speed and cost. In short, EPM must deliver the right information, at the right time, to the right person in a practical and effective manner.

Managing performance is not a new concept. In the 1860 novel *Great Expectations*, the English novelist Charles Dickens wrote, “Take nothing on its looks; take everything on evidence. There’s no better rule.” This is especially true for manufacturing companies where measuring the efficiency, productivity and cost of producing discrete units relate directly to growth and profitability.

Today, driving forces such as shortening time-to-market, reducing costs, achieving zero defects, and improving customer service have created a new level of urgency for the need for better visibility into operational performance. Furthermore, the most powerful enterprise resource planning (ERP) systems have long been designed to facilitate performance measurement. Moreover, they continue to evolve with capabilities to assist in more active performance management.

EPM is the validation of perceptions. It is the ability to analyze business conditions to develop improved business plans, monitor and measure progress and provide the visibility into day-to-day operations to enable more effective and timely decision making. It’s more than another technology fad. It places heavy emphasis on the active use of the right information at the right time for the right person to proactively guide and readjust the course of the business rather than just passively measuring its progress. It is the link between strategy and execution with monitoring and measurement that is based on, and encourages, a continuous improvement management philosophy.

The following scenario illustrates a number of the elements required to construct and carry out a plan to manage business performance more effectively:

A plan to improve on-time fulfillment of customer orders starts with establishing the metrics (focused and with a manageable scope) that will be used to determine success. This type of data is typically stored in ERP systems that support performance management. Monitoring progress against the plan requires a combination of both immediate (i.e., realtime) visibility and less frequent (i.e., weekly, monthly, etc.) feedback. It requires active management of performance to manage exceptions such as late orders, and passive measurement of performance to determine overall reductions in lead-times, inventories and improvements in customer satisfaction. The information can then be used to close the loop between actual performance and the development of future plans and metrics.

To execute an effective EPM strategy, knowing how to select and use the right tool(s) is critical. Five perceptions, common in most organizations, need to be analyzed, understood, tested and, if needed, corrected, before undertaking an EPM strategy. These five perceptions include:

1. Is there a need for better perception (i.e., visibility) of business performance?
2. What is the perceived unifying EPM philosophy and framework?
3. What is the perceived timing of the required information?

4. Do perceived technology gaps exist?
5. How valid is the perception that EPM is not practical?

An objective assessment of these perceptions is important before making the move toward becoming a performance-driven manufacturing enterprise.

Perceived Need for Visibility

Every business measures performance to some degree, but EPM is more than measurement. EPM is both passive measurement and active performance management. It includes both reporting and analysis tools, and real-time monitoring and triggers to generate alerts when a metric or process is outside a pre-established tolerance. Most organizations have not taken full advantage of the latter component of EPM.

According to the AMR report, "Outlook for 2003: The Performance Driven Enterprise," manufacturers are striving for improved visibility in their effort to become increasingly performance driven. This trend is clearly related to their top reasons for expanding systems capabilities—to provide more real-time event monitoring and assist managers with planning and decisionmaking guided by performance data.

Current economic, political, global, and industry issues only increase the need to manage business performance more effectively. Economic bureaus such as the Bureau of Economic Analysis (BEA), Bureau of Labor Statistics (BLA) and the Census Bureau report declining consumer spending, drops in new factory orders, order backlogs and shipments for durable goods, tepid growth of GDP and workforce reductions. Manufacturers must be able to assess the impact of such circumstances on plans and performance to determine how to remain healthy and profitable.

In the political environment, poor business ethics and practices have been in the spotlight. While the exact nature and timing of compliance requirements for the Sarbanes-Oxley Act (SOA) is still being determined, the direction is that financial results and changes in operations must be disclosed on a "rapid and current" basis. This is generally understood to include how well internal controls and processes are followed, with disclosure required in as little as 48 hours from events that will affect business performance.

