Rebalancing the scorecard

Enhancing value in the automotive industry

Executive brief
Rebalancing the scorecard: Enhancing value in the automotive industry

In a high-performance vehicle, all of the vehicle systems and components need to be integrated and finely tuned to operate safely at extreme speeds. A failure in any of the critical components could mean disaster. Fortunately, careful design and engineering go into balancing the speed and power of a vehicle with the ability to handle and control the vehicle to avoid accidents and reduce the driver’s risk.

Imagine if all of an automotive company’s design and engineering efforts focused only on achieving higher speed – with more powerful engines, faster acceleration, more responsive steering, more complex components and more technology – but did not include the requisite improvements in braking, fuel efficiency, accident avoidance, instrument panels, driver controls, air bags and other safety features. This recipe for disaster is one that no automotive executive would contemplate. While we would never see a vehicle designed in such a manner, some businesses are being managed this way. Over the last 10 years, automakers and suppliers have been driven to operate at higher rates of speed, react more quickly, become more nimble, manage more complexity and introduce new technologies to stay competitive. However, while accommodating these dramatic changes, many of these companies have failed to improve their “driver control systems,” namely their performance management, risk management and financial control systems required to operate their businesses at high speeds.

Companies need to rededicate themselves to developing modern management control systems and ‘rebalance’ the scorecards by which they measure success.

The balanced scorecard

Business and financial executives across all industries are focused on optimizing shareholder value. The methods of measuring and managing value creation, for many companies, are still rooted in the traditional accounting methods that primarily emphasize financial measurements and continue to miss the mark in measuring shareholder value creation. Few companies have successfully “cracked the code” of measuring value creation, and this goal continues to elude many executives.

Robert Kaplan and David Norton, leaders in business performance management, recognized the limitations of managing with only traditional financial information and proposed an alternative approach. In 1992, they introduced a new performance management tool called the balanced scorecard.

Over the past decade, the balanced scorecard phenomenon has sparked a revolution in how companies measure their performance. The methods and tools for implementing a balanced scorecard have evolved over the last decade, spawning a new software and services sector known as Business Performance Management (BPM) or Enterprise Performance Management (EPM).

However, in spite of all this attention, use of the balanced scorecard in the automotive industry has been limited when compared with other industries. Many companies continue to struggle with the design of a relevant balanced scorecard and implementation of an effective balanced scorecard system.
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The design challenge
The primary goal of implementing a balanced scorecard is to drive the successful execution of a business strategy, which means delivering the right measurements (key measures aligned with strategy), to the right people (those who can take action), at the right time (when action can make the biggest difference). While this is Performance Management 101, the dynamic nature of the automotive industry makes it difficult to execute on these fundamentals.

The challenge in designing a balanced scorecard is not defining a set of measures, but optimizing the selection of measures to achieve balance. For every measure indicating positive performance, there is usually an offsetting measure that would indicate negative performance. Achieving a balanced set of measures is not about accepting a compromise, but rather achieving optimization. It is finding the set of measures that equally balance both sides of the scale or occasionally finding those rare measures that sit directly on the fulcrum.

The balanced scorecard, as defined by Kaplan and Norton, has four perspectives:
- Financial perspective
- Customer perspective
- Internal business processes perspective
- Learning and growth perspective.

Examination of the balanced scorecard’s four perspectives will enhance understanding of the daunting challenge of designing a balanced scorecard in the automotive industry.

