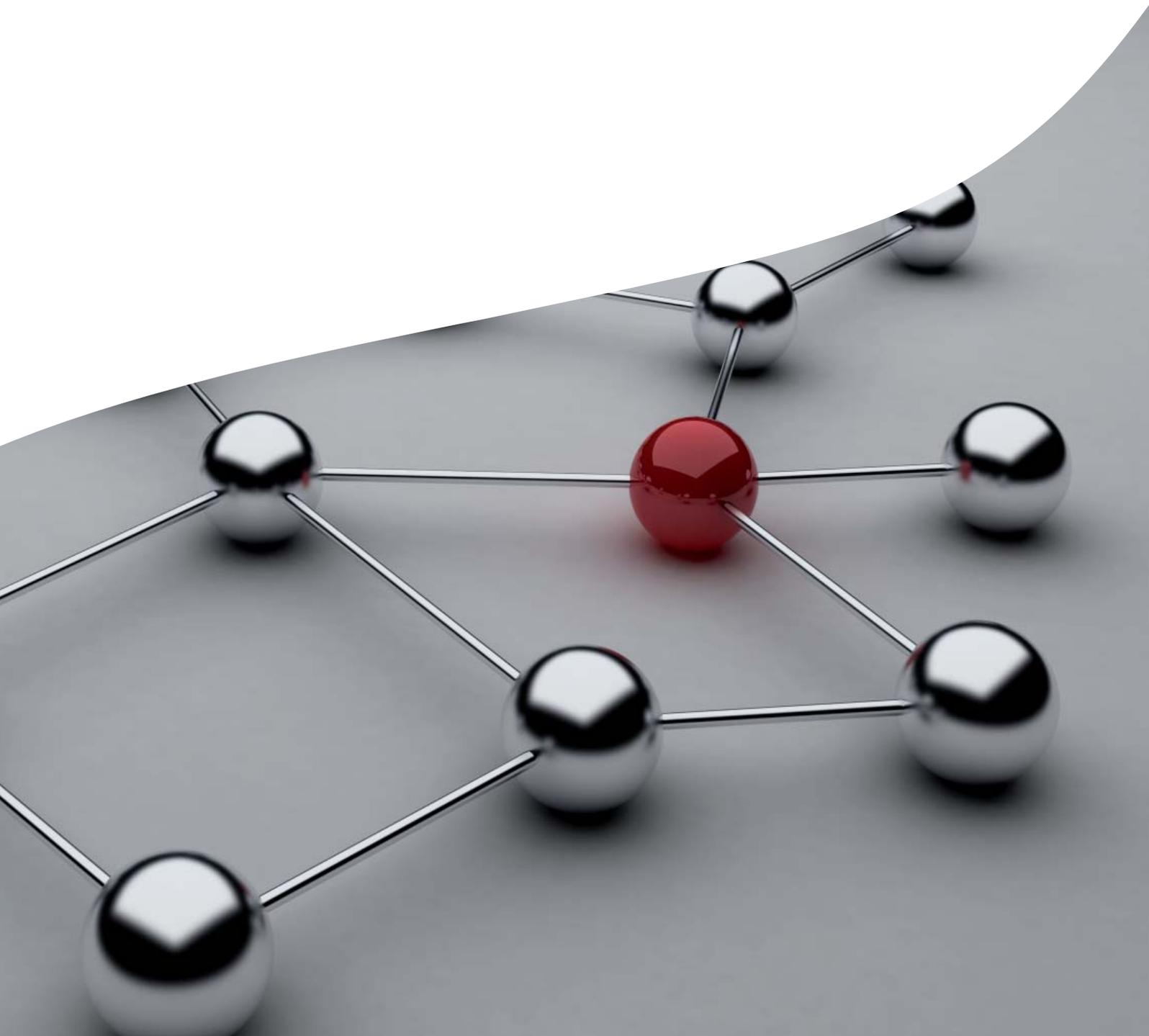


Collaborating for Innovation

**Capgemini's 2010 Global Survey –
How to Make a Leap by Applying Collaboration
in the Innovation Process**



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Introduction

Innovation has become an important differentiator in achieving both top-line growth and cost savings, but this has often been restricted by companies' business models and culture. Most companies have contained innovation within their direct circle of influence (apart from some well-known examples such as Procter & Gamble and Philips). But as competition intensifies and existing models of innovation are not enough of a differentiator, the way to build market share and create sustainable top-line growth in the future will be through a new, alternative approach – collaborating for innovation.

Our definition of this term is “making cooperation across organizational boundaries inside or outside a company’s four walls an integral part of the innovation strategy.” This approach taps into the wider opportunities of working with value-chain parties including internal partners, suppliers, customers and even specific entities outside the value chain.

Collaboration can take many forms: open innovation, co-creation with clients and suppliers, crowd sourcing, as well as traditional partnerships and alliances. In addition, there is a great opportunity for various internal business functions to cooperate within the innovation process – particularly the primary functions of R&D, Marketing, Sales and Operations.

Capgemini’s first “Collaborating for Innovation” study, published in 2008, found that collaboration was increasingly viewed as a critical enabler for successful innovation. However, significant challenges existed in the form of resources, organization, IT and performance metrics. Our second biannual report takes this position as its starting point to assess the progress that manufacturing

companies have made in further embracing and leveraging the culture, technologies and techniques of collaborative innovation in today’s economically volatile environment.

Our 2010 “Collaborating for Innovation” study provides further insight into the current practices of a range of manufacturing industries, together with recommendations for moving towards sustainable top-line growth by adopting a “collaborating for innovation” approach.

Study Objectives

The research was designed to elicit the perceptions and insights of a range of manufacturing companies on collaborating for innovation and therefore to develop a comparative view with our 2008 findings. Companies appeared in 2008 to be adjusting their corporate strategy, shifting away from cost reduction to top-line growth and accommodating a growth-focused innovation strategy. But how did they measure innovation performance? What was the impact on R&D? How successful was collaboration with suppliers and customers? From these questions, we identified the key trends and challenges, and so built a clear picture of the way forward for innovation within the manufacturing industries.

In this edition of “Collaborating for Innovation,” the goal is to draw executive attention to current strengths and improvement opportunities relating to the process of innovation, focused on four overarching aspects of the innovative company:

- The consequences of changing corporate/strategic imperatives upon innovation as a lever for growth.
- The changing structure and operation of the R&D function and its impact on corporate success.

- The embedding of innovation as a culture underpinning an organization beyond the R&D function and across the value chain, including customers and suppliers.
- The drivers and obstacles for integrating these “external” parties in various stages of the innovation process.

In the interest of making this report easy to assimilate, we have presented key findings for each section. We have avoided a lengthy appendix of the data, but we are happy to discuss the aggregated results in more detail with participants and interested parties on request.

Our Thanks to the Industry

Completing an in-depth survey such as this is a significant investment, and we are extremely appreciative of all our respondents, who made time to carefully consider their answers. To everyone who participated, many thanks.

We hope that we have been able to repay this investment by providing an interesting study that offers insight into the way companies approach the task of successfully leveraging the creative energies of their employees and those of their partners.

We also trust that the recommendations and conclusions can act as constructive signposts for further improvements, or a prompt to review existing innovation activities.

Executive Summary

Innovation is generally described as a way of doing or creating something new or in a new way; incremental or radical changes in thinking, products, processes or organizations, resulting in benefits or increased value to a range of stakeholders most notably shareholders and customers.

For many companies, the ability to integrate innovation into their organization beyond the traditional confines of the R&D department is a key lever for increasing productivity and profitable growth, and thereby gaining competitive advantage. For sectors where margins are traditionally tight, innovation has to

be at the heart of numerous strategic initiatives to develop competitive and first-mover advantage – breaking new ground in product and service offerings, forging cross-boundary partnerships, sometimes even with former competitors, and bringing in new capabilities through mergers, acquisitions and joint ventures.

This has been the case for the broad spectrum of manufacturing, which has been hit harder than many other sectors in the past two years and which is significantly impacted by both the threats and opportunities of growing globalization.