Global events such as health conditions, oil prices, stock and commodity markets, currency valuations, political turmoil, and military actions have a nearly immediate impact. Knowledge of changing conditions and the ability to react more quickly to changing conditions is required. Manufacturing industry conditions of shorter time-to-market, cost reduction, outsourcing, rapid technology advancements, increased competition, changing market demand, complex supply chains, zero-defect requirements, one-to-one customer relationship management and e-Commerce—where feedback and continuous improvement are necessary—are driving the need for EPM and better visibility into process performance.

Regardless of all these signs, most manufacturers are not revising their plans for growth and expansion. Many are considering new advances in performance management technology, such as EPM, as a means to achieve these goals. Assessing the perceived need for EPM or expanding current performance management capabilities calls for answers to the following questions:

- Is organizational intelligence (i.e., data) linked to business activities/processes?
- Are processes monitored and controlled as a result of alerts generated by data-driven events?
- Are business knowledge and insights gained from the data used to improve processes?
- Are strategic business plans developed, evaluated, and refined based on the analysis of past performance?

Enter enterprise performance management—a technology and philosophy to help firms ensure their IT infrastructure can support these business conditions and requirements.

Perceived EPM Philosophy

Enterprise performance management is based on the philosophy and practice of continuous improvement—with a link to business metrics. Continuous improvement dates back to the early 20th century, but is based on the Deming Cycle of PDCA (Plan/Do/Check/Act) in its current form. Also known as business process reengineering (BPR), total quality management (TQM), total employee involvement (TEI), Kaizen, analyze/simplify/automate (ASA), Six Sigma, and other labels, most applications generally incorporate the following steps:

- Plan – study the current situation, gather data, then develop the plan for improvement
- Do – implement the plan on a trial basis
- Check – analyze and determine if the plan is working, identify problems and opportunities
- Act – implement the final plan

In this way, EPM plays an important role in any program of continuous improvement. It provides the analysis, measurement, monitoring and feedback necessary to develop, test and implement an effective program of continuous improvement.

The relationship between continuous improvement and metrics is also meaningful. A metric is a key performance indicator (KPI) that matters, with performance thresholds that indicate acceptability of organizational effectiveness. EPM provides a progress report against established metrics.

Establishing metrics is one of the initial steps in implementing EPM. For that matter, EPM may be needed just to develop appropriate metrics. When developing purposeful metrics, understand the functions they perform. First, metrics set expectations of the desired level of performance. Second, metrics are information that helps control the performance of both people and machines. Third, metrics are the information used to report that performance. Fourth, metrics are the information used to communicate progress internally and externally. Finally, metrics are used to identify gaps between plans and execution.

To establish effective metrics apply the following nine guidelines:

1. Metrics must relate to the business model
2. Metrics must be verifiable
3. Metrics require a standard of comparison
4. Metrics must be in meaningful terms
5. Metrics must be few in number (single digits)
6. Metrics must relate to controllable factors
7. Metrics must be timely
8. Metrics must be output oriented
9. Metrics must provide predictive feedback

Why are good metrics important to an EPM strategy? For one reason, they can literally determine the success or failure of efforts to measure and manage business performance. But more importantly, they are the link between business decisions and actions, and corporate goals of growth and profitability. Don't cut corners in the area of metrics.

Starting with meaningful metrics, EPM continues by transforming information into knowledge and knowledge into action. It uses actionable events to correct, adjust and improve processes. It bridges the gap between instruments that provide feedback and steering that enables decisions (i.e., course adjustments) to be made instantly. The framework is familiar because it closely resembles the framework of the Deming Cycle for continuous improvement.

Developing an enterprise performance management plan requires the following steps:

1. Determining business strategies/plans
2. Establishing targets and metrics
3. Collecting and storing data
4. Monitoring/managing processes
5. Measuring performance versus plan
6. Responding to alerts and making corrections when metrics exceed tolerances
7. Analyzing feedback, refining plans and repeating the process

Following the entire EPM framework and establishing the relationship between corporate goals, metrics and performance management is critical. For example, ITW Wilsonart Canada, a Toronto-based distributor of decorative surfacing materials, has goals for profitability that have been translated into a specific profit margin metric on every order. Critical processes that affect the gross margin of an order are monitored. The general manager is notified when established conditions are not met. "Today we're able to perform, measure performance, and put corrective actions in place to ensure performance continues to improve," says Mike De Rita, Wilsonart's general manager.