Financial perspective
Internal measures or external markets: Hitting a moving target
Most automotive companies and suppliers today are destroying shareholder value. Put simply, cash profit less an appropriate charge for the opportunity cost of all invested capital has been negative in recent years. In the late 1990s, many automotive companies began to adopt shareholder value-based measures such as Economic Value Added, Economic Profit, Total Shareholder Return and similar metrics. Some companies used these measures in an attempt to link internal financial results with their stock price as a corroborative measure of value creation. Unfortunately, automotive companies began to adopt these measures in the midst of the dot-com boom, a time when the stock market was behaving irrationally. Best efforts by scorecard designers were sidetracked when they tried to explain how a dot-com startup could command a market value higher than the combined market value of the Big Three automakers. As a result, the one “new” measure to survive these efforts in most companies is Return on Net Assets (RONA). RONA has been widely adopted in the industry as a proxy for the more sophisticated value-based measures, but it is actually a century-old financial accounting measure undergoing a popular revival.
Volume or profit: Profitless prosperity
One truism of the automotive industry was that “when volumes were high, the industry made money, and when volumes were low, the industry lost money.” That statement was true until three years ago. Due to an unprecedented increase in incentive spending, the industry is now experiencing the paradox of “profitless prosperity” where sales volumes are at record levels, but automakers are losing money. All of the historical relationships among sales volume, capacity utilization and profitability no longer hold true. For the first time in the history of the automotive industry, we are seeing record sales volumes and record losses at the same time. Imagine the dismay of scorecard designers building on what they believed to be the bedrock foundation of the industry economics, only to have it crumble beneath them. Some suggest that this tectonic shift in industry economics indicates the opening bell in the first round of the “automotive end-game” – a slugfest in which the traditional Big Three automakers possibly become the Big Two.

Customer perspective
Customer or product: Customer is king, but product is most important
In every industry it is easy to assume “The customer is king” and adopt a broad set of performance measures around customer satisfaction. However, over the last few years, the automotive industry has adopted a new mantra – “The three most important things in the automotive industry right now are product, product and product.” While focusing on the customer is certainly important, industry executives continue to emphasize that if you do not have a great product, you do not stand a chance of retaining a “loyal” customer or winning a new customer. There is intense competition in the industry with over 400 vehicle models vying for the attention of a slow-growing customer base. In fact, recent studies have shown that 80 percent of customers who switched vehicle brands were highly satisfied with their previous brand. By focusing exclusively on traditional customer measures, an automotive balanced scorecard would miss the important dimensions of product and product innovation that are really driving customer strategies in the industry today.
Dealers or consumers: Dealing with two customers
The automotive industry also has the challenge of having two sets of customers to measure – dealer networks and end consumers. Automotive companies sell their vehicles through independently owned franchise dealerships, and these dealers are the automakers’ initial “customers”. The dealer network then sells vehicles to the end consumer, who is both the dealer’s “customer” and the automaker’s “customer.” When measuring performance, however, the dealer network often is included as part of the extended enterprise and viewed as being similar to an internal business process rather than as a customer. But automakers cannot afford to alienate their dealer community, so dealers must be measured as “customers.” This conflict continues to challenge scorecard designers as both the customer perspective and measurements vastly differ between the dealer and the consumer.

Rational or emotional: Aggregate patterns of consumer buying behavior
Improving product quality and the customer experience is very important. J.D. Power IQS2 and APEAL industry studies are excellent benchmarks. However, automotive companies must balance their performance measures between customer satisfaction and product innovation. With the intense competition in the industry, even the most satisfied customers are becoming less and less brand loyal. By focusing exclusively on customer satisfaction and measures, an automotive company may lose sight of other important customer buying habits. The automotive industry is often described as a fusion of fashion, technology and engineering, and consumer buying habits exhibits aspects of all three. Customer measures focused strictly on “rational buying habits” tend to be poor predictors of future vehicle purchases.

Vehicles, parts or financing: Measuring value creation
Many automakers are generating more profit from financing and service parts than they are from their core vehicle business. This creates a challenge for many scorecard designers. Many of the traditional measures in the automotive industry are focused on the design, manufacture and sale of new vehicles, and the financing and service parts businesses are usually relegated to an “All Other” category. With the shift in profit generation away from vehicles and into financing and parts businesses, measurement systems must be rebalanced to focus on the latter. Many executives argue, however, that if they weren’t selling new vehicles, they wouldn’t have any financing or service parts businesses, so they tend to cling to the traditional reporting formats and make mental adjustments to inadequate reports based on years of experience and many assumptions.
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Internal business processes perspective

**Internal or outsourced: Core and non-core processes**

Internally, most automotive companies have focused on relentless cost reduction – a well-honed skill in the automotive industry. A key element of any cost-cutting strategy is to spin off or use outsourcing for non-core components of the business. For example, General Motors first spun off EDS, its information technology provider, then spun off Delphi, its component group, and continues to push the envelope of outsourcing. Group Vice President and CIO Ralph Szygenda now describes GM's entry into the "third wave" of outsourcing: Competing providers vie for many smaller slices of the GM pie, often partnering with rivals on one project while competing head-to-head on another. However, when GM spun off EDS and Delphi, its performance still was as dependent on the performance of its "suppliers" as it was when the suppliers were part of the GM enterprise. The broad supplier network required to build an automobile has been described as the extended enterprise. For purposes of designing a balanced scorecard, it is important to measure the performance of the virtual enterprise, not just internal business processes.

