

Getting a better return on your innovation investment

Highlights from Arthur D. Little's 8th Global Innovation Benchmark Study

Ben Thuriax-Alemán, Anders Johansson, Rick Eagar

Most executives today do not need any convincing that investing in innovation is a good thing to do, but it's still hard to know whether you're getting good value from your investment. There is certainly no shortage of advice. In Harvard Business Review alone you can find over a dozen articles on innovation in the last year. Many articles present experiences of leading innovators, frequently focusing on a few iconic examples, such as Apple, eBay or P&G, but sometimes the lessons are conflicting and their broader applicability may be questionable. Despite all the received wisdom, there is actually little empirical evidence about what really works in terms of managing the innovation process. Which innovation practices really make the difference in terms of performance?

Based on trends over the last three years (with more than 650 responses) and responses to the 2012/13 study (with 275 responses), Arthur D. Little's 8th Global Innovation Survey helps to provide some answers through a thorough analysis of more than 70 different innovation management elements. In this article we present some of the highlights of the survey results, together with the practical real-world reflections of five senior executives from among the world's leading companies:

- Mr Jang Suk Park, CEO, SKC, a global high-tech material specialist based in Korea
- Mr Marc Florette, Director Research & Innovation, GDF Suez, a leading energy supplier
- Dr Katsumi Emura, Executive General Manager of Center Research Laboratories, NEC, a leading provider of internet, broadband network and enterprise business solutions

Most executives need no convincing that investing in innovation is a good thing, but there is little empirical evidence about what really works in terms of managing the process. Arthur D. Little's 8th Global Innovation Survey provides some answers, with a thorough analysis of more than 70 different innovation management elements. Here the authors present some of the highlights, together with practical, real-world reflections from five senior executives from among the world's leading companies.

- Mr Johan Malmquist, President and CEO, Getinge Group, a leading global medical technology company
- Mr Ron Borsboom, Director Product Development, DAF Trucks N.V., a leading commercial vehicle manufacturer in Europe.

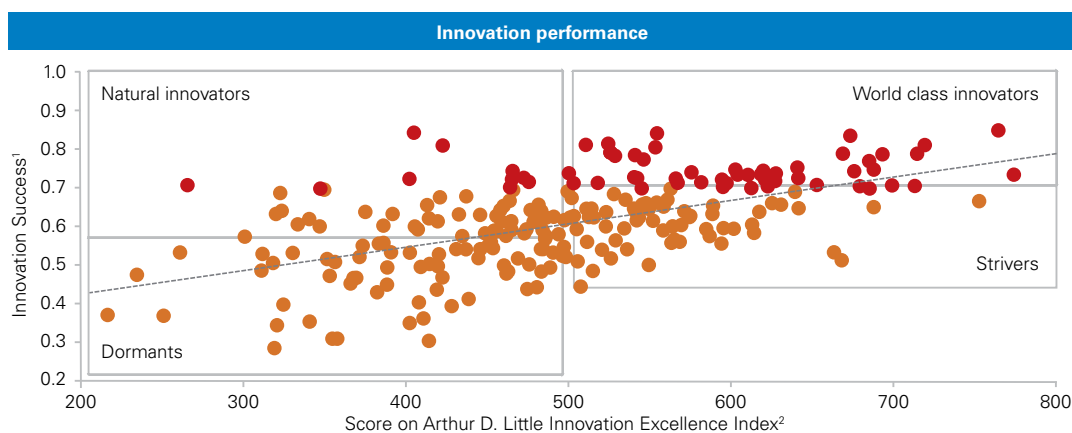
We are very grateful for their valuable contributions.

1. Excellence in innovation management leads to higher innovation performance

Looking at the whole range of activities that are required to bring innovations to market, one of our clearest findings is the strength of the relationship between good practice in innovation management and innovation success. Despite huge diversity between companies in terms of products, services, customers and dynamics, there is a strong correlation between how well companies implement the elements of the Innovation Excellence Model and the innovation success they achieve (see Table 1).

If you are curious about your innovation performance we have made the toolkit developed for the study available for all firms interested in exploring innovation performance. Participation is free and Arthur D. Little will provide you with personalized feedback on your performance.

