White Paper
February 2009

Rapid scorecarding for manufacturing

Five simple steps to building an effective scorecard

Information Management

Cognos software

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Abstract

As the business environment grows more complex – and the financial stakes rise ever higher – an increasing number of global manufacturing organizations are adopting IBM Cognos® business intelligence solutions. Among the most popular and productive features of these systems are scorecards, which can consolidate data from multiple sources into a coherent view of company performance that can be trusted by individuals throughout the organization. This white paper describes the advantages of good scorecards and provides five tips for creating good ones.

Overview

"*Not everything that can be counted counts, and not everything that counts can be counted.*"

– Albert Einstein

For manufacturers worldwide, today's business climate is complex and competitive. Manufacturing companies are under intense pressure to improve customer service, bring innovative new products to market and increase business speed and agility, while being mindful of regulatory and legal compliance.

From the executive suite to the shop floor, managers juggle a variety of priorities, and must assign a value to each one based on their relative importance and the interaction among the processes that drive them. Then they can integrate these elements into a strategic plan and communicate the plan throughout the rest of the organization.

This is the core value of scorecards.

Business problems

Manufacturing companies need forward-looking or “leading” metrics that are tied to their value drivers. Leading metrics in key areas such as productivity, profitability, customer satisfaction, compliance and safety can alert companies to problems before they adversely affect the bottom line.

For example, metrics such as parts shortages or order delays can point to an eventual drop in customer satisfaction, declining revenue or a loss of market share. Understanding these cause-and-effect relationships, coupled with sound supply and demand planning, allows for better synchronization, reduced costs and better performance.

While defining these metrics is one thing, bringing the data together to support them can pose an even bigger challenge. Companies usually rely on a raft of performance data drawn from many different systems: enterprise resource planning (ERP), spreadsheets, data marts, presentation software, legacy data and other sources. Each system provides important information about a particular aspect of the company’s performance, but each collects, defines and displays the information in a different way.

Business drivers

Scorecarding with IBM Cognos 8 Business Intelligence (BI) can help organizations consolidate performance data from disparate sources into a coherent system that people can trust. They can create their own truth scorecards that help them firmly pinpoint opportunities and roadblocks in key functional areas.

Scorecarding helps business users, from the shop floor to the top floor, quickly find answers to common questions, regardless of the data source, such as:

- How has this metric performed in the past?
- Who is involved in solving this problem? Have corrective actions been put in place?
- What are the factors driving the performance?
- What other processes or metrics are affected?
- What are the details behind this metric? How is it calculated?

Scorecarding with IBM Cognos 8 BI allows you to link decisions made by individual employees to corporate strategies and goals. It provides users at every level of the business with access to reports, analysis and alerts, helping them understand their metrics and the factors that drive their performance. It can scale easily from tracking a few individuals to specific operating subsidiaries, and from discrete geographic regions to the entire enterprise. It can manage performance using methodologies like Balanced Scorecard, Six Sigma and Total Quality Management.

And while many scorecard initiatives suffer from lack of adoption by middle managers, IBM Cognos 8 BI scorecards provide the kind of drill-down capability and relevant tactical information that middle managers find highly useful—improving the chances for enterprise-wide success.

The solution

Scorecarding 101

"*We recommend that all supply chain BI initiatives start with Balanced Scorecard measurements. We also recommend that SCOR results be displayed in the Balanced Scorecard business process perspective. By doing this, executives will be able to evaluate supply chain BI results within the company's performance management framework and manage within a proven reference model that provides linkages to strategic goals.*"[1]

–Ventana Research

Scorecarding is a proven approach for monitoring, measuring and managing performance at a tactical or strategic level for an organization, a team, or individual employees. At the tactical level, employees and managers use scorecards to monitor performance against targets for discrete, specific projects. At the strategic level, scorecards can be part of a corporate-wide performance management system that executives use to map the overall corporate strategy and communicate it throughout the organization.

A scorecard is a list of key performance indicators (KPIs), or metrics, that present current performance data for a business process or strategic goal against target values. Most metrics feature a corresponding color scheme and trend arrow that indicates whether that performance is on, above or below target and whether performance is trending up or down.