**More risk or less risk: The extended enterprise**

By using outsourcing for non-core processes, companies can focus management energies on core competencies, or at least this is the conventional wisdom. But the Enron debacle showed that just because a process has been outsourced or is technically "off the books," it is no less part of the overall risk profile of the company than when it was housed within the company's four walls. Furthermore, high-profile cases like the Ford Motor Company and Bridgestone/Firestone tire incident demonstrate how respected brands can be tarnished as vehicle owners tend to ignore the legal entity boundaries between suppliers and Original Equipment Manufacturers (OEMs). The question that arises then is, "What is the real difference between an internal and outsourced process?" When developing a balanced scorecard in the automotive industry, focusing exclusively on internal processes is myopic and risky. A balanced scorecard needs to address the total risk profile of the extended enterprise, and that may include financial, warranty, liability, brand image and business interruption risks.

Learning and growth perspective

**Scale or agility: Leveraging global scale**

Many automotive companies are focused on continuous improvement and the quality standard of Six Sigma. But most will admit there is still great opportunity for improvement. Over the past five years, many automotive companies, automakers and suppliers have been digesting global acquisitions, mergers and other combinations created by the unprecedented consolidation evidenced in the late 1990s. The problem facing the industry is that, following a period where everyone was convinced they needed to "get big" to survive, the market simultaneously demanded that companies "get fast" to respond to new competitors and new products. How can a scorecard measure the trade-off between scale and agility?
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**Working smarter or working harder: Leveraging knowledge**
Management experts agree that learning and growth are the key to strategic success of a company and the foundation for the future. A learning organization is one in which knowledge is managed, harvested and deployed to create value in an organization. New ideas are vital to the future of the automotive industry, and industry executives continually ask where the next big idea will come from. However, automakers and suppliers continue to "reinvent the wheel," or work harder, by failing to leverage knowledge globally within their complex, fast-moving organizations. How can a performance measurement system encourage employees to challenge the status quo, generate new ideas and leverage an organization’s intellectual capital?

**The design challenge summary: Art or science**
The examples discussed above demonstrate how designing a balanced scorecard can be a challenging and complicated task. Even 10 years after introduction of the balanced scorecard, the design of a scorecard is still more "art" than "science," and the complexity of such an activity should not be underestimated.

Designing an effective scorecard involves much more than selecting the right measures. It requires the following:
- Linking measures together into a cohesive framework and tying each measure to business drivers
- Defining appropriate measures for different audiences or roles
- Linking measures to a set of cascading scorecards that drive business conduct through all levels of an organization
- Integrating performance measures with performance-based compensation, budgeting and planning and operational improvement initiatives.

Therefore, designing a balanced scorecard is not a one-time exercise but an ongoing effort. It requires top talent and development as a core competency within a company.

**The implementation challenge**
Even well-designed balanced scorecards are difficult to implement, and many companies have struggled with their implementation. In many cases, once a balanced scorecard is developed, use of the scorecards falls far short of expectations. Typical pitfalls include the following:
- Inability to cascade high-level measures down to viable line-level metrics
- Usually backward looking indicators versus leading indicators
- Too few measures selected to capture the fundamentals of an enterprise
- Four scorecard perspectives not equally balanced in importance or relevance
- Selected measures too rigid to adapt to a changing business environment
- Trade-offs and priorities between measures not evident
- Complexity in creating "one set of numbers" that roll up to corporate scorecard
- Offline report prepared periodically for management review, not action
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- No linkage between scorecard metrics and other day-to-day operating measures
- Scorecard results not tied to compensation or performance ratings
- Lack of information integration
- Immaturity of balanced scorecard of BPM software and tools.