Key Findings

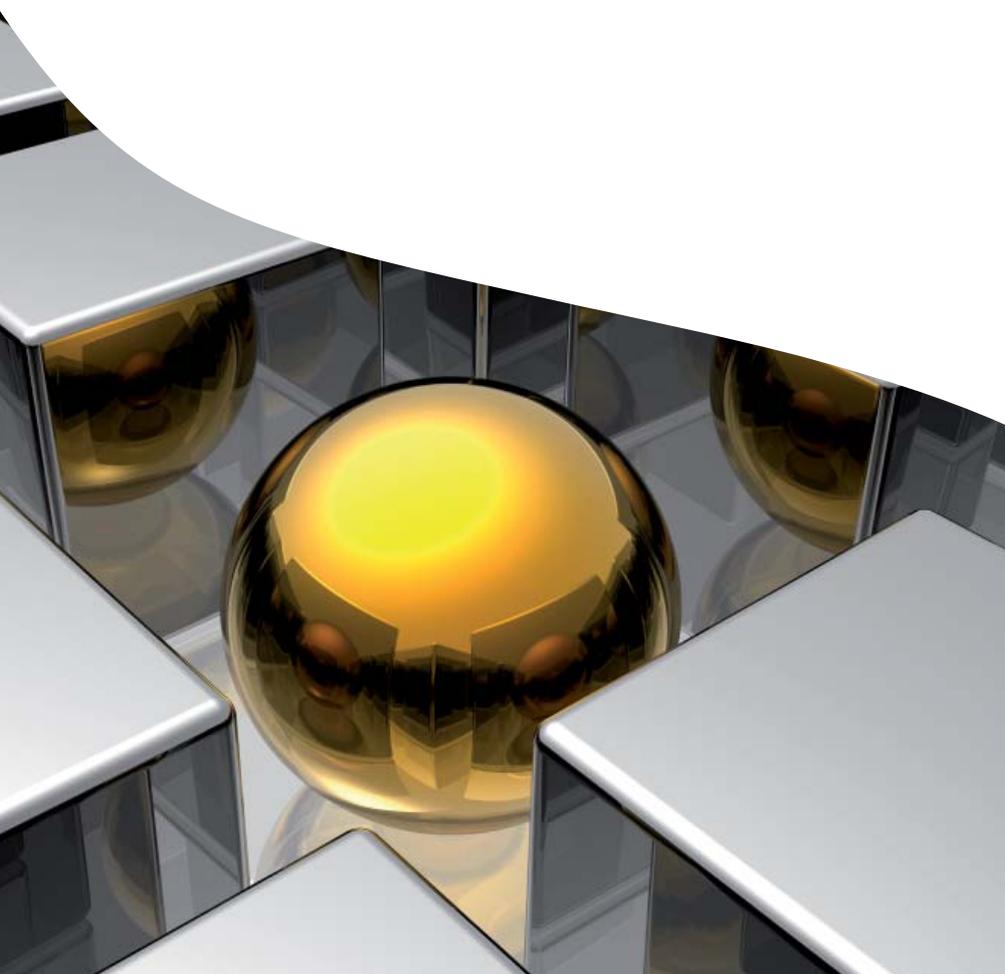
Our “Collaborating for Innovation” research indicates that manufacturing companies have improved in their ability and confidence to develop, produce, promote and measure innovation from strategy and then throughout the value chain. This appears to be due to more executive-level attention and support, greater application of performance measurement, a wide range of technology-based collaboration initiatives across the wider value chain involving both suppliers and customers, and the spread of the innovation culture within an organization.

However, this improvement is not without challenges. Capitalizing on customer insights to create profitable new products and services remains difficult for many companies as well as converting IT investments in business benefits realized on a broad basis across the enterprise.

Several key themes have emerged from our research.

Innovation is increasingly integrated into corporate strategy.

Strategic alignment appears to be delivering dividends, as innovation is now a more integral part of our respondents’ corporate growth strategy and has become more embedded in functions beyond the heartland of the R&D division, such as Marketing and Sales, and Operations. This, together with greater board member support and growing external pressures from globalization, has led companies to look at innovation as an important lever to improve business performance, in addition to the more traditional role of bringing new products to market. An integrated



Study Methodology and Respondent Profile

The “Collaborating for Innovation” study was carried out by a professional market research agency, using a web-based survey, comprising 41 questions focused on Corporate Strategy, Innovation Performance, and Collaboration with the R&D function, Customers and Suppliers.

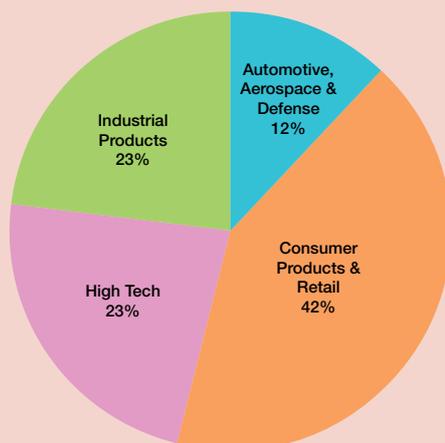
Invitations to participate in this survey were sent to board-level and senior executives, as well as middle managers closely involved with, or responsible for, Innovation, Product Development, Manufacturing, Sales, Marketing and Customer Service. We approached a range of potential participants including, but not exclusively, existing Capgemini clients around the world.

We collected responses from 189 participants from companies based in 15 countries, with the respondent distribution of 38% from companies headquartered in North America, 39% from Europe, 11% China and North East Asia, 7% Indian and South East Asia, and 5% from Australasia Central/South America and Africa/Middle East.

Survey participants were drawn from the following major sectors:

- Consumer Products and Retail (42%)
- Industrial Products (23%)
- High Tech (including Telecom, Medical Devices and Life Sciences Manufacturing) (23%)
- Automotive, Aerospace and Defense (12%)

Industry Representation among Survey Respondents



Source: Capgemini

The revenue (as reported in the last fiscal year) of the companies surveyed ranged from under US\$1 billion (37%) to more than US\$25 billion (14%). This diversity is also reflected in the number of people employed globally by the companies surveyed, from fewer than 1,000 (23%) to more than 25,000 (20%). Our largest group of respondents came from R&D departments, followed by General Management and Marketing, Sales and Services (MSS).

innovation strategy needs to address the explicit choices, regarding whom to collaborate with, when and how.

The use of new technologies such as Web 2.0 techniques, collaborative platforms, social networks and online meetings has revolutionized many aspects of not just individual but also commercial interaction. Some manufacturing companies are leading the way in leveraging these new technologies to drive innovation in new channels and new formats. R&D-driven innovation will continue to use existing and emerging IT technologies to accelerate the innovation process and improve innovation performance in open-innovation environments. These new technologies need to be implemented and introduced in a way that maximizes immediate acceptance by users rather than increasing administrative tasks and limiting creativity.

An integrated innovation performance measurement system is essential.

Companies appear to be using a wide mix of performance measurements to assess innovation across and within industries, and have improved their processes for measuring the profitability of their innovation efforts. They also seem to be more focused on clearly demonstrating a satisfactory financial return. We believe that companies need to work more on developing a solid range of performance indicators, integrating the relevant factors impacting top-line growth (such as customer satisfaction, product performance, sales, etc.). This should be done quickly to demonstrate to stakeholders the benefits of collaborative innovation.

R&D collaboration is key for top-line growth in global markets.

Following the end of the recession and entering the growth phase, we still expect a number of shakeouts of companies with large R&D units and increased merger and acquisition activity (for example, consolidation in the crane industry). This may precipitate further alignment of R&D unit operations, including process and tool harmonization and shared ways of working. Depending on the R&D strategy adopted, we anticipate a number of different structural and operations scenarios, such as specialist outsourcing, co-creation, location centralization and R&D effectiveness programs. The prevailing innovation model is a flexible blend of centralized in-house facilities and the completion of needed expertise or capacity with external partners. Adopted forms of internal and external collaboration will be key to better support localized products while leveraging synergies and standards for cost effectiveness. To shift from cost reduction during the recession towards new growth initiatives, companies will actively employ collaboration concepts and new innovation business models.

Customer collaboration is more than collecting customer insights – it's about capitalizing on them.

All companies are moving towards some form of customer collaboration; however, within many companies there is a lack of clarity regarding when or where exactly the boundaries are for involving customers in the innovation process – a key area of weakness. Lack of insights about consumer needs and appropriately interpreted customer feedback appears to provide significant challenges to manufacturing companies. Gathering feedback and data has little commercial value if there are insufficient processes in place to capitalize on these insights.

Many companies would like to involve customers more effectively in their product development process, but they face a number of hurdles. Some are practical, such as the length of development cycles or the complexity of products. Others are more a matter of manufacturers' perceptions. Many, for example, consider their products to be too commoditized or too complex, or that they are "too far down" the value chain for customer interaction. Our work with clients shows that customer involvement is both appropriate and feasible for just about any business. Capgemini believes the current mindset needs to change.

Supplier collaboration needs to shift from cost reduction to shared value creation.

Companies are undertaking a number of supplier collaboration initiatives, suggesting that suppliers are increasingly being seen as important partners in driving innovation, although the primary importance of being innovative in reducing costs persists. Engineering, Logistics, Production Processes, and Sales and Marketing were the leading areas for efficient collaboration. Module and Final Assembly, Sourcing and Procurement, and Service and Maintenance were less well regarded and show room for improvement. To cope with the technological and competitive challenges, manufacturing companies must increase active involvement of their suppliers in the value creation part of the innovation process instead of just relying on delivery of defined components. As this happens, suppliers' roles shift towards risk-sharing models, which require new collaborative processes and tools.

Conclusion

Even in extremely difficult economic markets, innovation as a way to differentiate and achieve market success continues to grow in importance and is being strongly championed by many senior industry executives. As global economies recover and customer spending starts to rise again, Capgemini expects that the scope and set-up of innovation efforts will change significantly. We will see a shift from offering standalone products to providing customer value via radical new service concepts and business models. This will involve a move away from "isolated" R&D-focused innovation to collaborative value creation, which has the ability to meet (or exceed) customer expectations.

Corporate Strategy

Overview

In our 2008 “Collaborating for Innovation” study, Capgemini concluded that companies perceived to be innovators in their markets would use the economic downturn as an opportunity to fundamentally transform their businesses and establish top-line growth. An essential element of this recovery position was a proactive and prioritized approach to innovation.

These transformation plans started with sharpening corporate strategy to drive the supporting innovation strategy. The plans for the different business functions like Marketing and Sales, Operations and R&D also needed to be aligned. So in developing this 2010 edition, our starting point was to look at how successful this approach had been.