Most scorecards, such as those used in Balanced Scorecard implementations, use a mix of financial and non-financial information, leading and lagging (financial) indicators and corresponding strategy maps. Other may be industry-specific, such as supply chain performance management. According to Ventana Research, "The best way to measure process effectiveness is to organize your supply chain BI measures according to a standard performance measurement reference model. Reference models integrate the well-known concepts of benchmarking and process measurement."[2]

The best-known reference model for managing supply chain performance is the Supply Chain Operations Reference (SCOR) model, created by the not-for-profit Supply Chain Council (**www.supply-chain.org**). This model contains standard descriptions of management processes and characterizes management practices and standard metrics that benchmark best-in-class performance.

SCOR is based on five core management processes:

1. **Plan.** Processes that balance aggregate demand and supply to develop a course of action which best meets sourcing, production and delivery requirements.

2. **Source.** Processes that procure goods and services to meet planned or actual demand.

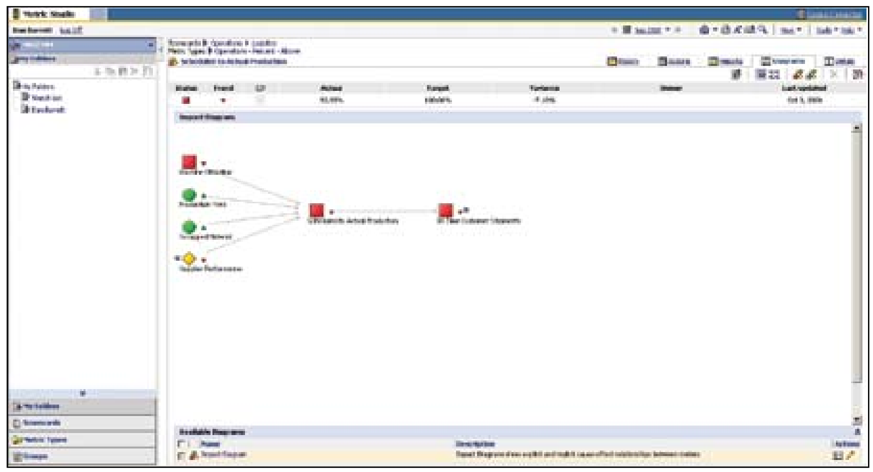
3. **Make.** Processes that transform product to a finished state to meet planned or actual demand.

4. **Deliver.** Processes that provide finished goods and services to meet planned or actual demand, typically including order management, transportation management and distribution management.

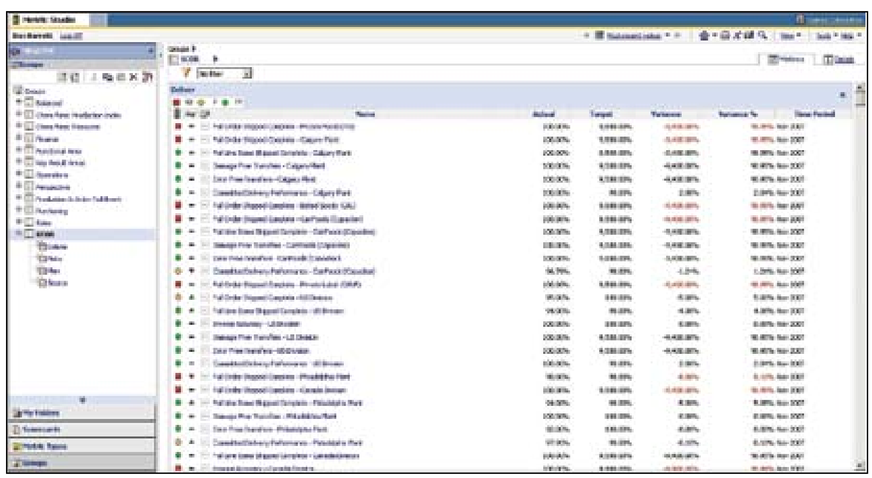
5. **Return.** Processes associated with returning or receiving returned products for any reason, which extends into post-delivery customer support.