These pitfalls are caused by a combination of design, technology and organizational limitations. The good news is that many of the technology challenges are surmountable. The balanced scorecard concept was introduced in 1992, in an era before the Internet, ERP systems, low-cost data storage and globally connected companies. Therefore, the 1992-vintage version of the balanced scorecard is an anachronism by today’s technology standards. However, many companies are still rooted in the handcrafted, once-a-month, hard-copy version of the balanced scorecard.

The information delivery challenge

Today’s successful balanced scorecard deployments leverage an organization’s strategic investments in technology. Many companies made investments in ERP and CRM as well as data warehousing and business intelligence tools. Yet, with all this investment there is still a proliferation of manual processes supported by spreadsheets and presentation software. In many companies, armies of resources are working to consolidate performance data so key decision-makers have the right information to make the right decisions. But will they get the information in time? How can they be assured they have the single version of the truth? Can the process support the inevitable request to show the detail behind the numbers?

The Internet has ushered in a new era for the balanced scorecard. A browser-based interface is the first low-cost interface between large numbers of employees and corporate systems. The low-cost interface, powerful enterprise data management tools and plunging cost of data storage present new opportunities to exploit technology to create a new type of balanced scorecard. Security tools also have matured. ERP vendors have extended their products to include performance management modules. Until now, it has been difficult for companies to consolidate critical data from disparate systems into a clear, concise, integrated "single version of the truth." But thanks to advances in information technology and information delivery, the balanced scorecard is entering a new phase in its lifecycle.

The business case challenge

In a down economy with many companies focused on cost reduction, it is difficult to justify investments in new technology without rapid payback. Many companies are still recovering from massive technology investments in Y2K preparedness, ERP implementations, dot-com missteps and e-business implementations. However, leveraging information technology to implement a balanced scorecard is the only way to create a compelling business case during these times. It is difficult to create a compelling business case when scorecard implementation relies on manual processes, rekeyed data and handcrafted reports distributed only to a limited subset of management. The
real business case for a balanced scorecard lies in the
promise of getting realtime, accurate, relevant data into
the hands of all top managers and decision-makers in
the business. Imagine the impact on a business if 500 top
managers all had access to balanced scorecard informa-
tion – in realtime and at the right time – at their fingertips.
And by leveraging investments in ERP, enterprise portals
and knowledge management systems, the business case
for a balanced scorecard system becomes much more
attractive than in the past when these foundational ele-
ments did not exist.

**Designing the future balanced scorecard**

The four perspectives

The four perspectives of the balanced scorecard should
be used as a broad framework for the development of a
scorecard, not as a prescriptive formula. A balanced score-
card should reflect a company’s strategy in the language
of the company and not be a textbook scorecard. In some
cases, it may be necessary to add additional dimensions.
The structure and language of a company’s business
strategy documents and operating plans should be used
as guidelines for developing the language and structure of
the balanced scorecard.

Number of measures

In the past, scorecard designers focused on decreasing
the number of measures. This pragmatic approach was an
attempt to control the number of measures that could be
calculated and updated on a routine basis and to limit the
number of measures that can be focused on to manage
the business. With advances in technology, more measures
can be automatically updated more frequently, drill-down
capabilities can be used to provide details behind a core set
of measures, and scorecards can be integrated with source
systems for robust analytical capability. While a pragmatic
approach is still recommended, it is recognized that technol-
ogy has lifted some of the barriers that limited the scope
and sophistication of scorecards in the past. By leveraging
technology, scorecards can now be linked to a series of
cascading scorecards that limit the number of measures at
any given level, but provide a consistently linked framework
of performance reporting driven down to the lowest level in
the organization.

The acid test

Designing a scorecard is not a one-time event – it is an
ongoing process. Just as a company revisits its strategy
periodically, it must also revisit its scorecard to ensure
that it is consistent with company’s business strategy. The
acid test of a balanced scorecard is whether it compels
managers to act in a manner that is consistent with the
company’s strategy and act in a manner that creates value.