In this section, we were keen to understand how companies had adapted their corporate strategy and positioned innovation to be ready for the upturn:

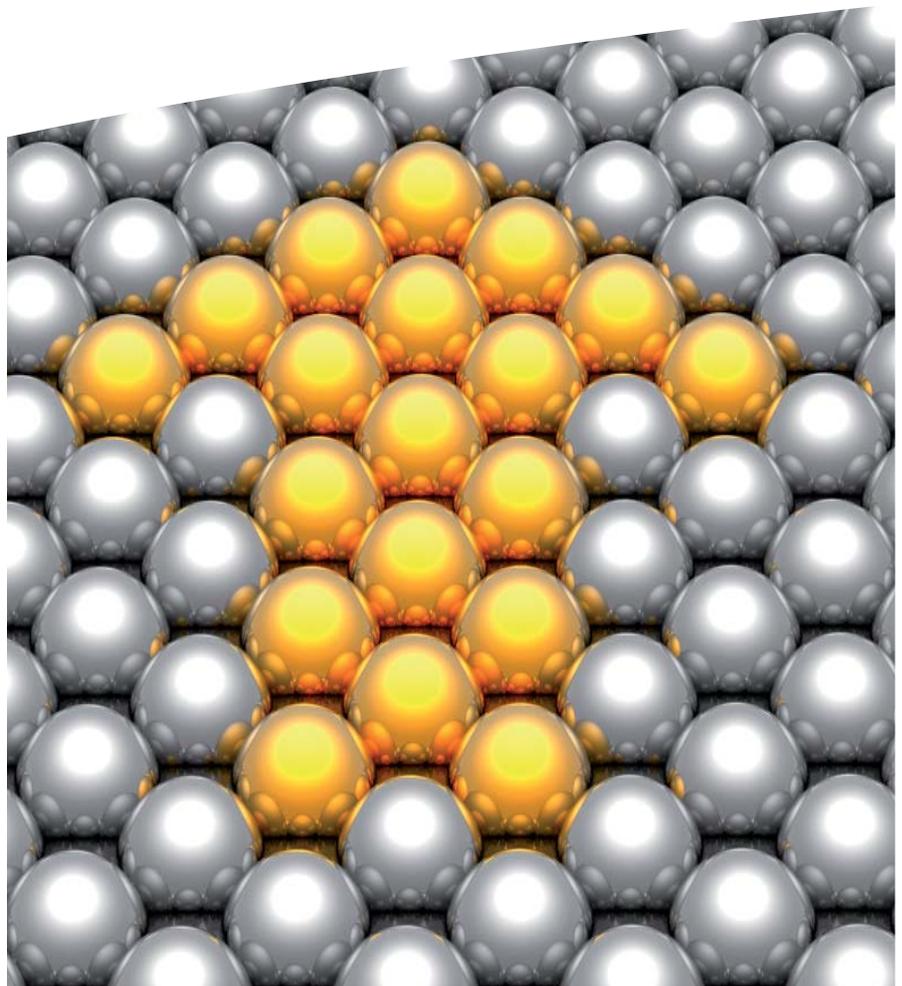
- How had companies embedded their innovation strategy in the board agenda to support growth?
- What was the level of support exhibited by the board and senior executives?
- What impact did this have for key business areas such as R&D, Marketing and Sales, and Operations?

Key Findings

Innovation appears to have become an integral part of our respondents’ corporate growth strategy and increasingly is embedded in other functions beyond the R&D division, representing an evolving approach. This, together with increasing C-level involvement and growing external pressure from globalization, has led companies to look at innovation as an important lever to improve business performance, in addition to the more traditional role of bringing new products to market.

“This crisis made it very clear to us that top-line growth will never be sustainable if we don’t make innovation a dominant part of our corporate strategy.”

Industrial Products, Executive



Alignment of a Strategic Approach to Innovation with Growth Strategies

Innovation is perceived as the strongest driver to support the corporate strategy. The majority of companies, across all industry sectors, are making the corporate connection between innovation and growth.

The Consumer Products and Retail (CPR) sector led the list (>75%). In the Automotive, Aerospace and Defense, and High Tech sectors, 47% to 50% of companies are missing such a close alignment.

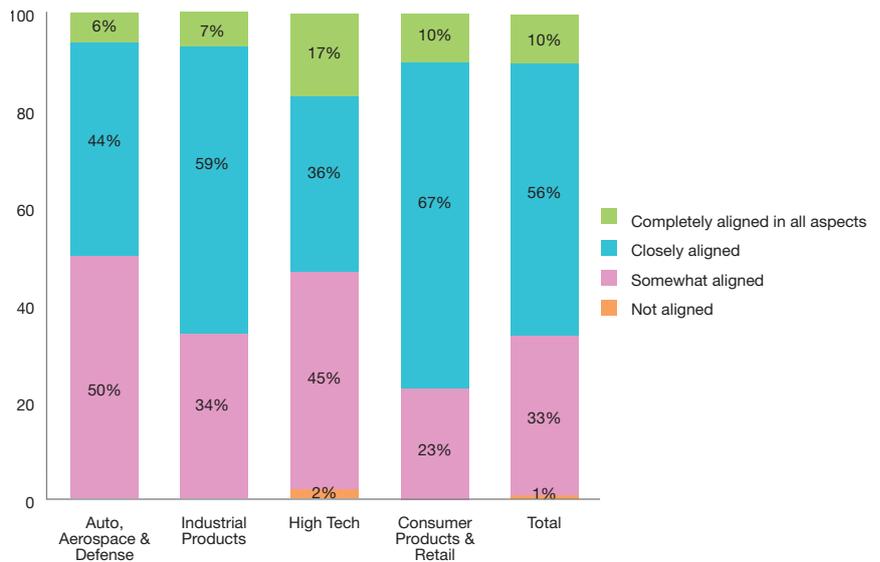
We recommend strengthening this approach with a structured organizational set-up. Companies that have established a Chief Innovation Officer role and/or an Innovation Center at the corporate level show better alignment of their strategic approach to innovation with their growth strategy.

Effectiveness of C-Level or Executive-Level Sponsorship and Support for Innovation Projects

Most of the interviewed companies show a strong connection between the CXO or executive level and innovation projects. One reason for increased executive support could be that innovation management is becoming a fundamental component of executive training programs, from in-house to external executive training and MBA courses.

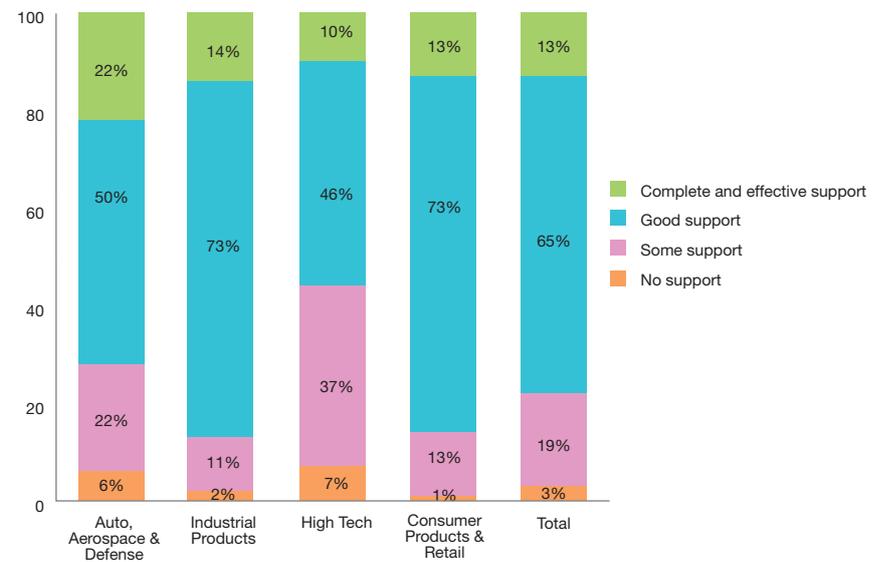
But 28% of Automotive, Aerospace and Defense and 44% of High Tech companies lack this management support. These companies have uncovered potential for better support of innovation.

Alignment of Strategic Approach to Innovation with Growth Strategies



Source: Capgemini

Effectiveness of C-Level or Executive-Level Sponsorship and Support for Innovation Projects



Source: Capgemini

The Primary Functional Driver of Innovation

In most companies R&D as well as Marketing and Sales are the primary drivers for innovation. In the Automotive, Aerospace and Defense sector, however, Marketing needs to do a better job of bringing customer feedback into the innovation process.

Compared with our 2008 survey, the role of Marketing and Sales as the primary driver for innovation has been strengthened, which reflects the tendency to more market-driven innovation instead of a technology push.

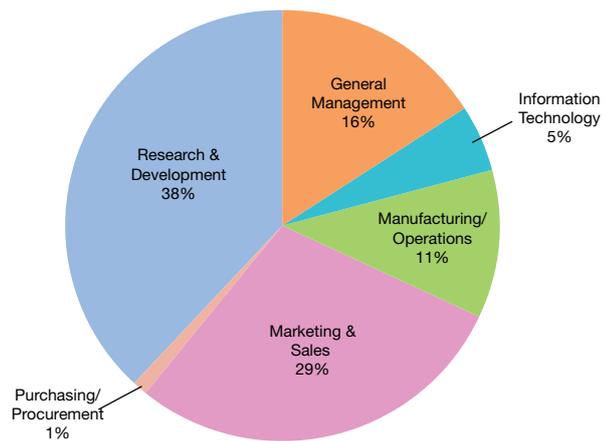
The Impact of Globalization on Innovation Efforts

Not surprisingly given the multinational structure of many of our respondent companies, globalization is a dominant factor in the innovation efforts of organizations across the industry sectors. About three-quarters rate the impact of globalization as very important or important. The trend from 2008 is upwards, particularly in the CPR and Industrial Products sectors.