The SCOR model provides a framework for looking at the entire supply chain to determine how to best meet the customer's requirements. On a daily basis, logisticians gather critical data, such as order backlog, order fill time and days of inventory stock, that, when measured against leading metrics, can provide the means to improve performance.

The ultimate goal of scorecarding is to focus everyone in the organization on the same metrics. Corporate performance targets can be aligned with floor activities, with measured results and drill-down analysis, and the entire organization can be structured to promote process ownership.



Manufacturing Scorecard: Scheduled to Actual Performance



Typical SCOR metrics

Five simple steps to fast, effective scorecards

"If you cannot draw your strategy map on a napkin, it is too complicated."

– Brett Knowles, President, pm²

Performance Management & Measurement (pm²) is an independent performance-measurement consulting firm founded by Brett Knowles. Brett has been working in this area for over 15 years and is a former vice president of The Balanced Scorecard Collaborative. Brett's experience includes the initial research work on the Balanced Scorecard and his team has built over 2,000 scorecards for private and public sector organizations from around the world (**www.pm2.ca**). The following few pages present pm2's five simple steps to a fast, effective scorecard.

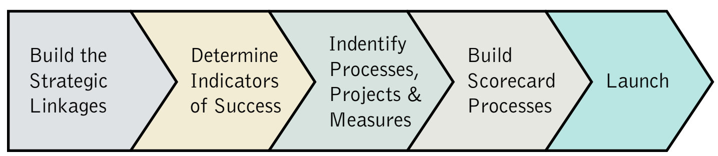
Setting up a Balanced Scorecard appears to be a great intellectual quest. What a wonderful challenge for a team – to figure out the critical aspects of your organization and how to measure them. The problem is this: no matter how many people you put on that team, you will have access to only a tiny portion of your organization's wisdom; therefore, more often than not, you will miss the critical aspects of your organization's success. The trick to creating a great scorecard is to "rough it in" first, just like building a house. Use the team to create the framework for a great scorecard, like the framing of a house, and then quickly release it to the organization with the request for them to provide the details around the roughed-in scorecard.

In the house metaphor, the scorecard team members are just the framers – putting up the wood frame of the structure. The organization's job is to put in the plumbing, electricity, walls, paint, wallpaper and so on. How do you do this "scorecard-framing" work? There are five distinctly different tasks that provide the breadth of understanding required for a scorecard and performance measurement process. The trick, like framing a house, is to build the whole structure's framework quickly in order to make it self-supporting. If you pause too long between any of the steps, the entire program fails, as the organization begins to "tweak" elements of the scorecard before the overall structure is built and understood.

Step 1: Build the strategic linkages

Step 1 calls for capturing the existing strategy and documenting it in a new way, called a strategy map. The strategy map is the "secret sauce" that is a requirement for all great scorecards.

Drs. Kaplan and Norton, authors of *The Balanced Scorecard* and *The Strategy-Focused Organization* and other bestsellers, frequently quote a Fortune magazine article revealing that 90 percent of strategies fail—not because they are weak, but merely because they are not executed! Given such a high failure rate, the most important gain for your organization will come through the execution of your existing strategy—not through devising a better strategy.



Do not allow your scorecard project to get sidetracked into another "strategic planning" activity. Take whatever strategy your organization is actually using and capture that. (After using the scorecard for six months, you will have enough information to have an informed strategic planning discussion.) A strategy map describes what the organization needs to do to be successful. In building a simple map showing the relative importance of strategic objectives, the senior team is able to create alignment across their areas and an overall game plan, without committing to specific actions, performance levels, or ownership. The strategy map becomes a risk-free tool to engage the leadership team in agreements about the way forward.

As the organization learns and needs to refine its strategy or direction, the strategy map becomes the tool to capture and communicate those changes. Building the strategy map is work for the senior team within the area being scorecarded. The measurement team may or may not be invited to sit through the session.