Please contact us at http://www.adlittle.com/survey_contact.html



1) Innovation Success metric based on company self assessment and new product introduction in terms of sales, EBIT, and process improvement. Components are weighted based on relative allocation to product, service, or process innovation. Performance on EBIT, sales and process improvements are normalized by industry type.

2) Innovation Excellence Index based on company assessment of implementation of the 8 constituent components of Arthur D. Little's Innovation System Excellence Model. The scoring controls for industry effects – the relative importance of each of the 8 components is based on the relative importance reported in that industry. Note: R2 = 0.33. The relationship is significant at p<0.001 – there is less than a 1 in a 1000 chance that this relationship is due to random effects. Source: ADL GIES 2012 (N=273)

Table 1 Correlation between innovation excellence best practices and innovation success

Source: Arthur D. Little analysis

In other words, applying good practice and investing in the areas that are most important to your industry does pay off.

"I very much like the study and would intuitively agree to the conclusion that good innovation management practices lead to higher financial success for the company. So, the result does not surprise me. We are continuously focused on good measures of innovation within our company. In the end, it regularly remains a challenge to connect a certain innovation or innovation practice to a financial result. The attempt to take a quantitative approach is interesting and welcome."

Mr Ron Borsboom, Director Product Development, DAF Trucks N.V.

"It is important for Getinge to benchmark against relevant peers. Therefore, we appreciated participation in Arthur D. Little's Innovation Excellence Survey 2012, which provided important insights into our competitive performance."

Mr Johan Malmquist, President and CEO, Getinge Group

"In a world where unexpected competitors might emerge from other sectors through significant efforts in terms of innovation, we like to benchmark our innovation capabilities with a broader cluster including potential new entrants."

Mr Marc Florette, Director Research & Innovation and member of the Executive Committee, GDF Suez

For most companies there is ample scope to improve on innovation performance across and within industries. Our study shows that the top-quartile innovators enjoy more than **twice the proportion of new sales for new products/services** (based on sales in last three years), nearly **twice the EBIT** and a **30 % shorter time-to-break-even** than the rest.

This is a good illustration of the financial or economic benefits of excellent innovation performance. Uniquely, this correlation provides real evidence that investing in the right innovation management best practices helps companies achieve greater innovation success.

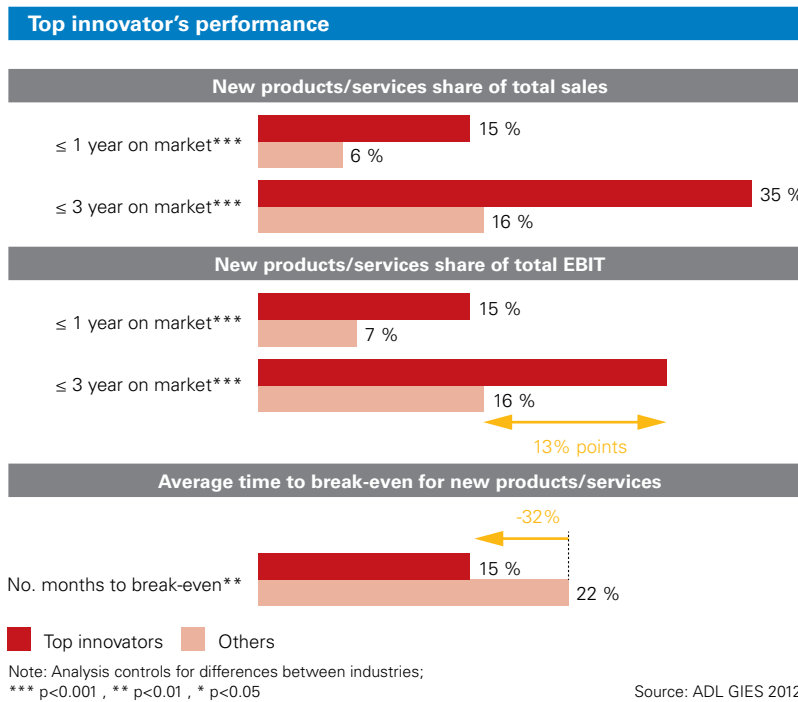


Table 2
Top innovators sustain significantly higher performance
Source: Arthur D. Little analysis

2. Not enough is done to measure innovation performance effectively

Most companies still find it difficult to manage and track innovation performance.