The Use of New Technologies

CPR and High Tech companies led the way in terms of leveraging new technologies like Web 2.0 social networks and virtual worlds like Second Life to drive innovation and validate ideas, scoring an average usage level of 33% and 28%, respectively. Many CPR companies use online consumer forums to capture product feedback. This could be optimized by expanding the use of virtual worlds to gain a better understanding of articulated and unarticulated customer needs.

Which Functional Area Is the Primary Driver of Innovation?



Source: Capgemini

Automotive, Aerospace and Defense remains a laggard, with an average 13% usage level. The complexity of these products and the extended value chain are likely to have a bearing on the lower use of new technologies.

Capgemini expects that manufacturing clients across all sectors will further emphasize the use of collaborative technologies within the innovation process to increase customer intimacy, accelerate the innovation process and improve the fulfillment of customer requirements across global markets. In addition, R&D departments will use new technologies to apply agile development methods and improve both effectiveness and efficiency in distributed development environments.

“The main reason for our extensive top-line growth is that senior executives from R&D, Marketing and Operations are all driving our innovation together. They own innovation.”

Consumer Products, Executive

Innovation Performance

“I have seen so many commercially acceptable business cases for innovation put forward and they all just showed what we wanted to see. After we had taken the decision to ‘go,’ we never referred to or reviewed the original business case again!”

Industrial Products, Chief Financial Officer

Overview

The ability to measure innovation performance is a key enabler of top-line growth. The resulting metrics support essential decision-making at all levels of innovation activity. These decisions range from specific collaborative innovation projects, the supporting project business model and innovation portfolio analysis, through to the translation of corporate strategy into an innovation strategy.

The objectives of this section were to understand the strengths and results of companies' innovation efforts, and how the outcomes are measured. We expected to see a range of measurements that were:

- Integrating the performance of a number of business functions.
- Balancing short- and medium-term performance.
- Reflecting the benefits of different stakeholders (shareholders, employees, customers, suppliers, etc.).

Key Findings

Overall, we see a mix of performance measurements for innovation across and within sectors. To demonstrate the benefits of collaborative innovation, companies need to establish a consistent range of performance indicators, integrating the relevant factors impacting top-line growth (such as customer satisfaction, product performance, sales, etc.).

In general, there is improvement, compared with our 2008 study, not only in the development of successful products/services that meet customer needs and generate profits, but also in the ability to measure the effectiveness of the innovation efforts – metrics to track innovation end to end. This would point to a reasonably high level of confidence in collaborative innovation, a significant achievement in recessionary times.

Product failure in the market is predominantly attributed to insufficient customer data and analysis, and poor reading of market dynamics – particularly misidentifying the best time to launch in competitive and price-conscious markets. For the CPR sector, this ability is their lifeblood. A more reliable approach to development and launch timing is required and needs to be accompanied by greater customer intimacy; collaborative technologies and social communities can serve as important enablers.

However, as internal efficiency rates rise through the use of new tools and techniques (such as lean product development), companies will need to be even more inventive to maintain this level of productivity and profitability. Leveraging appropriate performance metrics and analytics will help to improve both effectiveness and efficiency.



Primary Measure of Innovation Performance Effectiveness

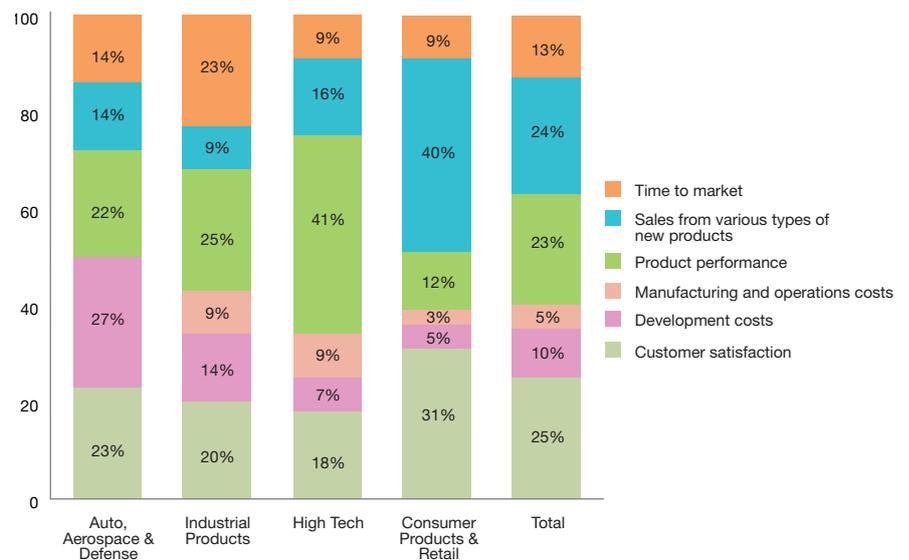
About one-quarter of respondents rated customer satisfaction, product performance and sales from various types of new products as the key benchmarks to measure innovation performance – factors that impact primarily the top line. In the Automotive, Aerospace and Defense sector, an additional key performance indicator was development cost, a reflection of the industry’s focus on the earlier stages of the innovation funnel, with the high costs of development centers and high-specification engineering.

Time to market is still a challenge for the Industrial Products sector, reflecting the competitive nature of the consumer markets as the ultimate driver. Industrial Products companies have had to become more agile in meeting fast-changing client requirements and shorter product lifecycles. Preferred-supplier status is more readily accorded to companies demonstrating faster innovation cycles and rapid product replication. In that case, innovation performance measures should focus on accelerating time to market – for example with special events for product launches.

Measurement of Profitability

Companies appear to have improved their processes for measuring the profitability of their innovation effort, or are more focused on clearly demonstrating a satisfactory financial return. In fact, about 90% of respondents rated their ability to measure the profitability of new products or services as “good,” “very good” or “excellent,” up from the 2008 level of 81%. This measurement is more mature in CPR where complex and detailed product performance

Primary Measure of Innovation Performance Effectiveness



Source: Capgemini

data has been in use by Marketing and Sales for decades, determining precision pricing, placement, promotion and production.

Companies with a strong drive for innovation, as well as a focus on effective and efficient new product development and introduction, should introduce intelligent measures to better track their innovation and its outcome.

External Impetus to the Innovation Funnel

Across industries, approximately 50% of the respondents indicate that they still fund and execute innovation activities purely internally. The others are actively looking for external input by outsourcing parts of projects or complete projects, by purchasing innovation services or by working with external partners. Between 32% (High Tech) and 65% (Automotive, Aerospace and Defense) participate actively in innovation clusters and

approximately 50% across industry segments leverage external experts or innovation brokers to fuel the innovation process.

To stay competitive, companies should more actively leverage external sources as input for the innovation process in terms of both funding and expertise. We recommend identifying specific projects in the innovation portfolio for outsourcing – for example, where there is a lack of internal resources or internal knowledge. Clear conditions have to be defined to maintain internally as much intellectual property as possible. These kinds of projects should be evaluated in terms of benefits, risk and potential before being outsourced. In addition, companies should develop and maintain an active network of experts to be leveraged for innovation and promotion of products and technologies.

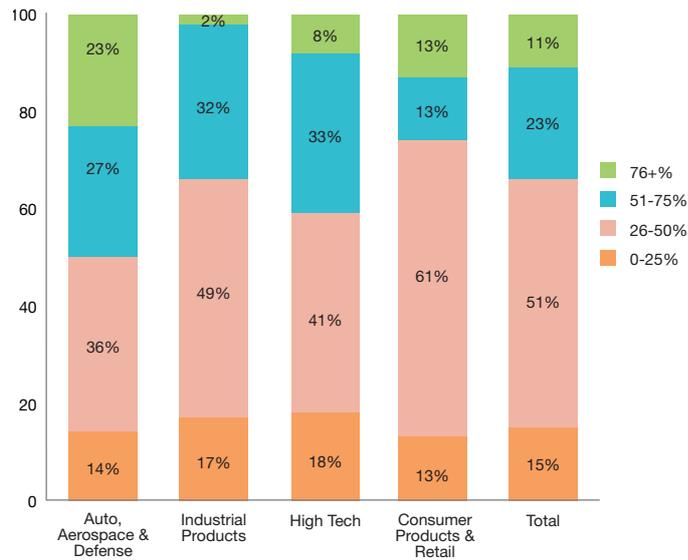
Success Rate of New Products/ Services Launched in the Past Three Years

About two-thirds of the respondents in our study affirmed that less than half the products launched in the past three years had been successful in the market. Even across the various industry sectors this range does not vary considerably. On the other side, 11% of respondents indicate that they achieve success rates of more than 76% – a significant difference in innovation performance and a significant potential for improvement.