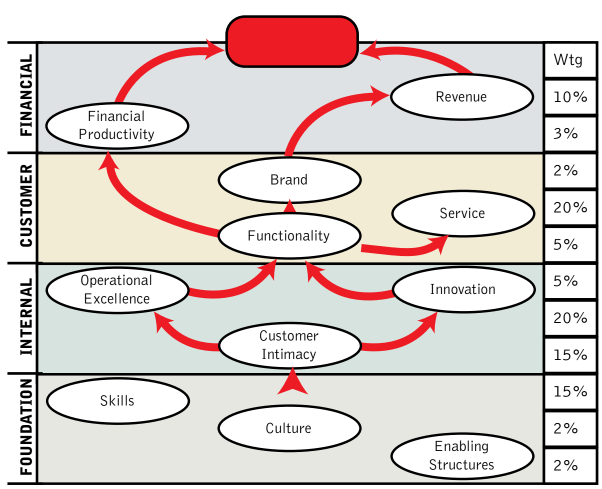
Step 2: Determine indicators of success

Good scorecards start off with indicators – not measures. What is an indicator? Think of "miles per gallon." It is an indicator of the car's performance, but does not try to diagnose specifically what might be wrong. Low mileage might be caused by poor engine performance, soft tires, or bad driving technique.

Many of our clients use employee absenteeism as an indicator of employee satisfaction. It is not precisely accurate, but many organizations have discovered that unhappy employees tend to take more sick days. Periodically they will check the indicator with a more rigorous analysis – say an employee survey – to ensure it is still a good proxy. By using indicators, not measures, a number of benefits can be realized:

- **Better breadth of scorecard coverage with fewer indicators:** Because the indicator covers a wide range of possible causes, a single indicator provides wide coverage (for example, absenteeism might be caused by poor management, organization changes, or reduced rewards).

- **Ability to start using the scorecard right away:** There are always indicators available in the organization that can be immediately used in the scorecard. It is important to select indicators after you have built the strategy map. An organization would not adjust its strategy just because there were no obvious measures. Make sure that you do not confuse the two concepts.



Step 3: Identify processes, projects and measures

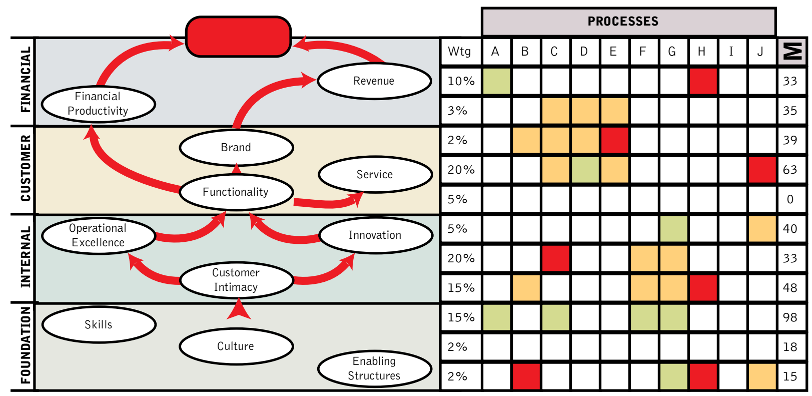
The promise of the scorecard is the translation of strategy into action. An important deliverable from any scorecard process must be the linkage between strategy and what we do – the processes and projects we work on from day to day.

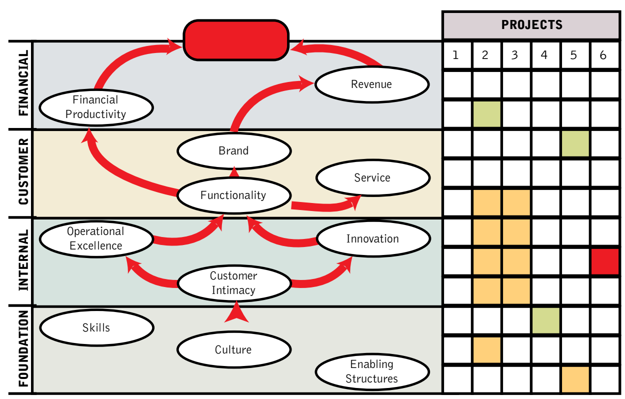
During the third step, the scorecard team should produce a short list of core processes, identify which ones are critical to each Strategic Objective on the strategy map, and then rank the processes' ability to support that objective. This will allow the organization to identify the strategic impact of each process. Processes that have a high weighting but provide poor support are performance risks for the organization.

