

Driving Innovation

Five opportunities for the Automotive Industry





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“Without collaboration, innovation would be impossible”

– Automotive CEO study participant

Introduction

Product innovation has been a hallmark of the automotive industry since the first car was built.

While Karl Benz is widely credited with the invention of the first automobile in 1885, it was innovations in the internal combustion engine dating back as far as 1806 that ultimately led to engine-powered vehicles.¹

Yet, other forms of innovation have had important roles in the industry. The assembly line was one of the first significant examples of process innovation in the industry. And, vertical integration is yet another example of how innovation in a company's business model drove significant enterprise value in the past.

Today, the automotive industry is under tremendous stress and never seen before shifts are occurring. As a result, innovation continues to be on the minds of global CEOs as a way to stay ahead of the curve or simply to survive.

In 2006, IBM conducted a global CEO study that focused on this very important topic. Over 765 CEOs and top business leaders across various industries participated in the study.² The results were quite fascinating at the aggregate level. Our study found that 90 percent of executives expect moderate to substantial change in their businesses over the next two years.

DRIVING INNOVATION

Subsequently, we then derived automotive-specific implications from this data by augmenting it with IBM's own automotive industry knowledge and input from our automotive professionals. Our overall message to the automotive industry is quite simple:

To drive innovation....

Automotive companies have to extend their thinking about innovation beyond products and services to business model innovation....

.... collaborate extensively with external partners (suppliers, customers, nonindustry players, dealers) and....

.... CEOs must take the lead to operationalize innovation by establishing the right set of processes, culture, structures and financing models within their companies.

By embracing these messages, companies can position themselves for substantially improved business performance.

Virtually every automotive company today is communicating innovation messages in the media and to analysts:

“Innovation is our mission.”

– William Clay Ford, Jr., Chairman & CEO, Ford Motor Company³

“Innovation drives our company and is the key to the worldwide success of DaimlerChrysler.”

– DaimlerChrysler Web site⁴

“Toyota is turning challenges into business opportunities by accelerating the pace of its innovation to achieve new growth.”

– Hiroshi Okuda, Chairman, Toyota 2004 annual report, Chairman's Message⁵

Key implications from the CEO study for automotive companies

IBM has identified five key opportunities for automotive companies. Focusing on these objectives can help companies become better innovators relative to their peers.

1. Automotive companies need to transform engineering research and development (ER&D) to be more effective in product creation, design and development

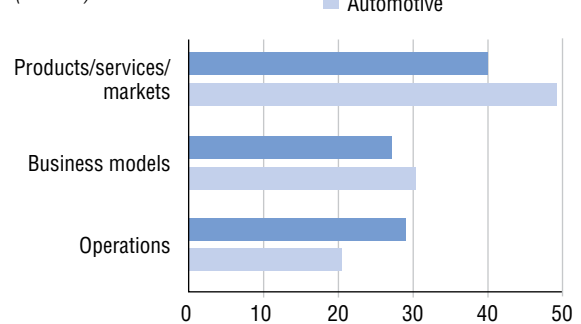
Figure 1 indicates product and services innovation is the top priority for the automotive industry.

However, the engine within a company – the ER&D organization that envisions, creates, designs and develops products – must be fundamentally changed. Product creation is shifting from internally focused, closed door, invent-within to external collaboration, open platforms and joint development.

One example of a forward-looking company is Procter & Gamble, which has moved from R&D to “connect and develop” (C&D). Its transformation results are worth noting: R&D investment dropped from 4.8 percent of revenue in 2000 to 3.4 percent in 2005,

Figure 1. Business leaders' innovation priorities for next two years.

(Percent)



Source: The Global CEO Study 2006.

while share price and profits doubled. In addition, the company has launched 100 new products in the last two years.⁶

Based on IBM analysis of automotive ER&D expenditures, heavy ER&D spending does not necessarily translate into great products, services or higher customer satisfaction. Automotive companies must institute best practices throughout the organization, including:

- Early identification of market shifts and consumer insights
- Product visioning and portfolio management
- Scientific management of lifecycle innovation (e.g., when to refresh, renew, end product)
- Operating models that deliver differentiating products and services
- Relevant metrics to improve service performance

2. Automotive companies should pursue more business model innovation to help increase EBIT

Business model innovators adapt their businesses to changing market dynamics – constantly innovating to drive EBIT growth. The alternative – to succumb to cost competition – is not an alternative for these innovators.