Recommended measures for the
auto industry

While the performance measures defined on a bal-
anced scorecard should vary for different companies
with different strategies, key measures for each of the four
perspectives should be considered when developing a
balanced scorecard in the automotive industry.
Some key measures are discussed below.

Financial perspective measures

Target cost achievement
Automakers and suppliers are continually challenged with launching new products more quickly and maintaining a competitive cost structure. Eighty percent of the cost of a vehicle can be impacted when the vehicle is in the early design phases; this percentage drops to about 20 percent once a vehicle is in production. Setting target costs, engineering the vehicle to hit the target costs and working with suppliers to achieve target costs is a key financial measure for any automotive company.

Capital efficiency
The automotive industry continues to be a capital-intensive industry. It can cost up to $3 billion to launch a new vehicle program. Automotive companies need to achieve a greater return on their capital investments. Operating profit as a percent of capital expenditures must continue to increase if automotive companies hope to earn back their cost of capital and become competitive again in the financial markets. Many companies use capital efficiency measures in their investment approval processes such as net present value (NPV) or internal rate return (IRR) but fail to incorporate these types of cash-based measures into the ongoing reporting structure. To continually reinforce the importance of earning back the cost of capital employed, capital charges should be applied to internal profitability reports to arrive at Economic Profit (EP).

Return on Value Added (ROVA)
As automotive companies continue to use outsourcing for more and more of their processes and components to suppliers, comparative financial reporting becomes quite complex. For example, if an automaker sells a parts-making operation to a supplier, assets and working capital leave the automaker’s balance sheet, and operating costs are reduced from the income statement. Then as products are sold back to the automaker by the supplier, all of those costs plus a profit margin hit the income statement as cost of goods sold. But the question remains: Is shareholder value actually created through this transaction? Costs may be reduced in the short term, but when a process is outsourced, the profit-making potential also goes with that process. From a shareholder value perspective, materials are essentially passed through to the end customer at cost, and automotive companies can only generate a profit on the value adding processes that remain in-house. New types of measures, such as Return on Value Added (ROVA), are required to understand the dynamics of outsourcing and identify the value creating processes within a company (see Figure 1).

Vehicle lifetime profitability
Financial analysis of an automaker or supplier is always complicated by the fact that vehicle lifecycles span five to seven years. To fully understand the economics of the business, the lifetime profitability of a vehicle program should be measured. A typical vehicle program requires a large capital outlay before the product is launched. Initial volumes typically are very high and hopefully achieve a
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Notes: Return on Value Added (ROVA) is an innovative new measure for pinpointing the creation of value in an enterprise. ROVA is based on the following principles:

(A) Materials are passed through at cost to the customer. Profit can only be created through the value adding resources of an enterprise.

(B) Revenue net of Purchased Materials is the new “top line” showing the value paid to the enterprise for their value adding resources.

(C) Total Value Added is the cost of all of the human resources, physical resources and financial resources used to deliver value to customers.

(D) ROVA Measures the economic profit generated by the value adding resources employed by the enterprise and measures the relative efficiency by which these resources are used to create value.

Source: IBM Business Consulting Services.

Figure 1. Return on value added - illustrative example.

<table>
<thead>
<tr>
<th>Traditional view</th>
<th>Small car</th>
<th>Truck</th>
<th>Sedan</th>
<th>Luxury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
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<td>$25,000</td>
<td>$25,000</td>
<td>$45,000</td>
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<tr>
<td>Purchased materials</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$17,000</td>
<td>$17,000</td>
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<tr>
<td>Manufacturing labor and overhead</td>
<td>$5,200</td>
<td>$7,900</td>
<td>$3,300</td>
<td>$14,700</td>
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<tr>
<td>Total cost of goods sold</td>
<td>$15,200</td>
<td>$17,900</td>
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<tr>
<td>Gross profit</td>
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<td>Earnings before interest and taxes (EBIT)</td>
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<td>$2,100</td>
<td>$2,100</td>
<td>$4,300</td>
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<tr>
<td>Net assets employed</td>
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<tr>
<td>Capital charge (Capital employed times WACC)</td>
<td>$1,040</td>
<td>$1,365</td>
<td>$1,365</td>
<td>$2,600</td>
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<tr>
<td>Economic profit (before taxes)</td>
<td>$560</td>
<td>$735</td>
<td>$735</td>
<td>$1,700</td>
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</table>