The left-hand side of Table 3 shows that **only 17 % of companies rate themselves either in the top quartile or above average** in terms of innovation metrics capabilities, pointing to a high level of dissatisfaction with efforts to measure innovation performance. This underlines the difficulty companies have in measuring innovation and suggests that a lot of companies know that measuring innovation is an important issue that has not been addressed.

The right-hand side of Table 3 shows that, with decreasing performance in innovation metrics capabilities, innovation success decreases significantly, dropping monotonically with each successive drop in quartile.

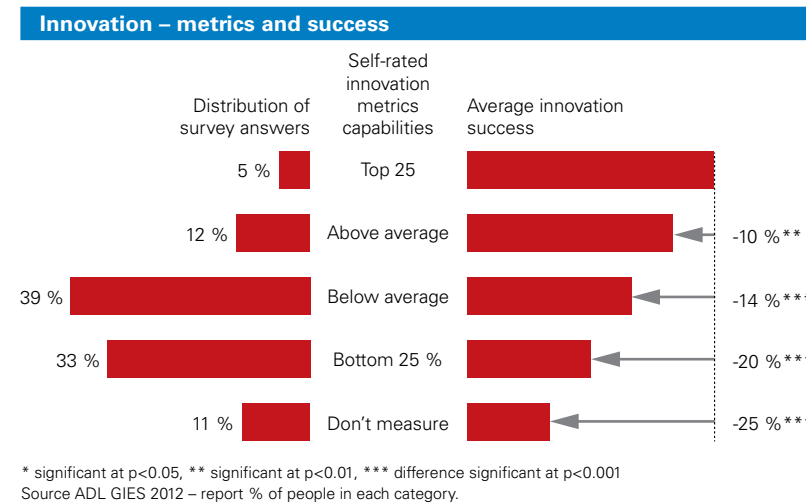


Table 3
Relation between companies' innovation metrics capabilities and innovation success
Source: Arthur D. Little analysis

"In the medtech industry it is becoming more and more important to prove not only clinical evidence but also economic value with new products and solutions. Innovation must pay off. This requires facts and figures showing the business effect of each innovation investment."

Mr Johan Malmquist, President and CEO, Getinge Group

"We do not really measure the (overall) return and performance of our high level innovation projects. However, we are very good at measuring and managing the individual projects and their fulfilment of targets in terms of delivery, time and cost. We put a high emphasis on this as I believe this detailed monthly follow-up is important to get the right results in the end. As a result we keep most innovation projects within time and budget."

Mr Ron Borsboom, Director Product Development, DAF Trucks N.V.

"Measuring innovation is a powerful tool as it contributes to create a common awareness of the challenge the company is facing and has to overcome. It also forces us to define and share what the company means by Innovation. For instance, the definition of "innovative business models" covers a wide range of concepts, from the enlargement of distribution channels to new positions on the value chain and this needs to be defined and measured in different ways."

Mr Marc Florette, Director Research & Innovation and member of the Executive Committee, GDF Suez

3. Top innovators have a more radical approach to product and business model innovation

Our analysis of different innovation investment practices allows us to identify some of the differentiating practices of top innovators, primarily in terms of the relative emphasis on incremental versus radical innovation. Table 4 looks at how resources are split across different innovation approaches.

Across all industries we find that top innovators with leading innovation success tend to focus more on radical innovation than other innovators. The trend varies depending on whether innovation is being applied to products, services, process or business models.

In particular, top innovators:

- Focus their product innovation effort more towards radical innovation (compared to more balanced product innovation by other innovators).
- Balance their service innovation efforts between incremental and radical innovation (compared to more incremental focus by other innovators).
- Balance their process innovation efforts more towards incremental innovation (very similar to other innovators). This may reflect the nature of process innovation, which is generally associated with higher capital plant and longer investment cycles.
- Balance their business model innovation efforts between incremental and radical innovation (compared to a more incremental focus by other innovators).