EPM works because it is based on best of class business practices such as continuous improvement techniques. EPM works because it ties business plans to actual performance. EPM works because it is a closed loop strategy. EPM works because it can produce a high return on investment from existing information technology tools (a subject of a later section).



Perceived Timing

Timeliness of performance data is a major issue. Many assume that to effectively manage business performance, information must be provided instantly. This is inferred to mean real-time. But real-time means different things to different people. Timing actually depends

on the nature of the process being monitored, the type of environment it exists within and how quickly response to changing conditions is required.

High-volume make-to-stock and distribution environments may require near immediate feedback on order fulfillment, while low-volume, engineer-to-order environments may only need to see the data weekly or monthly. A process may be highly transactional in nature, such as sales orders, or strategic, such as new product introduction. Changes in quality tolerances require immediate reaction time, while getting daily information about purchase quotes may be sufficient.

Two cases illustrate this point. At ITW Wilsonart Canada, immediate feedback is critical. In the distribution business, gross margin on orders is a Key Performance Indicator (KPI). As in many distribution environments, the combination of a high number of transactions with thousands of SKU's makes the task of maintaining an acceptable gross margin on every order difficult. A trigger automatically detects the occurrence of a business event that requires action—immediately alerting the general manager when an order falls below a predetermined range of acceptable profitability. It reduces order process time and steps. But, more importantly, it helps the company meet their profitability goals by enabling quick reaction to determine how to improve the margin on less profitable orders.

For Polk Audio, a Baltimore-based manufacturer of home and car audio systems and components, nightly updates are sufficient. Since their products are sold through big box retailers as well as individual installers, managing channel sales relationships is critical to their success. Multi-dimensional analysis with drill-down capabilities with data refreshed daily allows sales to determine which items are moving fast or slow and give feedback to retailers regarding progress toward sales goals and incentive levels. The tools help salespeople manage customer relationships and improve channel performance.

The larger issue is that of getting the right information to the right person at the right time. It is a matter of deciding "what you can't not know." According to William James, American philosopher and psychologist of the late 19th century, "The art of being wise is the art of knowing what to overlook." While this is an important part of the puzzle, the opposite is also true—knowing what not to overlook.



Avoid information overload by getting the right information to the right person at the right time. Don't be enamored by the concept of "real-time" for its own sake. Consider the difference between real-time and right-time. Only then move to the question of what are the appropriate tools and technologies for the job.

Perceived Technology Gap

EPM is the alignment of the IT strategy with the business strategy. According to surveys, this has been the highest priority of IT departments for several years. To implement EPM requires adopting, or, at a minimum, understanding a new philosophy, and using appropriate technology tools. Many mid-size manufacturers understand the philosophy, but believe the technology is unattainable or unavailable. This has created a perceived technology gap between recognition of the value of EPM and its execution.

EPM is perceived as a new strategy. Compounding the confusion, market analysts have created new terminology and frameworks to characterize what companies are already doing—to some degree. In fact, all companies measure some types of key indicators. However, there's more to it than measurement. There's also an important element of active performance management to proactively steer companies in the planned direction on a real-time basis.

Sophisticated ERP systems that provide the same underlying infrastructure for enterprise business transactions provide the foundation for both performance measurement and performance management technologies. These "visualization" tools enable managers and employees alike to evaluate organizational effectiveness, performance, progress and identify exceptions requiring immediate action.

To find the ERP solution that provides such an information-rich environment with tools for measurement, reporting, analysis and active performance management, ask the following questions:

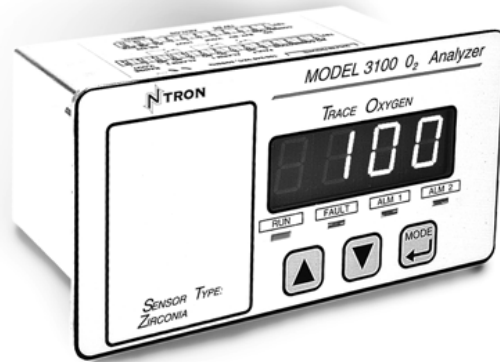
- What is the ERP data quality? Are the applications seamlessly integrated without redundant data? Does the system encourage, or enforce, disciplined entry of data?
- What is the sophistication and integration of ERP EPM business analytics tools? Do they have the flexibility and power to analyze business conditions from cause to result?