Respondents indicate that failure to meet customer needs is by far the primary cause for new product launch failure. In particular, industry sectors that sell directly to end-customers cite this as the main reason for lack of success. Although companies are increasingly putting marketing in the lead role for innovation, they still struggle to understand customer needs and produce new products that effectively meet those needs.

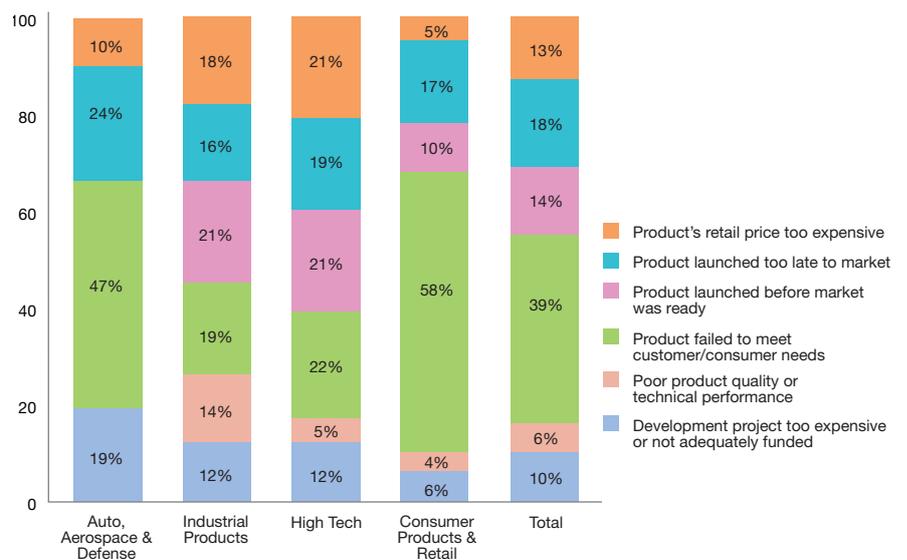
New methods in the innovation process and the more active use of collaborative technologies (Web 2.0, collaborative platforms, virtual worlds) provide opportunities to address this challenge. In addition, more structured application of known and proven methodologies – like design-to-value and voice of the customer – can help improve success rates. In many companies the influence of R&D departments and internal priorities are still too strong.

Success Rate of New Products Launched over Past Three Years



Source: Capgemini

Primary Cause of New Product Launch Failure



Source: Capgemini

R&D Collaboration

Overview

Collaboration in innovation can be driven from a number of different functional angles. In this section, the focus is on collaboration within the R&D function, with different tiers of collaboration:

- Internal collaboration based on R&D communities within the organization. Is this a function of organizational structure (centralized or decentralized), IT tools or funding?
- Internal collaboration among R&D, Operations, and Marketing and Sales, developing a more integrated innovation process.
- External collaboration with suppliers and customers in the current value chain.
- External collaboration with third parties outside the current value chain – capable of providing real “disruptive” innovation.

An important aspect of R&D strategy is the decision to outsource some R&D activities. This requires a validated choice of sourcing model, as well as close business model alignment with suppliers. Following the open-innovation concept, companies have started outsourcing R&D, enabling innovation to be leveraged earlier in the value chain.

So how can companies outsource their R&D to increase their flexibility and effectiveness, while maintaining a focus on meeting the needs of customers and consumers? To shed some light on the future strategy and structure of the R&D function, the questions in this section focused on companies’ current R&D footprint, the balance between centralized in-house R&D and different models of partnerships and outsourcing, and the IT mechanisms used to support collaboration.

Key Findings

We expect a number of shakeouts of companies with large R&D units, and increased merger and acquisition activity. This may precipitate further alignment of R&D unit operations, including process and tool harmonization, and shared ways of working.

In-house R&D is increasingly a consolidated function with a strong majority of companies maintaining only a handful of distinct facilities, with North America still the preferred location. Perhaps as a result of this consolidation, there was a high degree of confidence regarding the ability to secure ongoing funding.

Complementing this is the recognition of the value of collaborating beyond organizational boundaries. Compared with 2008, satisfaction levels increased for key tools such as open-innovation environments to collaborate with external innovation parties, and information systems to support internal design collaboration. All internal and external collaboration tools were highly rated.

“Our biggest challenge for R&D is not changing strategy, organizational redesign or improving supporting tools. It’s about getting the open-innovation way of working accepted by our researchers and developers.”

Industrial Products, Executive

Case Study:

Snecma Launches New PLM Solution to Support Collaboration in the Extended Enterprise

In response to economic challenges and new organizational patterns in the Aerospace industry, Snecma, a leading manufacturer of aircraft and rocket engines, launched a project called “Virtual Plateau” with strong integration among OEM and Tier 1 partners.

The objective was to establish a new Product Lifecycle Management (PLM) platform in order to enable true collaboration with all internal and external stakeholders involved in the engines programs. The platform would provide secure access to data, a central repository of technical data and CAD models as well as configuration data. A key requirement was to establish reliable collaboration processes with customers and suppliers around the digital mock-up as the central reference for product configuration. Real-time collaboration needed to be enabled in order to accelerate communication and development activities.

Capgemini has been supporting Snecma in this project on three major aspects:

- Internal collaboration among R&D, Operations, and Marketing and Sales, developing a more integrated innovation process.
- Redefinition of the processes to work internally and externally with partners
- Development of the new PLM solution and integration within the information system
- Change management and support for the deployment of the new solution

More than 1,800 individuals are impacted by this ambitious project, and the expected benefits are 5% to 10% reduction of the development costs for new engines thanks to improved collaboration among all partners.

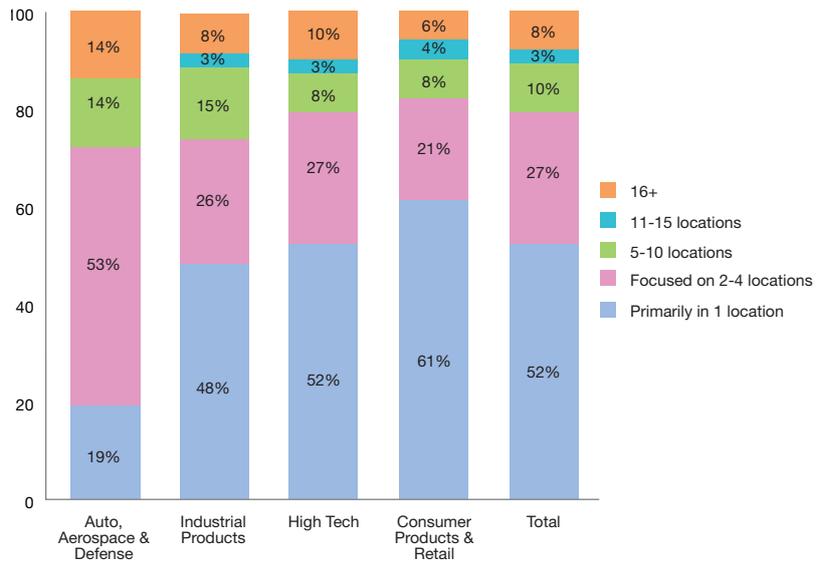
Number and Locations of Current R&D Facilities

Just over half the respondents (52%) operate a highly centralized model with only one primary R&D facility, up from 35% in 2008. An additional 27% operate a contained model with only two to four locations. This tight focus has no doubt helped to keep R&D operational costs to a minimum, while still delivering business value.

By contrast, only 11% of companies supported a decentralized model with R&D facilities spread across multiple (>10) locations. This model was more prevalent in the Automotive, Aerospace and Defense sector, possibly resulting from the dependence on R&D as a core competence and on specialist partners.

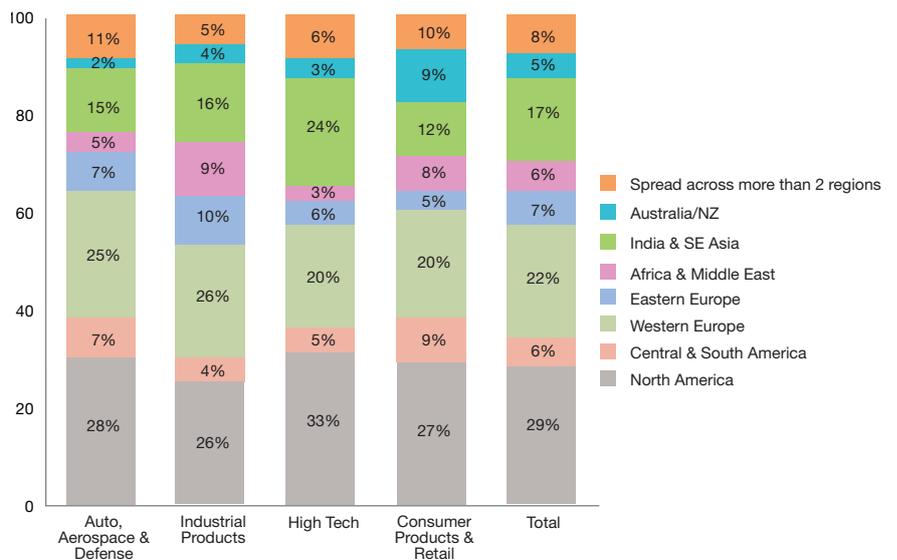
North America is still the heartland for R&D facilities for 29% of companies, followed by Western Europe (22%). However, India is catching up fast, providing a favorable environment in terms of infrastructure, knowledge capital, and government policies and regulations.