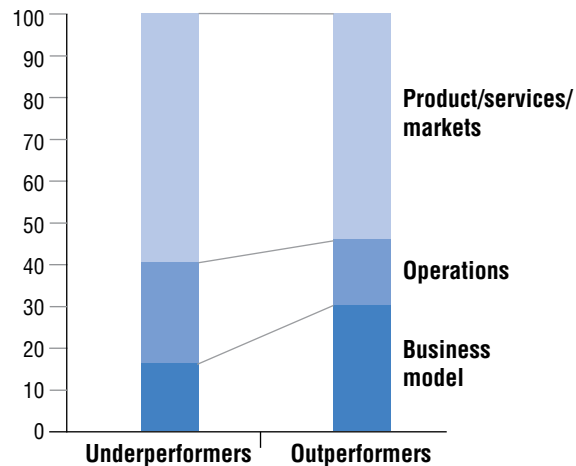
The study found that business model innovation adopters had higher operating margin growth than those pursuing other types of innovation, and that strong performers – companies that had grown operating margins faster than their competitive peers over the last five years – put more emphasis on business model innovation (see Figure 2).

As automotive companies face crises, many are beginning to look at new business models, such as alliances, new manufacturing models, pay-as-you-go services and strategic outsourcing of noncore functions.

But other industries are much more aggressively pursuing business model innovations. Samsung, for example, consolidated operations, partnered with specialty providers and outsourced noncore functions

Figure 2. Strong performers more likely to emphasize business model innovation.

(Percent of respondents)



Note: Based on operating margin growth over five years as compared to competitive peers.

Source: The Global CEO Study 2006.

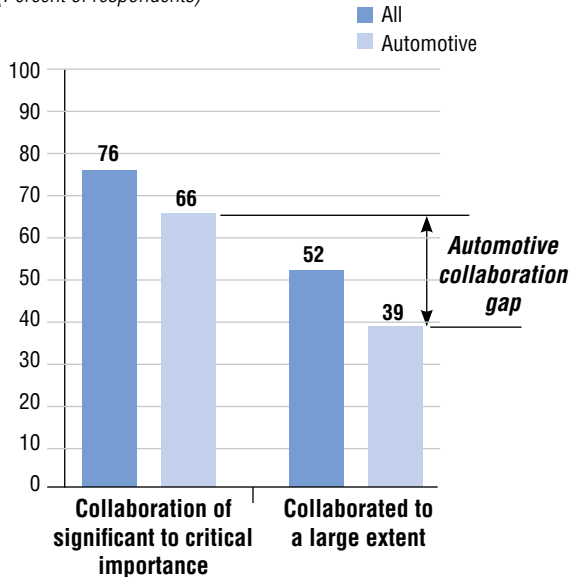
as part of its transformation from a low-cost OEM supplier to a manufacturer of premium branded products. From 2001 to 2004, its revenue increased 15 percent, net income increased 150 percent and shareholder value increased 15 percent.⁷

3. Automotive companies can leverage more external partnerships and collaboration to drive innovation

Executives across all industries, including automotive, look to “outsiders” for new ideas. One leader that was interviewed indicated that “it would be counter productive to do everything yourself” while another felt “we need to create ways to leverage the capabilities of different players in the ecosystem.”

However, companies in general and automotive companies specifically have difficulty implementing external collaboration. While 66 percent of automotive respondents felt collaboration was of significant to critical importance, only 39 percent felt they collaborate to a large extent (see Figure 3).

Figure 3. Importance of collaboration to innovation.
(Percent of respondents)



Source: The Global CEO Study 2006.

We see several areas within the automotive business where external collaboration will be even more important for future innovation. OEM-to-supplier collaboration is still very important and can be improved. However, our experience suggests that two other areas provide significant opportunities for future innovation and growth: OEM-to-dealer collaboration and collaboration among noncompeting companies.