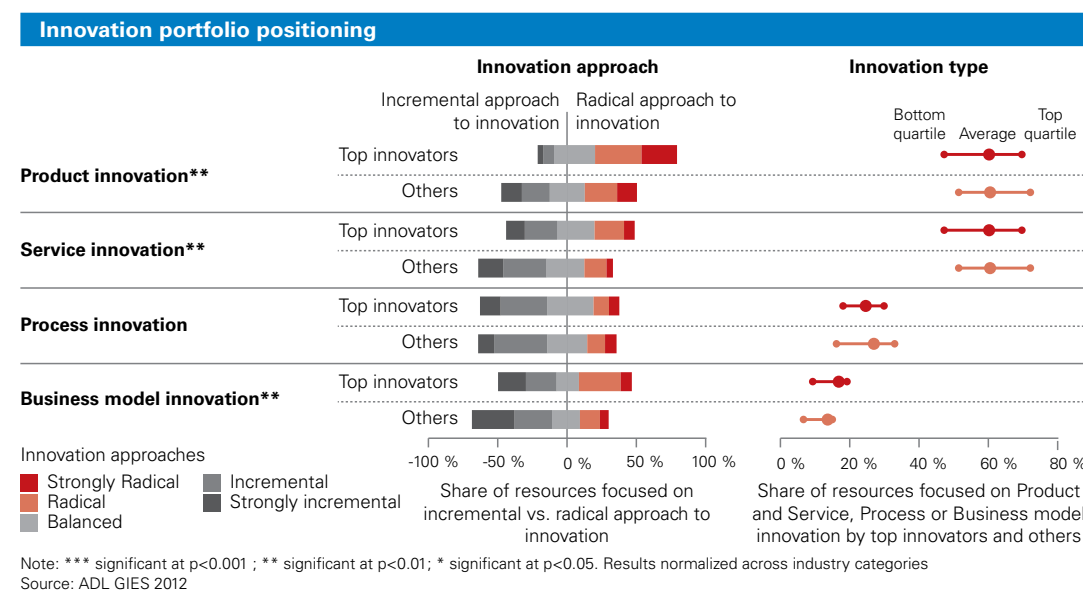


Table 4 Relative positioning of innovation portfolio in terms of product, service, process and business model innovation

Source: Arthur D. Little analysis

“We agree that top companies tend to pursue ‘radical’ innovation rather than a ‘gradual’ one but we feel that the speed of innovation should be decided based on both the company’s internal conditions and external circumstances. A company would struggle if its innovation were slower than market changes. However, if it exceeds the rate of adoption of new innovation and technology, there is a risk of failure from being too ahead of the market. For example, in our chemical business we need to secure reliable product quality and production yield through radical process innovation at the early stage for successful market entry but we control the speed of product innovation to match our customer needs cycle.”

Mr Jang Suk Park, CEO, SKC

4. Different approaches in different industries

While the Arthur D. Little Innovation Excellence Model is generally relevant across all industries, there are some differences in terms of which elements of the model are most important and have the highest impact on success. In our study we asked respondents to rate

the relative importance of different elements (see Table 5). We also rated each company's performance in each element of the model.

It is possible to see how the relative importance of different elements relates to the nature and dynamics of the industry. For example:

- For virtually all industries, Innovation Strategy is confirmed as being of highest importance.
- Oil & Gas attaches most importance to Resource Development – reflecting the increasingly problematic skill shortages in the industry, and possibly also conservatism in technological innovation.
- Food & Beverage attaches most importance to Development & Launch – in Food & Beverage, product development cycles can be less than three months, marketing innovation is often more important than technological innovation, and time-to-market is critical.

Companies participating in the study are able to rate their performance in each element of the model. One of the key insights we received in our follow-up interviews is that one most significant reason for underperformance is neglecting a part of the Innovation Excellence Model that is critical for their industry.

“The Arthur D. Little survey confirms our intuitions that we should increase our efforts to develop our Idea Management capabilities. We have to define the best way to address that topic in our wide multi-business units organization.”