- Does it support performance management capabilities such as conditional triggers and alerts for events requiring immediate action?

For the mid-size manufacturer, carefully consider what is the right tool for the job, based on the nature of the process, what timing is required, flexibility to provide both real-time monitoring and right-time analysis, how the data currently is collected and stored, integration to existing enterprise software systems, who will be using it, how easy it is to use, implement and support, and finally, affordability and return on investment.

Don't be enamored with new technology for its own sake. Neutronics, Inc., an Exton, PA-based manufacturer of high-tech gas analysis instrumentation for the automotive industry, chose to use a mainstay ERP-based tool for extracting and presenting performance data. Creating reports, some in as little as ten minutes, is done without bringing in costly IT consultants. The data is reliable and accessible to system users who build and add custom fields to their own

reports. Their efforts have supported the company's plans for improved inventory control. Identifying slow moving inventory and reducing inventory from \$3.0 million to \$1.8 million are evidence of a significant payback on their initiative.



Perceived EPM Practicality

When manufacturers think of EPM they envision a business information system that, to the extent possible, automatically manages day-to-day operations, provides alerts for exceptions where action is required, and is flexible and accessible enough to analyze business conditions to make informed and timely decisions. Some consider this an unattainable, Pollyanna, ideal. Many, especially mid-size manufacturers, consider it to difficult, complicated, and expensive—requiring extensive technical resources.

But, in a recent poll conducted by CIO Insight™, only forty-two percent of executives make use of business intelligence tools to manage enterprise performance. Frequently voiced issues include:

- Does the total cost of ownership (TCO) have to be thousands of dollars per user for new software, hardware and services?
- Does EPM require adoption of yet another technology?
- Will the level of staff to implement and maintain EPM be prohibitive for mid-size companies?
- Can EPM tools be easy to use?
- How good is the data it depends on?
- Will the data be displayed in a relevant and timely manner?
- How can the large volume of data be transformed into meaningful information?

Arguably, matters of practicality may be irrelevant, given that AMR Research has indicated that EPM is one of the top three priorities for mid-size manufacturers. Data storage is cheap. Enormous advances in CPU processing speeds enable processing complex queries on large amounts of data in near real-time. The Internet makes information accessible from almost

anywhere at any time. Dramatic, frequent reductions in the cost of computing resources have driven TCO to sufficiently low levels for even the smallest businesses.

Further, it is the nature of highly integrated ERP systems to maintain high data quality because integration minimizes redundancy. Leading ERP systems now provide information extraction, presentation and monitoring capabilities users need, and can set up on their own, without having to resort to impractical solutions.

Two capabilities that deserve mention are business intelligence (BI) tools and workflow. User-friendly drag-and-drop BI tools help users create their own reports without a need for programming knowledge, having an extensive knowledge of database and file structures, or a technical orientation in general. Because they are based on object-oriented database technology, fields can literally be dragged from one window, such as a list box presented to the user, and dropped onto a report. The result is that managers and employees can get the information they need, when they need it, to make informed, rather than gut-level, decisions based on current performance measurements.

While such passive performance measurement is important, active performance management is more effectively accomplished using workflow technology. Workflow incorporates tools to monitor the business for events that do not meet pre-established conditions. When seamlessly integrated to the ERP system and database, a workflow event triggers an alert to prompt an appropriate response. Related data is presented, or available, to the user to help them make the best decision. To be practical, workflows must be easy to implement and transparent to the user.

