

**MYOB** Advanced Manufacturing

# Key Performance Indicators for Manufacturing



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# Key Performance Indicators for manufacturing

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Every kind of manufacturing company across all industry segments relies on measurements to monitor business activities, performance, document successes and challenges, and to help direct decision-making. While we measure several parameters to comply with mandatory accounting and reporting requirements, smart management will incorporate those measurements into valuable intelligence to help run the business more effectively and efficiently.

These measurements can be used to improve performance and results. Also, in discrete (hard goods) and batch production and in the latest demand-driven hybrid production. Thousands of measurements have been defined over the year including many “common” measurements that virtually every manufacturer can use – things like profit and loss, cash flow, production schedule compliance, inventory turns, and the like. In addition, specific vertical industries have measurements that apply to their situation and needs.

There can be too much of a good thing, however. Information overload is a real problem when the important gems of intelligence are buried in masses of data. Decision-makers can easily miss the critical early warning while spending entirely too much of their valuable time buried in reports.

Among this wide array of possible measurements, each industry has a relatively small number of measures that are particularly important for monitoring the overall health of the business. Commonly called Key Performance Indicators (KPIs), these measurements are often gathered together into an executive dashboard display with graphics that provide an at-a-glance picture to help executives quickly zero in on opportunities or challenges.

These dashboards offer drill-down for analysis of the details and can be adapted to provide key measurements to individual departments or functions within the organisation, focused on the specific measurements that are important in their individual span of interest.

Most manufacturing management software, called ERP (Enterprise Resource Planning) system, offer dashboards showing all levels of the business to provide information to the right person at the right time. These dashboards can provide a variety of predefined KPIs which various users within the business can pull together and tweak to fit their specific situation. We are in what might be called a golden age of business intelligence and KPIs. Fortunately, e-technology presents a solution in the form of powerful yet user-friendly analytics and data visualisation tools. These are extensions or enhancements to Business Intelligence Systems. All of this data, analytics, and business intelligence is made practical and functional through the cloud. Only cloud deployment offers the connectivity, integration, security, scalability and capacity necessary to harness all this data and make the intelligence accessible wherever its needed, whenever its needed.

# Types of KPIs

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When we think of measurements and KPIs, we are most likely thinking about historical measurements – summaries and analysis of events and data. KPIs compile this data into usable forms that target the specific interest of the viewer, the functional area of the business and the needs of that specific industry and activity.

Many KPIs are financial, as finance is the common language of general business management in manufacturing and all other industries. Common financial KPIs monitor sales, costs, margins, cash flow, and asset utilisation. Many more KPIs are operational measurements that managers and executives use to focus in on specific activities and interests relative to schedules, inventory,

on-time completion, backlog, quality and more. All these KPIs can be classified as historical measurements since they focus on analysis of data from activities that have already occurred. We can speculate and try to project how things will play out in the future, but this isn't built into the structure of the measurements.

Historical KPIs can be set up with alerts and warnings that monitor and detect exceptions, calling attention to issues through graphic characteristics like traffic lights (green = all okay; yellow = an indicator that something is not quite optimum; red = cause for concern) or “push” alert messages sent via email or text.

Predictive KPIs use leading indicators to project performance expectations into the future. Management can take advantage of these projections to steer decisions and actions aimed at avoiding undesirable outcomes or enhancing desirable results. Predictive KPIs for the manufacturing industry may use economic indicators, demographic trends, or specific industry indicators like housing starts (indicator of future demand for plumbing fixtures, windows, carpeting, furniture, etc.) or health trends (future demand for medications or supplies).

## KPIs for the manufacturing industry

As mentioned on the previous page, several basic KPIs measure financial performance and apply to all kinds of businesses – sales and margin, return on equity, cash flow, and the like. Operational KPIs that are focused on manufacturing may include common indicators that everybody already watches like Inventory Turnover Ratio and On-time Delivery as well as others that focus more on specific areas of manufacturing operations.

### Plan vs. Actual Hours and Cost

As plan vs actual data accumulates, trends can be identified to provide early warning of improving or deteriorating performance. Comparing different areas of the plant, different processes and difference products can offer clues to how overall results can be improved.

## Utilisation and Capacity

Lean manufacturing does not emphasise utilisation – it is better to have idle equipment than to overproduce or build ahead of the need. That said, there is real value in planning optimum utilisation of available resources. Resource load balancing can also generate lower costs and improve on-time completions, reduce overtime and expediting, and improve delivery promise reliability by eliminating uncertainty in planning schedules. The basic Work Centre Dispatch KPI can be easily customised to better fit your needs. It shows workload details for each work centre including planned, in-process and optionally completed work so you will always know what each centre is working on and what's 'in queue' for completion.

## Scheduled Production

At a more granular level, monitoring production schedules offers better insight into work flow and resource utilisation. The Manufacturing Dashboard shown below is the starting point for defining a display of released orders in the plant and the current location and status of each. Summaries in this KPI and the Work Centre Dispatch dashboard provide overall status of work centre loads and schedule status across the department or the entire plant.

Another KPI many companies have not discovered is to look at profitability by customer by category by item. It may be hard to admit, but not all customers are created equal. Some can be highly profitable while others might cost more than the revenue they generate. The same is true for products (items).