Likewise, all significant projects should also be ranked based on their impact in improving the performance around each Strategic Objective. Ideally, projects will provide support around the identified weak processes; if not, the organization has a misalignment between the projects and strategic need.

It is not unusual to find that 40 percent to 60 percent of existing projects do not link to any Strategic Objectives. Those projects should be stopped right away, so as not to divert resources from the things that will help execute the strategy.

By the end of Step 3 the team will have a rough-cut risk analysis illustrating the "execution gap"—the gap between what the strategy calls for and the capabilities of existing processes and projects. In this illustrative chart, the team can clearly show the risk profile by Strategic Objective. Typically, we invite the senior team in to review the findings from Steps 2 and 3 (indicators, Strategic Objective risk profile, projects recommended for suspension).





Step 4: Build scorecard processes

In order to receive all the benefits that scorecarding offers, management needs to learn some new techniques. The scorecard needs to (slowly) become integrated with other existing processes, such as accountabilities and financial planning, and some efforts need to be made in shifting the organization's mindset to a performance-based culture. Processes need to be designed for the monthly gathering of data and objective owner commentaries. Step 4 calls for designing where the data is to come from, who writes the commentary, when it is due and how it is published.

On the management process side, as Drs. Kaplan and Norton describe in The Strategy-Focused Organization, you will need to begin making "strategy a continuous process" and making "strategy everyone's job." Central to this is the addition of a new type of quarterly management meeting – a Strategic Management Process – in which the strategy map and weighting are reviewed to ensure that they are constantly tracking the best way forward for the organization. Based on the work done in Step 3, the organization can begin linking the strategy down to the team or individual level by assigning accountability for each supporting process and project, which in turn is linked to each Strategic Objective.

Step 5: Launch

It is important to get the scorecard into the hands of the organization as soon as possible. Launching the scorecard has three components: developing a presentation to be given to the entire organization (repeatedly), getting management to openly support the scorecard and getting agreement on the next steps.

Want an even faster route?

Through an alliance with Performance Management & Measurement (pm2), we have developed a hands-on method of helping organizations align their strategy with execution. Seasoned IBM Cognos consultants, market-leading software and an intensive program delivered by pm2 combine to offer your management team a complete scorecard experience. Together, we can help ensure your organization takes the right first steps toward a performance management culture.

The Rapid Scorecard Service delivers:

- A strategy map and scorecard.
- A fully functioning scorecarding application populated with your key metrics.
- A detailed go-forward plan.
- Skills transfer to your project manager.

For more information, please call 1-800-426-4667.

The end result

Scorecarding with IBM Cognos 8 BI enables organizations to manage the business through a network of metrics, thresholds, histories and accountabilities. Consumers are able to identify problem areas in the organization, ensure alignment of key stakeholders and communicate strategy across the organization through enterprise scorecards. The end result is the ability to:

- **Align employees around organizational strategy and execution:** Employees understand what they are responsible for and how their performance contributes to the overall performance of the organization.

- **Make targeted, prioritized information easily accessible:** Scorecards provide the means for people at all levels of the organization manage their own performance. A scorecard is always on, always current and always factual. As the organization gains a better understanding of the scorecard, and what individual impact has on local performance and organizational performance, confidence increases in its ability to track and manage performance. As individuals see a scorecard as a way for them to identify issues and validate them with senior management, they are able to justify changes in budgets, headcounts and other matters.

- **Bring clarity and transparency:** Organizations have visibility into the business processes and activities that are important to their mission and program goals. They are able to exploit information to monitor issues, get early warnings when things are not tracking to plan and manage performance against expected outcomes.

- **Communicate critical success factors:** Everyone has access to relevant information. This ensures employees understand critical success factors and their role in organizational success. This is communicated throughout the organization at the same time from the same system.

- **Enable rapid response to shifts in strategy:** Strategies continually shift. Management tools need to accommodate change. A scorecard is not static. With greater insights into the drivers of organizational success, you can adapt the scorecard to reflect this and changing priorities.