Mr Marc Florette, Director Research & Innovation and member of the Executive Committee, GDF Suez

“The relative importance of different parts of the framework reflects historical trends – in some cases the relative importance of different aspects of innovation can change rapidly. In NEC's case it is clear that resource management has not been a priority, but this situation is changing. With the evolution of Big Data, rather than the overall industry knowledge, which has been the key in the past, compiling specific knowledge in the target industry is becoming important and we feel that obtaining and training data analysts will become important. Thus, we believe that resource management (especially competency management) will become critical in certain parts of the IT industry in the future.”

Dr Katsumi Emura, Executive General Manager of Center Research Laboratories, NEC

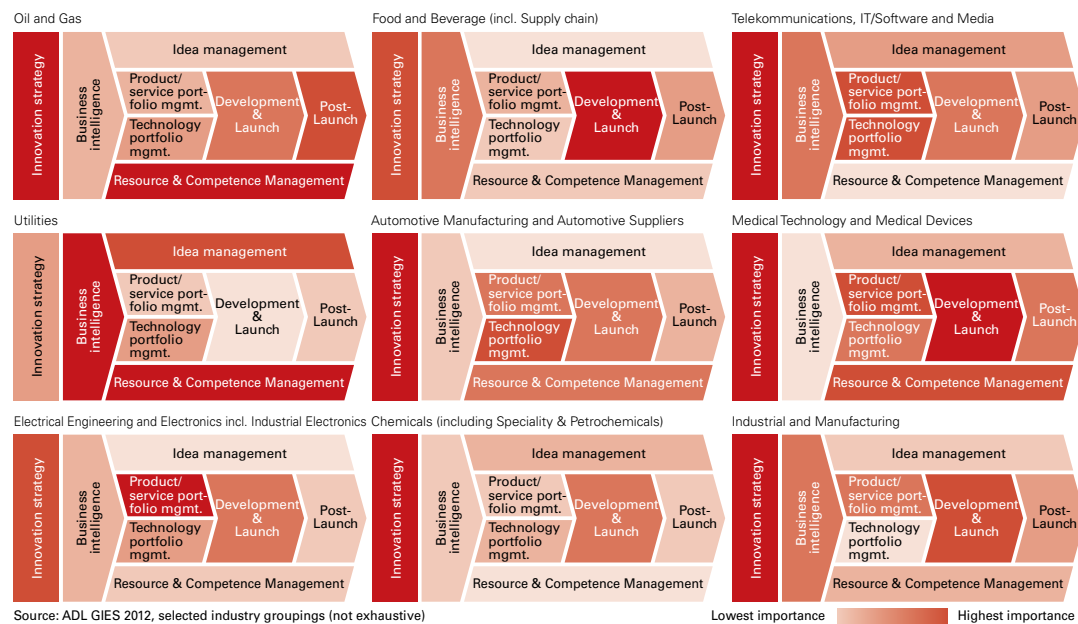


Table 5 Relative importance of innovation activities in different industries Source: Arthur D. Little analysis

5. Four practices stand out as drivers of innovation success

Although top innovators tend to perform significantly better across all areas of the Innovation Excellence Model, we find that there are some innovation approaches that are absolutely critical to overall innovation success, and some that are particularly associated with product, process or business model innovation. The evidence from the study provides clarity on which innovation activities have the greatest impact on innovation success. We carried out an in-depth statistical analysis based on multifactor regression of all 70+ ques-



Picture by iStockphoto

tions related to innovation approaches in the study to understand the impact on innovation success.

We identified four practices that were highly significant¹ in terms of their association with innovation success. These practices focus on linkage between technology and corporate goals and customer needs, and leveraging resources to achieve better performance. They are:

- Understanding each technology in terms of its quantified contribution to corporate goals
- Using external sources of business intelligence in a structured way
- Reacting to changes in targeted segments by reviewing the product/service portfolio
- Mobilizing the whole organization to develop new ideas.

¹ The regression model developed was robust ($F=17.5$, $p<0.001$). The four practices presented here were all highly significant ($p<0.01$) across industries even when controlling for firm size and relative effort on product vs service or business model innovation.