<table>
<thead>
<tr>
<th>Traditional financial measures</th>
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<th>Luxury</th>
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<tr>
<td>EBIT return on sales</td>
<td>8%</td>
<td>8%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>EBIT return on net assets</td>
<td>20%</td>
<td>20%</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>Economic profit (before tax) return on sales</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return on value added (ROVA) view</th>
<th>Small car</th>
<th>Truck</th>
<th>Sedan</th>
<th>Luxury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$20,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$45,000</td>
</tr>
<tr>
<td>(A) Less: Purchased materials</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$17,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>(B) Revenue net of purchased materials</td>
<td>$10,000</td>
<td>$15,000</td>
<td>$8,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>Manufacturing labor and overhead</td>
<td>$5,200</td>
<td>$7,900</td>
<td>$3,300</td>
<td>$14,700</td>
</tr>
<tr>
<td>Selling, administrative and other expenses</td>
<td>$3,200</td>
<td>$5,000</td>
<td>$2,600</td>
<td>$9,000</td>
</tr>
<tr>
<td>Capital charge (Capital employed times WACC)</td>
<td>$1,040</td>
<td>$1,365</td>
<td>$1,365</td>
<td>$2,600</td>
</tr>
<tr>
<td>(C) Total value added</td>
<td>$9,440</td>
<td>$14,265</td>
<td>$7,265</td>
<td>$26,300</td>
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<tr>
<td>Economic profit (before taxes)</td>
<td>$560</td>
<td>$735</td>
<td>$735</td>
<td>$1,700</td>
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<tr>
<td>(D) Return on value added (ROVA)</td>
<td>6%</td>
<td>5%</td>
<td>10%</td>
<td>6%</td>
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</table>

Notes: Return on Value Added (ROVA) is an innovative new measure for pinpointing the creation of value in an enterprise. ROVA is based on the following principles:

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(D) ROVA Measures the economic profit generated by the value adding resources employed by the enterprise and measures the relative efficiency by which these resources are used to create value.

Source: IBM Business Consulting Services.
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payback on the initial investment. In the later years of a vehicle program, some vehicles continue to contribute positively to the profit margin while others are hampered by low volumes, high incentives, warranty claims and recalls. The only way to measure the success or failure of a vehicle program is to measure it across its multiyear lifespan. This approach also creates a learning loop to understand how development costs or manufacturing investments early in a program lifecycle may impact quality or warranty costs in the later years. For each vehicle program, total lifetime net cash flow could be calculated to determine if a vehicle earned enough cash to fund its next generation vehicle or if it was a "net borrower" of company capital. External financial reporting does not take this perspective, and few, if any, automakers routinely measure the lifetime profitability of a vehicle program.

Corporate Average Fuel Economy (CAFE) compliance

Managing a product portfolio at an automotive company is a complex balance of cars, trucks, crossover vehicles, sport utilities, minivans and other types of vehicles. It is easy to assume that vehicle profitability reports could measure the precise performance of a specific vehicle, brand or platform. In reality, though, there is a complex interplay among vehicles, platforms and brands due to shared resources such as powertrains, shared facilities and high fixed-cost structures. The most confounding of these factors is measurement of the CAFE, which is measured across a company’s entire fleet of vehicles sold. Many companies can justify selling small cars at a loss, because it contributes to the overall fuel efficiency targets required to balance out less fuel efficient and often more profitable sport utility vehicles. In such cases, an internal "CAFE tax" for internal profitability reporting should be developed to rebalance or level the playing field and get a truer sense of the contribution of each vehicle to overall company profitability.