Current Number of Locations for R&D Facilities



Source: Capgemini

Location of Current R&D Operations



Source: Capgemini

Strategy for R&D in the Next Three Years

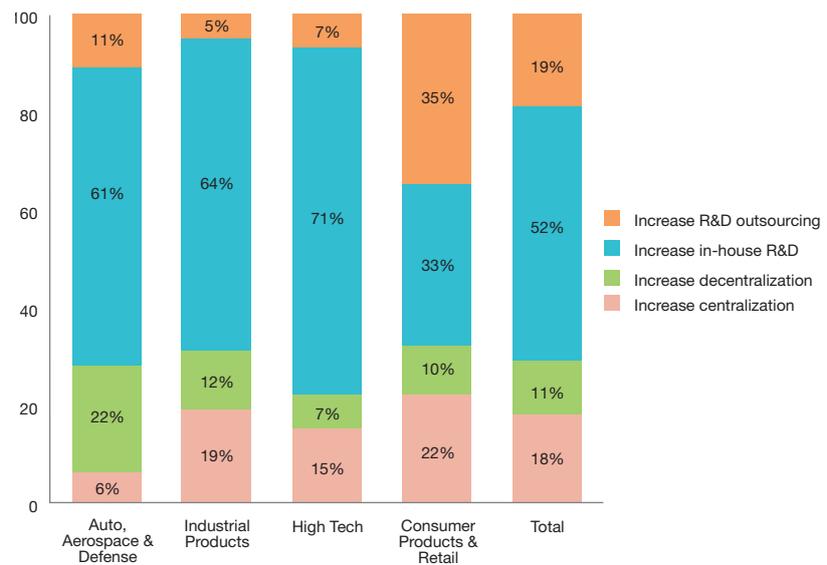
Interestingly, more than 50% of respondents indicate that their companies want to increase in-house R&D over the next three years, which reflects the perception that the development of intellectual property and knowledge is considered to be an important differentiating factor, even though external collaboration has become a standard process. The Consumer Products and Retail sector is most likely to use collaborative innovation models, no doubt due to the need to market specific, quickly changing, innovative product portfolios. This can only be achieved by leveraging all channels for innovation.

R&D Collaboration Activities

We asked respondents to assess the effectiveness of a range of IT-based collaboration tools. The results show very high satisfaction across the various channels and across most sectors and indicate the degree to which IT has become a pervasive and effective mechanism for collaborating. The following summary records the percentages of respondents rating each collaboration tool as “good” or better.

- **Open-innovation environments to collaborate with external innovation parties:** 79% said “very good” or “good.” This tool, used to find scientists/experts to assist in resolving innovation problems, recorded a significant increase from 2008.
- **Shared work spaces for data and documents:** 71% rated this as “very good” or “good.”
- **Exchanging product data with external partners via system interfaces:** 79% said “very good” or “good.”

R&D Strategy in the Next Three Years



Source: Capgemini

- **IT to support internal design collaboration:** 77% said “very good” or “good,” also an increase from 2008.
- **Collaboration within the organization’s R&D facilities:** 69% rated this as “very good” or “good,” and 12% rated it as “excellent.”
- **Collaboration within the organization cross-functionally:** 80% said “very good” or “good.”

In the past two years, many companies have adopted effective networks to leverage specialist external expertise, complementing both the consolidation approach to in-house R&D functions and the trend towards a more partnership-driven model for outsourcing. However, although many companies recognize the positive impact, the broad availability and day-to-day application of the above-mentioned technologies are in many cases still to be achieved, as our experiences show.

Interestingly, in particular Consumer Products and Retail companies were very positive users. High Tech and to a lesser extent Industrial Products were consistently less enthusiastic about these tools and infrastructures, possibly because of a greater importance attributed to intellectual property rights and an internal culture historically focused on specific unique technology platforms. These sectors could better leverage this kind of connectivity.

Customer Collaboration

Overview

The role of customers in innovation is likely to increase in the near future, as their opinion is ultimately the one that really counts. It is also likely to change, with the growing use of techniques such as co-creation and crowd sourcing. Currently it is not entirely clear where the boundaries of this customer involvement lie. People tend to connect co-creation with the earliest stages of the new product development process (notably idea generation) or the later stages (in effect, customization).

However, it is likely that customer interaction can be useful throughout the product development process. PepsiCo's Mountain Dew "DEWmocracy" case is a key example; customers were involved in developing new products ("Help create the new Dew"), contributing opinions ranging from the taste, color, look and feel, to the marketing campaign for this product. So customers must be regarded as a valuable innovation collaboration partner, at every step of the way.

But no matter where the involvement happens, stronger collaboration with customers will help companies better meet customer needs and therefore increase the success rate of innovations.

Key Findings

As we have seen from the barriers indicated in the Innovation Performance section, lack of insight into consumer needs and interpreting customer feedback are key obstacles for the innovation function. It is well documented that the role of the customer is critical in providing the starting point and validation mechanism for a successful new product or service. It can also be regarded as a key indicator of success, as important as the quality and functionality of the product itself.

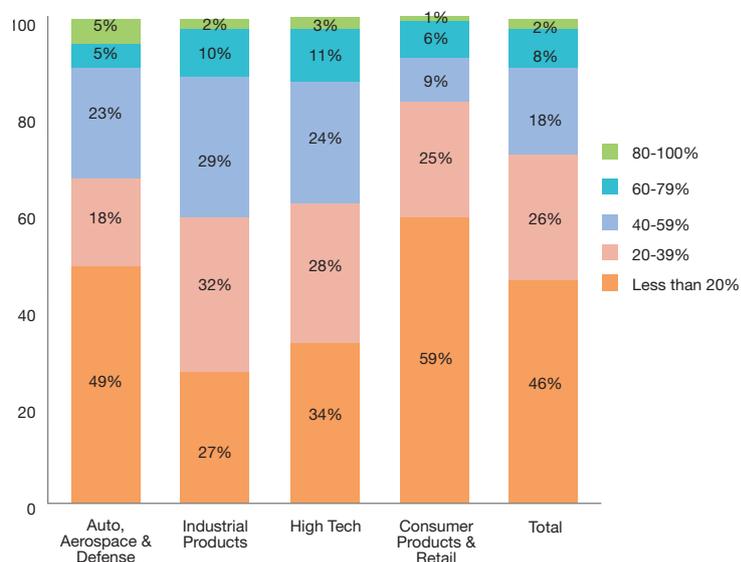
This section looks at the managed and proactive contribution of the customer in the innovation process and the degree to which companies are successful in leveraging the intelligence gained. Although it is clear that companies have put in place processes and systems for customer interaction, and there are positive responses regarding their use, the efficiency of these structures in terms of this leading to new products is less certain.

Percentage of New Products Shaped by Customers During Development

Just under half (46%) of respondents said that less than 20% of new products originated from ideas generated or shaped by customers, with an additional 26% putting the contribution between 20% and 39%. These relatively low figures correspond to the fact that many innovations still fail due to the inability to meet customer needs (see earlier discussion in "Innovation Performance" section).

Of course the results varied by sector, with Industrial Products companies claiming higher rates than other sectors and CPR being the least successful in gathering or incorporating customer ideas into product development. In the case of Industrial Products, this is likely due to the reduced number of customers and the higher degree of customer-specific engineering. In many cases, customers are directly involved in

Percentage of New Products, Launched Over Past Three Years, Shaped by Customers During Development



Source: Capgemini

“When our end users became involved in our innovation initiatives, it had the effect of ‘shaking up’ the value chain. As a result, we’ve gained significantly more insight from their contribution, which has helped to improve our product launches.”

**High Tech Company,
Chief Marketing Officer**

the specification of new products or they act as pilots. For Consumer Products companies, it is much more difficult to find a structured way to get representative customer insights across markets.

Experience shows that many companies would like to involve customers more effectively in their new product development process, but they face hurdles such as long development cycles or complex products. Additionally manufacturers’ perception is that their products are too commoditized or that they are “too far down” the value chain to interact with customers. Our work with clients leads us to believe that customer involvement is appropriate and possible for just about any business.

Customer Collaboration Activities

More than 80% of companies claimed to successfully (“good,” “very good” or “excellent”) use a range of mechanisms for collaborating with customers such as:

- Working with customers to co-develop products/services (lead customer concept).
- Predicting and capitalizing on customers’ unmet needs.
- Using open-innovation environments to collaborate with customers.
- Using the company’s information systems to support collaboration with customers.

This is an indication of the pervasiveness of Web 2.0 mechanisms.