Mature producers are well-advised to periodically review the relative profitability of both customers and products as they formulate sales and distribution plans and budgets to optimise overall business plans and strategies. This example of Sales and Profitability by Item Class and Item illustrates the power of KPIs to sort and summarise masses of data to provide insights you can use to better understand your business.

# Getting started with KPIs

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Your Cloud ERP system will come with a selection of pre-defined KPIs 'right out of the box', and that's not a bad place to start. However, these pre-defined KPIs are more like training wheels that are helpful in letting you find your balance. Familiarise yourself with how those KPIs work. Learn manage the alerts and warnings and how to change them so that they are more relevant and useful in your business.

As soon as you are comfortable, start to identify new KPIs that focus on the major functions of your business. The goal is to replace the training wheels with high-performance tires that are just right for you.

Many companies getting started with KPIs will become excited by the new insights and keep defining new ways to look at the business. That is a good thing, but often leads to a proliferation of KPIs that can quickly become counterproductive. Best practice is to have a relatively small number of highimpact KPIs (for an individual user) – no more than 8 or 10 – aimed at the critical factors

for that business, department, project, or area of responsibility. A flexible Business Intelligence system will support drilldown for easy analysis and the easy creation of new ad-hoc measurements for those times when an unusual situation or new idea mandate a different view.

KPI development and use must be done with the involvement and cooperation of the ultimate users of the KPIs. The users must understand the system and the measurements. The KPIs must be tailored to their specific needs. Building this personal connection in the KPIs is what makes them truly effective. Make sure that the KPIs are more than just window dressing. They must drive decisions and actions. If they are believed, trusted, and relevant, appropriate decisions and actions will follow.

Be sure that incentives line up with measurements; people respond to the way they are measured only when incentives are properly aligned.



**Define a small number of high-impact KPIs (for an individual user)– no more than 8 or 10 –aimed at the critical factors for that department or project.**



# Systematising the KPI process

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Use your initial experience to refine and expand your KPIs. In fact, regular KPI ‘maintenance’ should be a part of your overall management strategy. Your business continually changes. Certainly, customer preferences and markets change. The advance of technology is having an impact on every business, and static measurement systems inevitably become less relevant and useful if not maintained.

The good news is today’s KPI dashboards are truly flexible, adaptable, and user-driven. There’s no need to draw up a detailed description of the changes and beg IT to recode the reports. User-friendly tools make changes and new reports simple and easy, putting the user firmly in the driver’s seat. MYOB Advanced Manufacturing is cloud-based so the information is readily available on any device, at any time, from anywhere. What’s more, MYOB Advanced Manufacturing’s cloud-based applications are built for real-time updates and a high level of flexibility so your KPIs remain dynamic and responsive in every sense of the word.

Based on a broad system like MYOB Advanced Manufacturing, linked to data sources such as your plant-floor Manufacturing Execution System, along with outside resources like demographics and economic trends, your KPI dashboard is the control tower for your business.

You gather data from current sales activity and forecasts, procurement and production, and outside factors to build a dynamic and valuable view of every aspect of your business. You then maintain that view to focus on the most important factors for your continued success. MYOB Advanced Manufacturing makes it easy to collect, distribute and communicate that intelligence and information.



# Conclusion

KPIs may have originated in large, complex organisations but their value is universally recognised. Technology has made powerful, flexible measurement systems with KPI capability both affordable and user-driven so smaller organisations can benefit as well.

Many KPIs are historical in nature, focused on summarisation, presentation, and analysis of data commonly found in manufacturing management systems. User-managed alerts and alarms highlight activities and business areas that need attention, relieving busy managers from the need to pore over endless reports and screens. Built-in tools enable fast, intensive analysis to get to the heart of the problem and make sound, informed decisions.

KPIs are great for uncovering conditions or actions that adversely affect operations (problems) so they can be addressed quickly before losses pile up.

KPIs are also good for identifying things that are doing particularly well and exceeding expectations, so that management can find out what is behind the improvement and how to replicate it throughout the organisation.

Predictive KPIs take it all a step further by using current patterns and external information to project operational results like revenue, profit, margin and workload/backlog in the future. Using these projections, management can be proactive in adjusting operations to produce better results and avoid undesirable outcomes.

Keep in mind that KPIs can and should routinely change. For example, when a company has critical issues in one area, it can create appropriate KPIs to monitor the situation and track the effectiveness of the remedial actions. Once the situation has been corrected and stabilised, the KPI becomes less important and should be modified or replaced to track the next critical management issue. This is an important procedure for limiting the growth of KPIs

to the point where the forest obscures your view of the trees. Remember that the ideal number of KPIs to watch on a regular basis is no more than 8 to 10.

KPIs are standard business management tools. They are becoming both more powerful and easier to use thanks to packaged Business Intelligence and Executive Information Systems applications that are part of a comprehensive back office software system like MYOB Advanced Manufacturing.

In Australia and New Zealand, MYOB Advanced Manufacturing is transforming how manufacturing businesses work. Our Cloud ERP software optimizes your manufacturing operations with real-time coordination of activities and complete real-time visibility. Reduce supply chain complexities and reduce costs with MYOB Advanced Manufacturing.



To find out more about MYOB  
Advanced Manufacturing or MYOB  
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