Customer perspective measures

Product portfolio map

In a highly competitive industry like the automotive industry, the product mix relative to that of the competition's is critical to the company's success. Whether an automaker's strategy is to compete in niche markets or large segments or to predict where the customer may be going next (sometimes even before the customer knows it), it is critical to manage a product portfolio coverage map. A product portfolio map should be defined by an automaker's market segments and could be based on traditional vehicle families, demographic or psychographic dimensions. For each segment, internal and competitive measures such as capacity utilization, sales volume, incentives and vehicle profitability should be measured. These segments are the field on which the daily battles are fought, and automakers should measure their rank in each segment. In addition, industry executives invest billions of dollars on future vehicle programs in these market segments. A product portfolio map can become the cornerstone for measuring product performance and customer perceptions by combining internal measures with competitive intelligence. A product portfolio map should be a cornerstone of any automotive industry scorecard.

Total cost of ownership to the customer

While automakers tend to focus on the sticker price of their vehicles, more important, from the customer perspective, is the total cost of vehicle ownership. For the customer, the purchase cost of the vehicle, financing, depreciation, insurance, registration, maintenance, fuel, repairs and other costs all factor into the affordability and "value" equation of a vehicle. Depending on the duration of ownership, a high-priced luxury car may in fact have a lower total cost of ownership than a mid-priced vehicle with a poor resale
value and high maintenance costs. While carmakers argue that a vehicle purchase is an emotional purchase, more consumers, partly through use of the Internet, are becoming savvier at understanding the lifetime economics of owning a vehicle.

**Volume due to incentives**

The concept of profitless prosperity – high vehicle sales volumes with low or no profits – continues to confound the generation of automotive managers who learned throughout their careers that there was no such thing as "bad volume." All volume was good volume. That formula certainly has changed due to deflation in vehicle prices and high incentives. Surprisingly, some automakers are achieving incremental profitability at higher volumes, even when high incentive spending props up this volume. What one industry executive refers to as the "incentive doom loop" may be considered a brilliant play to utilize capacity at another automaker. The interplay among fixed costs, capacity utilization and volume based on incentives is one of the most complex measurements in the industry. Understanding the economics of this equation is critical to all automakers.

**Quality and customer satisfaction**

Quality, safety and customer satisfaction continue to be key differentiators in customers' minds, and any scorecard from a customer's perspective should include measures covering these areas. Third-party quality rating agencies provide a wide variety of measures in this area. When consumers are purchasing their next vehicle, they generally remember their last trip to the repair shop but not necessarily the fit and finish of a new car when they first drove it off the dealer's lot four or five years ago. Therefore, measures of both initial quality and reliability over the life of the vehicle should be included. Many automakers focus their measurement on initial quality. We believe these are important measures of internal process capability, but not necessarily customer satisfaction. It is just as important to measure "perceived" quality as it is to measure "actual" quality.

**Product launch success**

Most people believe that automotive companies just manufacture vehicles. But automotive companies are really in the business of launching new vehicles. The successes of product launches are critical to the success of the company. Within every vehicle program launch, there also may be plant launches, model launches, initiative launches and brand launches. However, most of the monthly financial reporting does not segregate the launch impact, so invariably the monthly performance reports are riddled with aberrations somehow attributable to a new launch of some kind. Most financial reports are based on "normal operating conditions," and the continuous launch processes within the automotive industry tend to obscure rather than elucidate these numbers. Therefore, rigorous reporting of launch success factors and segregation of launch-related activity from normal operations should be done wherever possible.

**Internal business process perspective measures**

**Supplier sourced innovation**

If an automaker is only getting a good product at a low price from its suppliers, then the entire burden of developing new technology and innovation (what customers generally pay a premium for) rests on the shoulders of the OEM. In today's fast moving environment, the most successful OEMs will be those who can "pull innovation through the supply chain." These are the companies that can leverage the capabilities of their extended enterprises to bring innovation to the
marketplace faster than the competition. Supplier sourced innovation could include product innovations that attract more customers, product innovations that reduce costs, or process innovations that improve cost, quality or durability. With more vehicle components being outsourced, measuring supplier-sourced innovation is as critical as measuring internal innovation.

**Cost reduction program achievement**
Automakers have seen negative pricing, or price deflation, since 1995. In this environment, cost reduction is not a one-time exercise but a continuous process. Automotive companies that institutionalize their cost reduction programs and measure real cost reduction as traceable to the bottom line have a better chance than companies that continue to measure cost reduction programs as an offline calculation in which cost savings estimates are never really tied to the financial books of record. Traceability of cost reductions to the bottom line is an essential capability of any performance measurement system in the automotive industry.