“We agree that these four factors are critical – the difficult part is deciding how to implement them. We can change the business and technology portfolios etc. to match our customers, but the question is how far should we change, including our own skill sets and culture/philosophy. It is in this area that NEC believes we should start thinking about utilizing outside resources or as a combination. For the laboratory/research center, ‘understanding each technology in terms of its quantified contribution to corporate goals’ and ‘mobilizing the whole organization to develop new ideas’ are particularly important. We are beginning to pursue initiatives to shine a light on the technology we have and the technology underdevelopment, and discuss it with the top management (CEO and BU heads). The discussions have been lively and fruitful and in the future we are looking at expanding the discussions to match them with market-side information.”

Dr Katsumi Emura, Executive General Manager
of Center Research Laboratories, NEC

Understanding each technology in terms of its quantified contribution to corporate goals

Developing a detailed understanding of how different technologies in the technology portfolio contribute to corporate goals has three important aspects:

- It requires companies to review what capabilities they possess and what they should possess for the future from a functional perspective (what it enables for the customer as opposed to a technical solution). This exercise identifies the strong and the weak areas for the company, and typically triggers identification of new opportunities and synergies.
- It requires companies to attempt to quantify the value of technology on a consistent basis. This is not an easy exercise but it provides an outstanding opportunity to understand value drivers from technology and the benefits of developing technology (internally or in collaboration) versus sourcing technology from third parties.
- It forces technology managers to seek alignment with corporate strategy – or at least it forces a discussion on what the corporate goals are and how technology might contribute to their attainment by explicitly linking technology with products, process or changes to the business model.

Combining these three aspects allows companies to regularly realign and reprioritize their technology investment portfolio to support corporate goals and reduces the potential for waste in technology development. The trend is particularly pronounced in the automotive, aerospace and defense, and telecoms and media industries.

“In Japan, while there are many engineers who are well versed in technology, there is an extreme shortage of engineers who can discuss business. As a result, we sometimes struggle to quantify technologies in terms of ‘How is this going to make money?’ We notice this when we interact with European and US manufacturers who are good at clearly defining roles, and who tell you ‘We will only do this much/go this far.’ We feel Japanese manufacturers look to customize their entire response to whatever it is they are asked to do. This can be a strength but it does prevent us from pursuing a One-to-Many (as a Platform) strategy.”

Dr Katsumi Emura, Executive General Manager
of Center Research Laboratories, NEC

“Going forward it will be essential to leverage on partnerships as you optimize your innovation. This requires a powerful innovation engine in synch with an integrated supply chain. This will drive profitability in the business.”

Mr Johan Malmquist, President and CEO, Getinge Group

Using external sources of business intelligence in a structured way

All too often business intelligence is based on internal perceptions of what is important, and business data and information is filtered through internal sources (typically sales or customer service functions, or existing company databases). Making direct use of external sources of business intelligence – for example, lead users, suppliers, external technical experts, creative patent structure analysis and crowd sourcing – provides a “messier” but ultimately more reliable approach for capturing valuable data. However, this data does need to be suitably structured and translated into intelligence. External sources with multiple data points must be tested and verified against internal know-how before they can be used.

What is particularly relevant here is that companies should aim to become proficient at attracting and developing intelligence instead of relying on finding it. This means positioning yourself in public and across suitable networks as being keenly interested in certain fields, and projecting an image of being a hot spot of activity in

these fields. This will help to make people and organizations with valuable intelligence contact you.

This approach brings proactivity to decision-making and planning, and enables well-thought-through decisions and the development of capabilities to “surprise” the competition, optimize the portfolio and balance incremental and radical innovations. Good intelligence from multiple external sources can also help to foresee competition beyond classical industry borders, which may otherwise bring disruption and turbulence to those that are taken by surprise.

“One of our greatest challenges is to obtain and locate useful external technologies, remove problems related to them, and finally connect them with new businesses or products. In other words, this attempts to bring out creativity and innovation of employees outside SKC by interconnecting their various skills with internal parts of SKC.”

Mr Jang Suk Park, CEO, SKC

Reacting to changes in targeted segments by reviewing the product/service portfolio

This practice is concerned with reviewing the product/service portfolio frequently, and in a structured manner, in order to meet potential changes in targeted segments. Managing the portfolio of projects/services under development enables companies to optimize their resource allocation in line with changes in their target segments, removing “waste” from the portfolio of projects. The best companies review and manage their product and service portfolio throughout the lifecycle, i.e. in product planning mode, in product development mode and in maintenance mode. Business cases in product management are built through a combination of strategic fit and business contribution, discounted by risk. This requires a clear “phase in/ phase out logic,” and is an essential capability to drive business performance at the desired level of commercial, technical and regulatory risk.