Engaging with Customers

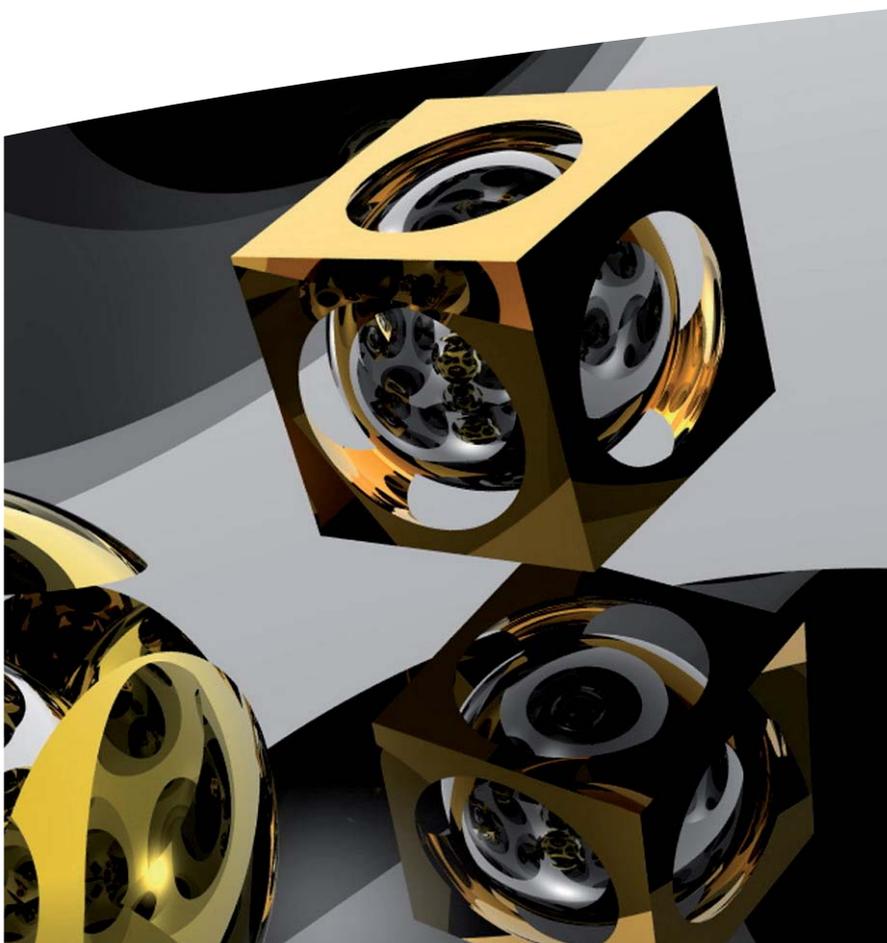
A strong majority of respondents (77%) believed that their engagement with customers was “good,” “very good” or “excellent,” representing an increase from 2008 levels for most sectors with the exception of High Tech.

Customer Insight Lacking

When asked what’s preventing customer collaboration for improved innovation, respondents said:

- Customer feedback, communication and insight
- Improved R&D function and facilities
- Collaboration with external parties

Clearly there’s work to be done in this area, as a significant number of executives said they were “unsure” about the barriers to customer collaboration.



Supplier Collaboration

Overview

As a reaction to increasing cost pressures and complexity, companies are continuing to concentrate on core competencies and outsourcing non-core functions. This is now also increasingly applicable to R&D, as outsourcing affects more and more types of operational and administrative functions. By outsourcing R&D and adopting the open-innovation concept, companies can leverage innovations earlier in the value chain.

In our work with clients, we frequently see early supplier involvement in R&D, but suppliers often still have a straightforward contractor role: They execute what has been conceived by the innovator in the chain. This approach significantly reduces the latent benefits of open innovation, and limits the possibility of high-value disruptive innovations from other parts of the value chain.

So how can companies outsource their R&D to suppliers to increase the flexibility and effectiveness of R&D, while maintaining a clear focus on customers' and consumers' needs? We believe companies need to assess the criticality of their innovation programs and decide on an appropriate maturity model of sourcing (for example, Capgemini's Global Sourcing of Services model) for each program. A significant variable is the opportunity for leverage both for and from suppliers.

Once an outsourcing decision has been made, suppliers must be selected based on their ability and willingness to take over part of R&D. Business models need careful alignment and, for current suppliers, the change from contractor to developer will be significant.

Key Findings

In this section, we asked participants to assess the effectiveness of the contribution of their suppliers' innovation initiatives, in terms of the reasons and functional impact. We discovered that companies are undertaking a number of supplier collaboration initiatives, which suggests that suppliers are being seen more as partners in driving innovation, although the importance of being innovative in reducing costs persists.

The overall picture clearly indicates that supplier collaboration has become a standard in all industry sectors and that companies employ various models of supplier collaboration to fulfill the market demand.

“We partner with other external parties for our innovation funnel but not always with companies; also with educational and other public institutions.”

Automotive, Aerospace and Defense, Marketing Executive



“An anomalous effect of outsourcing R&D to suppliers is that we dropped down the list of top innovators, as measured by R&D expenditure. But in practice we significantly increased our business value!”

High Tech Manufacturer, Executive

Reasons for Supplier Collaboration Initiatives

We gave our respondents a range of parameters regarding their company’s ability to carry out collaboration initiatives with their suppliers: reducing product costs, improving product innovation, providing access to new markets, accelerating time to market, improving product quality, access to required knowledge and improving innovation capacity.

All were consistently rated as “very important,” “important” or to a lesser extent “somewhat important,” indicating that the supplier role is viewed as essential in supporting overall innovation goals across the innovation value chain. However, it also points to a wide set of pressures being exerted on suppliers. It is possible that these expectations will be translated into suppliers adopting their own innovation initiatives, thus developing a virtuous circle, but the roadmap is likely to be challenging.

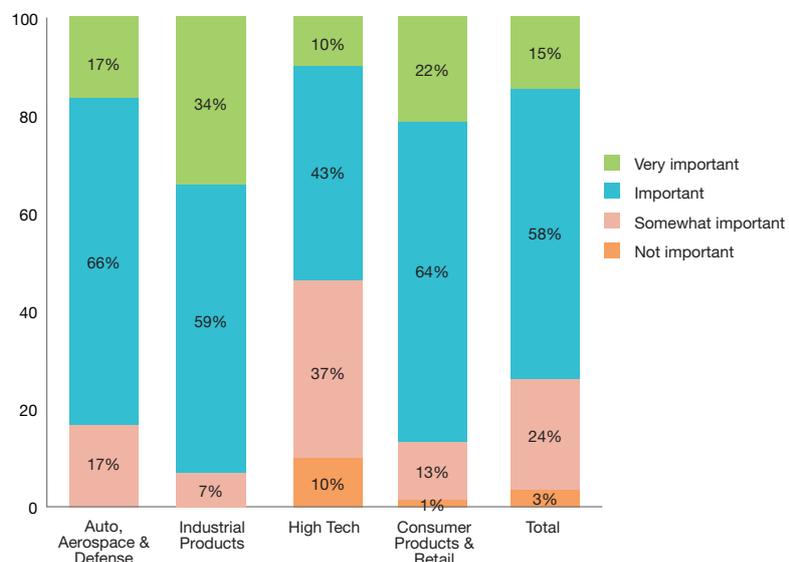
The High Tech respondents said they work well with suppliers to reduce costs and improve product quality, but there appears to be room for improvement in other aspects, notably access to required knowledge and improving innovation capacity.

Control over Intellectual Property as Important Criterion during Partner Selection

Seventy-three percent of companies rate the control over intellectual property as a very important or important parameter when selecting partners for collaboration in their innovation initiatives. This reinforces the fact that manufacturers prefer to partner with companies that have not only specific expertise, but also have systems to manage intellectual property, to ensure that it is not shared with competitors.

Western Europe (84%), North America (81%) and Asia-Pacific (76%) are perceived to exert effective controls

Importance of Intellectual Property Control as Criterion during Partner Selection



Source: Capgemini

“Of our top 10 most successful innovations launched in the market, eight of them were due to supplier collaboration.”

**Consumer Products
Manufacturer, Executive**

over manufacturers’ intellectual property, in line with the established trend of supplier collaboration and outsourcing in these regions. Africa (52%) and Eastern Europe (63%) lagged behind and will need to be proactive to gain the confidence of manufacturers.

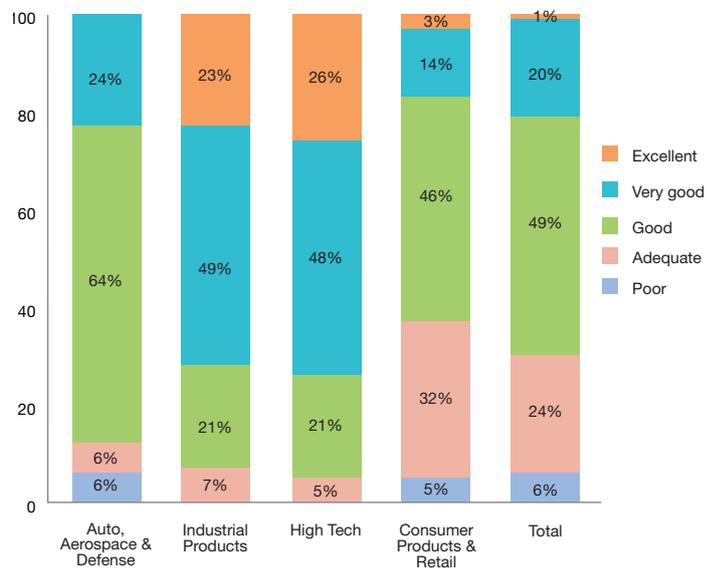
Supplier Collaboration Activities

Most companies across the sectors said they were effectively carrying out a range of supplier collaboration activities, including the use of information systems (89%), open-innovation environments (80%) and involvement in the innovation process (79%).