IBM Cognos software has helped thousands of global manufacturing enterprises make these goals a reality. Our customers trust IBM Cognos solutions to increase customer, product and channel profitability, manage and reduce risk, address compliance issues and improve the predictability of financial performance. Each of these customers has a unique story.

Here is just one:

Profile in performance: Scorecarding at Mueller

In a fast-paced, global economy, manufacturers can't afford lackluster performance. They have to get the job done faster and cheaper, and still maintain a high level of quality. Competition, outsourcing and increasingly complex supply chains add to the challenge.

When timing and quality control are paramount, manufacturing organizations need to be able to plan, analyze and measure results. So they can better manage operations, respond to customers, keep pace with the market and drive growth. With this in mind, Mueller chose IBM Cognos software to power its corporate strategy and performance.

Mueller manufactures prefabricated steel buildings, roofing and construction products that can be purchased as whole sets or components. It has served the southwestern U.S. for over 75 years. With over 500 employees, the privately held company operates from three manufacturing and distribution locations and 22 retail outlets.

This case study will focus on how Mueller uses IBM Cognos software to help:

- Support its award-winning Balanced Scorecard initiative.
- Accelerate information delivery, from three days to three minutes.
- Provide in-depth insight into sales, finance, inventory and purchasing.
- Gain fact-based analytic and decision-making capabilities.
- Improve customer sales and service.

Management now spends more time on strategy and improving the business. What's more, operations, sales and customer information can be accessed quickly and consistently, and shared across the organization to improve results. The outcome is better quality products, improved performance and a new level of customer satisfaction.

Business background and the case for change

After years of strong growth, Mueller made the decision to expand from selling to distributors and contractors to providing products directly to customers. This required a different mindset and strategy.

The first step was to implement a Balanced Scorecard, which would set the new direction for management and staff. In essence, this strategy map would allow the company to identify and measure key performance indicators in four areas: finance, customer service, internal process improvements, and learning and growth.

The challenge was to find a platform that would integrate the customer data and metrics, and disseminate the information to people across the company in a timely, cost-effective way. So they could in turn make informed decisions. A performance management solution offered the answer.

Mueller selected IBM Cognos 8 Business Intelligence for reporting and analysis, and IBM Cognos Metrics Manager and IBM Cognos 8 Planning to further its scorecard and financial planning initiatives.

IBM Cognos Performance Applications were also added. They would allow the organization to fill gaps in its operational reporting and gain immediate insights into the health of the business.

Business impact

Mueller has seen some big leaps forward in terms of information speed and accuracy. Users have faster access to standard reports and more thorough sales analysis. In many cases, content is delivered in minutes instead of days.

Mark Lack says one of the first things management noticed is the new level of insight and understanding people are sharing in company meetings.

"People in the past would talk about process or strategy and say 'It would be great to know the percentage of this, or why that happened.' This kind of discussion would have been either rhetorical or would have to be taken offline to research. We now pull up the Cognos system and can find the answers right away."

What's more, staff can drill into details and pull together different pieces of information to gain dimensional views they never had previously. The insight is a boon to decision-making

"We can find information that we didn't even know existed before," adds Lack. "People are calling me and asking very advanced, complex questions, which means they are looking at the data in new ways.

"We've created a much more knowledgeable workforce that can now act on key information very quickly."

Deeper customer insight

By integrating the Balanced Scorecard with financial and operational reports and scorecards, Mueller is able to answer key questions such as:

- What type of products are people buying?
- Are customers buying complete metal buildings? Are they buying parts or the entire project?
- What type of customer is buying Mueller products?

Finding the answers not only provides insight in terms of business performance; it can also help improve customer relationships. For example, understanding whether the customer is a contractor or builder can make a big difference in business planning and customer relationship management efforts.

"If we manage the customer relationship correctly, it will reflect on our business performance," Lack explains. "By gaining more control over our information, we've created some strategic shifts in the way we view customers.

"With the help of IBM Cognos software, the Balanced Scorecard has improved our ability to reach out and provide the level of service the customer requires."