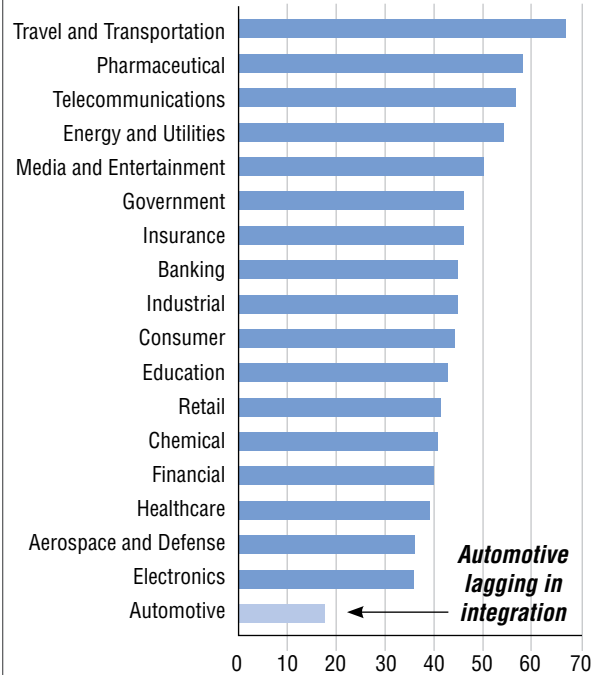
The integration of electronics and automobiles provides unprecedented opportunities for noncompeting companies to partner together to deliver even more innovative solutions than each could do on its own. For example, IBM and Valeo have partnered on a joint development center for embedded software in vehicles.⁸

4. Automotive companies can better integrate business and technology to stimulate innovation

Technology adoption is occurring at a rapid pace at multiple levels in the automotive industry. This adoption can be seen in such areas as virtual simulation testing of product designs, the continued automation of manufacturing facilities and, clearly, in-vehicle technologies.

However, when surveyed executives rated the level of business and technology integration in their own businesses, the automotive industry ranked as least integrated, compared to all other industries (see Figure 4).

Figure 4. Level of business and technology integration.
(Percent respondents with significant to a large rating)



Source: The Global CEO Study 2006.

While this result may be partially explained by the degree of industry complexity – such as the number of players involved, product complexity and global footprint – it suggests that those automotive companies that can increase integration have an opportunity to differentiate themselves.

5. CEOs have to take the lead to operationalize innovation and overcome innovation inhibitors

In the study, a third of all CEOs and business leaders indicated that it is their responsibility to define the innovation agenda. This includes defining and managing partnerships with external players, and establishing a climate and culture conducive to innovation.

So where should automotive CEOs begin to focus their energies to foster innovation? One place to start is addressing obstacles to innovation. Automotive business leaders identified the top three innovation obstacles as: limited funding for investment, process immaturity and an unsupportive culture and climate.

However, addressing current obstacles will not necessarily lead to a long-term, sustainable innovation agenda. CEOs must also perform an overall assessment against several key criteria to determine their company's innovation maturity level and to define a future roadmap. Only then can CEOs begin to address key questions, such as:

- Do we have the right innovation agenda to differentiate and compete?
- Where do we need to innovate in our business model?
- Is top management driving innovation?
- In which areas should we add external partners to accelerate innovation?
- Where are our shortfalls in integrating business and technology to enable innovation?

The time to innovate is now

The 100+ year history of the automotive industry is rooted in product innovation. Today product innovation continues to be at the core of every automotive business. But, with the increased pace of change across virtually all aspects of the industry – customers, markets, products, technology, workforce, etc. – companies must explore and embrace additional innovation strategies to compete and succeed.

Further information

To find out more about this study or to speak with the Automotive Leader from your region, please send an e-mail to GlobalCEOStudy@us.ibm.com.

To register to receive a copy of the complete IBM Global CEO Study 2006, please visit:

ibm.com/bcs/ceostudy

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The IBM Institute for Business Value, part of IBM Global Business Services, develops fact-based strategic insights for senior business executives around critical industry-specific and cross-industry issues.

References

- ¹ From Wikipedia, the free encyclopedia, <http://en.wikipedia.org/wiki/Automobile>
- ² "Expanding the Innovation Horizon: The Global CEO Study 2006." IBM Global Business Services. March 2006. <http://www.ibm.com/bcs/ceostudy>
- ³ Ford Motor Company Web site. <http://www.ford.com/en/innovation/default.htm>
- ⁴ DaimlerChrysler AG Web site. <http://www.daimlerchrysler.com/dccom/0-5-7165-1-143238-1-0-0-0-0-0-8-7165-0-0-0-0-0-0-0-0.html>
- ⁵ Toyota Motor Company Web site. <http://www.toyota.co.jp/en/ir/library/annual/2004/chairman/index.html>
- ⁶ Hudson, Larry and Nabil Sakkab. "Connect and Develop: Inside Procter & Gamble's New Model for Innovation." *Harvard Business Review*, March 2006.
- ⁷ Samsung 2004 annual report.
- ⁸ "Valeo and IBM to Collaborate for Automotive Software Development." IBM press release, May 4, 2005.

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