Supplier Collaboration in Relation to Innovation

Engineering, Logistics, Production Processes, and Sales and Marketing were the leading areas for efficient collaboration, while Module and Final Assembly, Sourcing and Procurement, and Service and Maintenance were less well regarded. From a sector perspective, High Tech faces a critical challenge in collaborating with functions, notably in Module and Final Assembly (35% rated this as “adequate” or “poor”), Planning and Forecasting (26%), and Sourcing and Procurement (30%).

Effectiveness of Involving Suppliers in the Innovation Process



Source: Capgemini

Recommendations

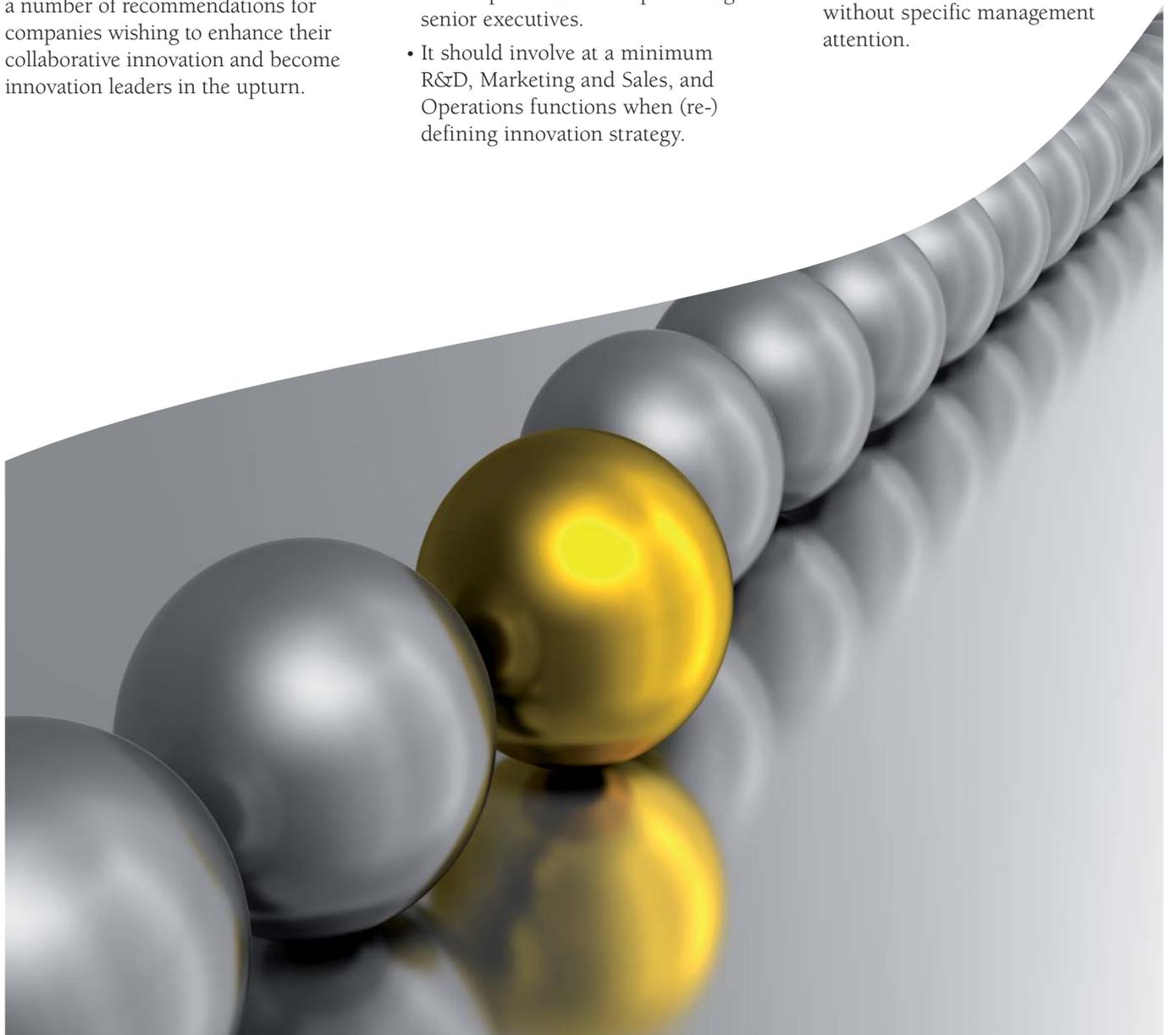
Our “Collaboration for Innovation” research revealed some interesting insights about the way the manufacturing industry has addressed the challenges of the economic downturn over the past two years in relation to leveraging innovation as a route to more sustainable top-line growth.

Our analysis of the data combined with our experience working with manufacturing clients leads us to a number of recommendations for companies wishing to enhance their collaborative innovation and become innovation leaders in the upturn.

Make business innovation a fully integrated part of your corporate strategy.

- Business innovation strategy should describe the mid- and long-term innovation objectives and make explicit the alignment with top-line organizational growth.
- Business innovation strategy should set explicit and clear directions to drive collaborative innovation.
- It should define innovation roles and responsibilities of sponsoring senior executives.
- It should involve at a minimum R&D, Marketing and Sales, and Operations functions when (re-) defining innovation strategy.

- To become an innovation leader in the upturn, companies need to expand the current scope of innovation (more radical than new products) and change the structure (significantly increase collaboration) of innovation.
- Maybe most importantly, business innovation strategy should emphasize, in particular, breakthrough innovations as they promise the most benefits, while incremental innovation is typically achieved without specific management attention.



Develop and implement appropriate innovation performance measurements or metrics to aid sound decision-making.

- Business innovation strategy should include a balanced set of internal measurement key performance indicators (KPIs). Applicable to multiple functional areas at every level of innovation management, they must include metrics around customer perceptions, time-to-market or sales/revenue data if the focus is top-line growth.
- The right performance measurements will be essential. Be clear about metrics when collaborating with external organizations and tailor the KPIs if necessary.
- Understand the current business models of collaborative partners to ensure the right shared performance measurements.

Reshape R&D to more effectively enable collaborative innovation.

- Define the key R&D activities (aligned to top-line growth) for an in-house centralized function and those for outsourced providers. Local R&D activities will be handled as a kind of “outsourced activity.” Innovation effectiveness will be the key in the coming years. Research, Development and Engineering effectiveness should be aligned to reduce time-to-market and optimize product launch capabilities.
- Technologies supporting innovation will increase in terms of functionality. The most important differentiator to success is the acceptance of technology by users in the company and

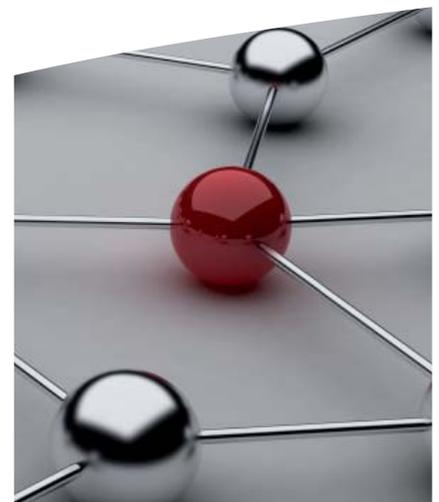
collaborative partners. Collaborative innovation requires availability, accessibility and acceptance of (new) technologies.

Refine and maintain customer collaboration.

- Experiment with customer collaboration and approaches such as co-creation.
- Persevere with customer involvement even if the initial outcomes appear to be of minimal value. As the study indicates, generating demonstrable benefits from various customer initiatives is not easy.
- Ensure that a strong measure of realism shapes expectations of the effectiveness of interaction with customers.
- Embed customer interaction within the overall innovation strategy or the potential benefits will not be gained.
- Experiment with multiple forms of customer involvement, but be clear about objectives and the business case before initiating them. Mistakes with customers are not easy to fix.
- IT tools are critical to the success of customer collaboration. The market is moving quickly as new Web 2.0 tools become standard and the next-generation Web 3.0 is being developed and promoted, and the use of social media and social CRM (Customer Relationship Management) will increase significantly. Avoid the use of too many tools, and use them judiciously in line with the complexity of the value chain and organizational culture. Ownership of the content, processes and channels will be unclear for large companies and therefore a possible threat.

Build and scale up strong supplier networks for collaborative innovation.

- Make explicit which forms of supplier collaboration the company needs, ensuring that multiple types can be managed concurrently.
- Marketing and Sales will play a more dominant role in supplier collaboration alongside R&D and Operations, requiring a clear communication platform to align all external contacts with suppliers.
- The role of Purchasing/Procurement will change dramatically, requiring more innovative and entrepreneurial skills, and different supplier performance measurements.
- Supplier networks will also increase outside the traditional value chain; attention should be paid to ensuring the innovation effectiveness of these networks.
- In addition to control of intellectual property in the supplier network, the next big issue will be control of reputation management (perception of the reputation of different stakeholders, liability, recruitment).
- Prioritize supplier collaboration, ensuring clarity of the specific innovation remit that suppliers are best able to deliver profitably – neither too broad nor too narrow.



We hope this report has provided insight into the issues and challenges of ensuring that innovation initiatives contribute significantly to developing and marketing profitable products and services for the manufacturing industry.

If you wish to receive more detailed findings – specific to a sector – from our research or to discuss in more depth some of the issues or opportunities raised in “Collaborating for Innovation,” please feel free to contact us.

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