Award-winning results

Because of its breakthrough performance results, Mueller was named to the Balanced Scorecard Hall of Fame for Executing Strategy by the Balanced Scorecard Collaborative.

"The biggest benefit to our organization is the clarity the methodology provides," Lack explains. "Our scorecard initiative makes it easier to spot areas for improvement, keep focused on goals and measure progress."

This clarity inspired an important change in the company's culture. What began as a measurement tool has evolved into something more, says Lack.

"We use the scorecard to communicate the company's strategic objectives and priorities, so that everybody has a part. And they can see what is most important for us to be doing. While many view it as a measurement tool, we've always looked at it as a communication tool first and foremost."

For example, a metric that shows the company is manufacturing a certain number of parts per minute, or per labor hour, tells only part of the story. If the company can show that by implementing a new process it will have fewer errors and higher quality, the customer is likely to buy more and have more loyalty.

Quality products, customer satisfaction

In the final analysis, the most important measures of success are product quality and customer service. The right information and performance management tools can help translate these critical metrics into greater customer satisfaction, higher sales and business growth.

"When somebody puts a beautiful metal roof on their house, and a neighbor comes up and asks 'Where did you get that roof?' we want them to say 'That's a Mueller roof.'

"There are many companies that sell these kinds of products, but the value we add and the assurance we give our customers is what brands us as a sign of quality. So instead of a metal building, people are buying a Mueller building. And if we can get people to think that, we've won."

Conclusion

With multiple delivery channels, market specialization, high-profile mergers and acquisitions, growing compliance requirements and rising operational costs, manufacturing organizations are increasingly turning to IBM Cognos software to help make sense of their high-stakes and complex business landscape.

Many of the world's leading manufacturers already choose IBM Cognos solutions, including 19 of the 20 largest consumer packaged goods (CPG) manufacturers, nine of the top 10 high-tech companies and all of the top 10 auto makers. For manufacturing organizations, both large and small, we offer:

The right technology and solutions

IBM Cognos integrated performance management software and services let the world's most progressive manufacturers:

- Leverage their existing investments by aggregating data from transaction systems (SAP, Oracle, Manugistics, etc.) and other sources across the organization, creating a single, integrated performance management framework—for rapid decision-making.

- Analyze customer, product, market and channel profitability.
- Move beyond cumbersome, error-prone spreadsheets for key plans like sales and operations planning (S&OP) with flexible, connected software to reconcile sales and demand forecasts with supply chain and production plans, and to test multiple cost scenarios.
- Identify the source of production issues and take corrective action.
- Comply with legislation (SOX) and regulatory requirements (OSHA, EPA).

The fastest methods

IBM Cognos Performance Blueprints help manufacturers quickly address planning and performance management process areas that need attention. IBM Cognos Performance Blueprints consist of targeted, pre-built data, process and policy models based on proven best practices in manufacturing operations, sales, marketing and finance. They include:

- Sales and Operations Planning (S&OP) Performance Blueprint.
- Trade Promotion Management Performance Blueprint.

Performance management experts

When you make an investment in IBM Cognos software, IBM Cognos Software Services makes a commitment to you: to bring the full range of our personnel, resources and expertise to your deployment to help you achieve the next level of performance. Our Professional Services, Education and Support services help you accelerate deployment, promote strong user adoption and increase your competitive advantage.

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About IBM Cognos BI and Performance Management

IBM Cognos business intelligence (BI) and performance management solutions deliver world-leading enterprise planning, consolidation and BI software, support and services to help companies plan, understand and manage financial and operational performance. IBM Cognos solutions bring together technology, analytical applications, best practices, and a broad network of partners to give customers an open, adaptive and complete performance solution. Over 23,000 customers in more than 135 countries around the world choose IBM Cognos solutions.

For further information or to reach a representative: **www.ibm.com/cognos**

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To request a call or to ask a question, go to **www.ibm.com/cognos/contactus**. An IBM Cognos representative will respond to your enquiry within two business days.

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Endnotes

1 Supply Chain Business Intelligence," Ventana Research, April 2007.

2 Ibid.

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