**Outsourcing/supplier risk**
As automotive companies continue to use outsourcing for non-core capabilities and build global networks of suppliers, they may reduce their costs and focus on core competencies, but risks may be increasing. Although automakers are passing warranty and liability claims down to the responsible suppliers where possible, negative public opinion and tarnished brand implications generally stop with the OEM. Key measures around supplier risk should be developed as more suppliers struggle financially and the global network of suppliers shifts to China, South Korea, India, Eastern Europe and Russia. These actions should not only be measured based on cost savings but should have an offsetting set of risk management measures as part of a balanced scorecard.

**Regulatory compliance**
Institution of CAFE, the Transportation Recall Enhancement, Accountability and Documentation (TREAD) Act and the Sarbanes-Oxley Act demonstrates a trend toward more reporting transparency in corporations today. Some companies are responding to these regulations not through simple compliance, but by leveraging them as opportunities to create value adding information systems. For example, some companies are going beyond simple TREAD reporting for compliance to develop early warning systems to avoid warranty costs, mitigate risk and more proactively design cost out of the vehicles as early in the lifecycle as possible. “Value-added” reporting around regulatory compliance issues is recommended.

**Learning and growth perspective measures**

**Intellectual capital**
Although companies are focused on the "legacy cost" implications of retirement and pension payments for their aging workers, of equal importance is the "brain drain" that will occur as these lifetime skilled workers, both blue-collar and white-collar, begin to exit the workforce. The demographics of the baby boomers once again will change the nature of business as this aging workforce begins to retire. Companies must begin to measure the "cumulative years of experience" in each of their key business processes and find ways to measure the impact of the loss of their most experienced resources due to retirement. They also need to find ways to leverage the vast knowledge base before it walks out the door.

**Innovation**
In the automotive industry, delivering a quality product at a competitive price is the price of entry into the market. Even in the best case, this is just a break-even business strategy. The only thing that customers are consistently willing to pay a premium for is innovation. Either process
innovation or product innovation is required to break away from the pack and earn a profit in the automotive industry today. Companies that can bring new products and new technology to market faster, cheaper and at higher quality through unique processes are the consistent winners in the automotive industry. Measuring the speed at which innovation can be translated from ideas into profit is the key to identifying real value creation in the automotive industry.

The balanced scorecard of the future

The automotive companies that will be successful in the future will be those that are focused on their core competencies; responsive to customers, markets and the competition; flexible to rapidly adapt to change; and variable in their cost structure. Therefore, the future balanced scorecard will need to keep pace with an enterprise whose business processes are integrated end-to-end across the company and with key partners, suppliers and customers. The future balanced scorecard will be a critical tool for companies to respond with flexibility and speed to virtually any customer demand, market opportunity or external threat.

The balanced scorecard of the future will not stop at the four walls of the company, but will extend deep into the supply chain and reach out to end consumers. It will not just be another set of numbers, but will be integrated with the core financial and business reporting systems of a company, serving as the "single point of truth" for performance management information.

The balanced scorecard of the future will not be a backward looking tool but a forward-looking tool guided by a company’s vision, strategy and foresight. It will not be limited to the desks of top executives but will be available for all decision-makers to drive the business strategy through day-to-day decision-making by line managers.

The balanced scorecard of the future will not be a periodic slide show report, but a dynamic dashboard of realtime data based on "sense and respond" systems that update in realtime based on critical business events. The balanced scorecard of the future will have drill-down capabilities to enable exploration, analysis and rapid business decisions. It will not be a one-time exercise, but will serve as a living vision of the company’s performance against its strategy.

Conclusion – The balanced scorecard of the future

The balanced scorecard is still a valuable framework for the underlying design of a performance management system. Scorecard design challenges continue to demonstrate that business performance cannot be reduced to a simple formula. New measures and new ideas are essential to adapt to a rapidly changing business environment. Recent advances have ushered in a new era where technology can be leveraged to evolve the balanced scorecard into an enterprise performance management system where the measures are more dynamic, the data is more timely, the information is more relevant and the audience is broader.

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