Top innovators are able to guide portfolio direction and demonstrate the rationale for reprioritizing projects by adopting a distinct and robust segmentation model as a key component of the product and technology strategy. In addition, top innovators optimize their portfolio offering through careful synchronisation of product and service planning. A systematic review will need to outline where, when and against whom the company chooses to compete. The decision on how to compete is then translated into a product and service portfolio that needs to be managed over the lifecycle, populated and made responsive to business changes, new innovations, new ideas and revised strategic directions. Top innovators are rewarded for applying best practices in this field, for example in terms of:

- Clear strategic direction at an adequate level of detail from the CEO and his/her executive team down to the delivering units
- Full transparency and rapid overview of how strategic priorities drive project and portfolio response
- Clear responsibilities and accountabilities at different levels of the organization



- Evidence-based discussions to reduce volatility and uncertainty in R&D priorities
- Optimized R&D spend both at company level and Business Unit/Division level
- Better guidance and governance to enhance ability to manage research and technology.

“The pressure to deliver simpler products affordable in the growth economies increases. Adding to it, product development and manufacturing become more and more local. This calls for more local product strategies.”

Mr Johan Malmquist, President and CEO, Getinge Group

Mobilizing the whole organization to develop new ideas

A common mistake in idea generation is to let a single R&D Group or an Innovation Unit solely lead the process. The whole organization (and in fact the whole world) has to be mobilized in order to improve:

- a) the chances of coming up with a great original/new idea, and
- b) the opportunity to enrich and get feedback on new ideas from a wide range of business functions early on.

Companies that make a real effort to engage everyone discover the benefits: more and better ideas, and great ideas arising from unexpected corners of the organization.

“In SKC one of the great challenges for innovation is connecting individual engineers’ expertise and ideas with those of R&D researchers in the entire company, including overseas branch offices, in order to expand its business and retain innovation leadership. It is important for a company to manage innovation but the more important thing is that the company creates an atmosphere encouraging its employees to engage in innovation voluntarily and willingly as the company will benefit from involving the whole organization in generating and enriching ideas.”

Mr Jang Suk Park, CEO, SKC

Some top innovators support company-wide idea generation through time allowance on a regular basis in creative environments (e.g. visionary rooms) within which individuals and/or teams with complementary profiles and competences from different parts of the company mobilize and come together to brainstorm and enrich ideas. Some companies provide facilitated brainstorms, some do not. The process of enriching, selecting, parking and killing ideas should be properly structured and consistently applied. Recognition and reward systems should be well developed. Different companies may be more or less “open” in terms of idea generation, but many companies include stakeholders from the extended enterprise such as customers, suppliers and research partners.

Insights for the executive

We believe the 8th Global Innovation Excellence Survey has provided some invaluable insights into which innovation practices make a difference in terms of innovation performance – and the participating companies that have already received their personal benchmark reports agree with us. We have demonstrated that:

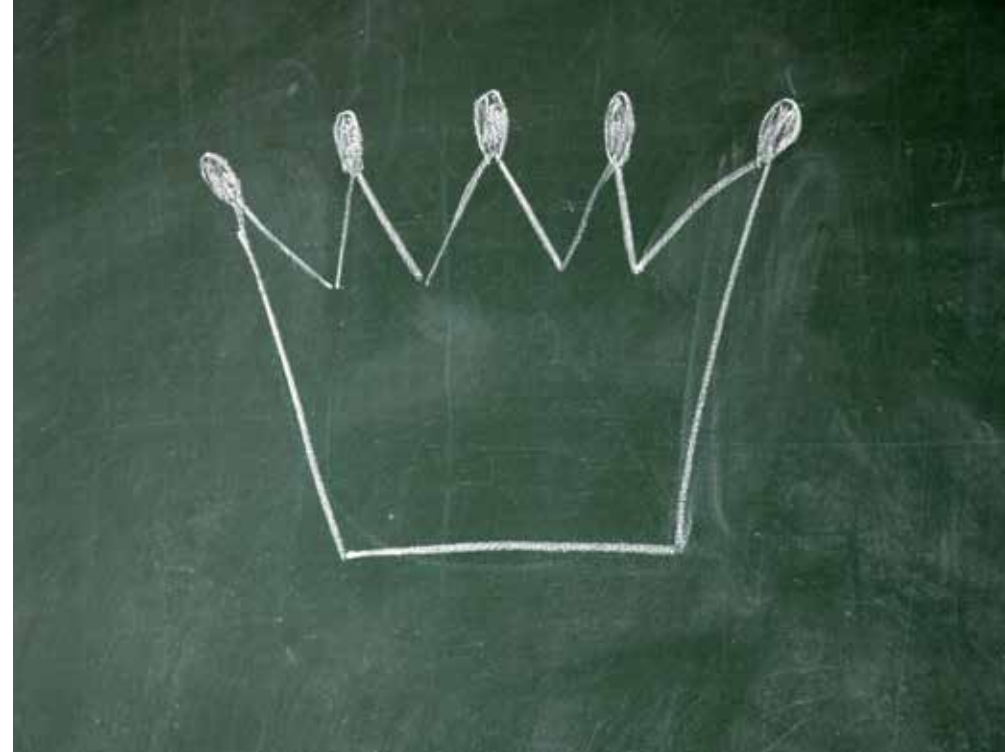
- There is clear evidence of the link between how firms manage their innovation management processes and the return they achieve on innovation.
- There is a significant benefit (in sales, EBIT and process improvement) from becoming a top innovator.
- Most firms do not invest enough in tracking innovation performance and believe that this could be significantly improved.
- Some innovation management practices stand out as having a very strong impact on innovation performance across industries, particularly those associated with linking technology better with strategic objectives and customer needs, and harnessing all the available resources for innovation both inside and outside the company.

By using an effective innovation management model backed up with strong evidence, companies can identify the practices they need to target for improvement if they really want to get a better return from their innovation investment.

We would like to express our sincere thanks to the following individuals and companies for their contributions to this article:

1. *Mr Jang Suk Park, CEO, SKC, a global high-tech material specialist based in Korea.*
2. *Mr Marc Florette, in charge of Research and Innovation and Member of the Executive Committee of GDF SUEZ. GDF SUEZ develops its businesses (electricity, natural gas, services) around a model based on responsible growth to take up today's major energy and environmental challenges: meeting energy needs, ensuring the security of supply, fighting against climate change and maximizing the use of resources. The Group provides highly efficient and innovative solutions to individuals, cities and businesses by relying on diversified gas-supply sources, flexible and low-emission power generation as well as unique expertise in four key sectors: liquefied natural gas, energy efficiency services, independent power production and environmental services.*
3. *Dr Katsumi Emura, Executive General Manager of Center Research Laboratories, NEC.*
4. *Mr Johan Malmquist, President and CEO, Getinge Group. Getinge is a leading global medical technology company with operations in the areas of surgery, intensive care, infection control, care ergonomics and wound care.*
5. *Mr Ron Borsboom, Director Product Development, DAF Trucks N.V., a leading commercial vehicle manufacturer in Europe.*

The authors would also like to acknowledge the valuable contributions of many other Arthur D. Little staff without whom the study would not have been possible.



Picture by Thinkstock

If you are curious about your innovation performance there is still an opportunity to become part of the benchmark – as part of our on-going work in innovation excellence, Arthur D. Little is making the toolkit developed for the study available for all firms interested in exploring their innovation performance. [Participants receive a free benchmarking report.](#) The toolkit can be accessed at www.adl.com/innovationexcellence.

Ben Thuriaux-Alemán

Is a Principal in the London office of Arthur D. Little and led the development of the 2012-13 Global Innovation Excellence Survey. He is a member of both the Technology & Innovation Management Practice and the Energy Practice.

Anders Johansson

Is a Partner at Arthur D. Little's Gothenburg office and leads the Global Technology & Innovation Management Practice.

Rick Eagar

Is a Partner in the London office of Arthur D. Little and a member of the Technology & Innovation Management Practice.