Both types of applications are being used at ITW Wilsonart Canada. For traditional reporting and measurement, they use drag-and-drop reporting capabilities to gain better visibility into enterprise data such as return on sales, profit margins, order fill rates and inventory levels. They also actively monitor pre-established minimums for the profit margin of each order. When a minimum is not achieved, an alert is sent to the general manager who can see what the actual profit margin was, along with other customer- and order-related data that assists in resolving the discrepancy in a timely manner.

These tools are now practical for the mid-size manufacturer. They're easy to use and require no technical expertise. The data is available now that ERP is within the grasp of the mid-size manufacturer. Computing resources and costs are not issues. Most importantly, the tools are flexible enough to present data in meaningful ways that are based on each company's needs.

Summary

Becoming a Performance-Driven Manufacturing Enterprise

The benefits of employing EPM techniques and tools can be significant. Neutronics has reduced inventory by forty percent. Polk Audio has improved customer/dealer relationships by improving their sales opportunities, and Wilsonart has reduced inventory value twenty-five percent, improved profit margins, and provided more enriching jobs for employees. Other benefits include the ability to:

- Respond faster to changing market conditions
- Increase sales and market share
- Improve cash flow
- Reduce outstanding receivables
- Minimize product defects, scrap and rework
- Maximize profitability of customer orders
- Reduce inventory levels

- Increase productivity and efficiency
- Increase asset utilization
- Reduce COGS and SG&A expenses
- Improve on-time customer order fulfillment
- Improve customer service levels and responsiveness

The actual benefits derived will depend on the nature of the business plans being monitored, but whatever your plans, EPM can be the difference between accelerating or losing market share and profitability. Implementing EPM is not complicated. But there are some elements that are specific to an EPM effort. These include:

1. Establish metrics (KPI's): Metrics should be clearly related to business strategies and plans.
2. Start small and gain experience: Epictitus, Greek philosopher, circa 55-135 A.D. said, "Practice yourself, for heaven's sake, in little things; and then proceed to greater." Walk before you run. Focus on a single line of business if possible. Single out one area of improvement. Start in a healthy area of the business if feasible, but if it's necessary to start with one that is more problematic, attempt to control the project scope.
3. Address the timing issue: Based on the nature of the process, decide how often the data needs to be presented.
4. Look to ERP-based tools: Don't assume expensive, elegantly marketed solutions are better.
5. Leverage critical data: Make use of the information-rich ERP software system.
6. Avoid information overload: Use EPM tools to present the right information to the right person at the right time. Manage by exception.
7. Manage, don't just measure: Remember that EPM is made up of both passive performance measurement and active performance management.
8. Encourage continuous improvement: Embrace the philosophy of continuous improvement and use EPM to reevaluate, change, reinforce, and refine plans and metrics.

This approach to building new perceptions demonstrates what can be accomplished and the advantages achievable by implementing an EPM strategy with the right approach and the tools available in best-of-breed ERP systems. It also happens to be one of the most powerful ways to get more value out of an ERP system.

Enterprise performance management goes beyond the traditional ERP boundaries to deliver value and ROI. It isn't just about technology—it's also about organizing and transforming information into knowledge that can be used to improve business processes. The system must provide unparalleled flexibility in reporting and using data without the need for programming knowledge or a technical orientation. That allows companies to focus on achieving business goals—such as improving performance—rather than worrying about technology.

Companies that are implementing EPM typically surpass their competition. They are characterized by having clear strategies and plans, being agile and responsive, and continually reinventing and improving themselves. They perceive what they can't not know about their business. They have chosen to take control of their business.

About Epicor

For 20 years, Epicor has been a recognized leader dedicated to providing leading edge enterprise software solutions to midmarket companies around the world. With over 15,000 customers, Epicor delivers end-to-end, industry-specific solutions that enable companies to immediately improve business operations and build competitive advantage in today's real-time global economy. Epicor's comprehensive suite of integrated software solutions for Customer Relationship Management, Financials, Manufacturing, Supply Chain Management, and Services Execution and Control provide the scalability and flexibility to support long-term growth. Epicor's solutions are complemented by a full range of services, providing a single point of accountability to promote rapid return on investment and low total cost of ownership.

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