

Pathways to Innovation Excellence

Results of a Global Study by Arthur D. Little



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Executive Summary – How Companies Can Beat Their Peers to Profit

In our groundbreaking new benchmarking study, we find that the majority of global companies generate far less sales and earnings from the introduction of new products and services than the world's top corporate innovators. Most companies, while considering innovation a top priority, are selling themselves short.

If there was any doubt about how critical it is for companies to innovate during the recession, our new benchmarking study shows that the most innovative global companies achieve up to twice as many sales, as much as double the EBIT and take half the time to break even when they introduce new products and services, compared to the average company.

In January 2010, we completed *Innovation Excellence*, a global, cross-industry study of how successfully companies innovate, to identify trends amongst the world's leading corporate innovators and to benchmark the performance of other companies against this standard.

Approximately 400 companies globally completed the survey during the second half of 2009, with the highest response rates coming from the following sectors: engineering, machinery and high-tech; telecoms, IT, software and media; automotive; and chemicals and pharmaceuticals.

"Benchmarking R&D performance against peers and competitors is the best way to kickstart stagnant or underperforming innovation programs," says Volker Kirchgeorg, the global head of our Technology and Innovation Management Practice and one of the authors of this study. "With over a decade of Arthur D.

Little's data and in-depth experience upon which to benchmark businesses' innovation capacity, low performers can see precisely where and why their current efforts are failing to deliver."

Using our proprietary Arthur D. Little Innovation Excellence Model, participating companies were given a score rating their innovation excellence compared to their industry peers, taking into account:

- new business innovation (development of new applications and even new business models),
- innovation strategy, how they
- measure innovation and how they manage their
- innovation processes (from assembling the right business intelligence to managing their product or service portfolio).

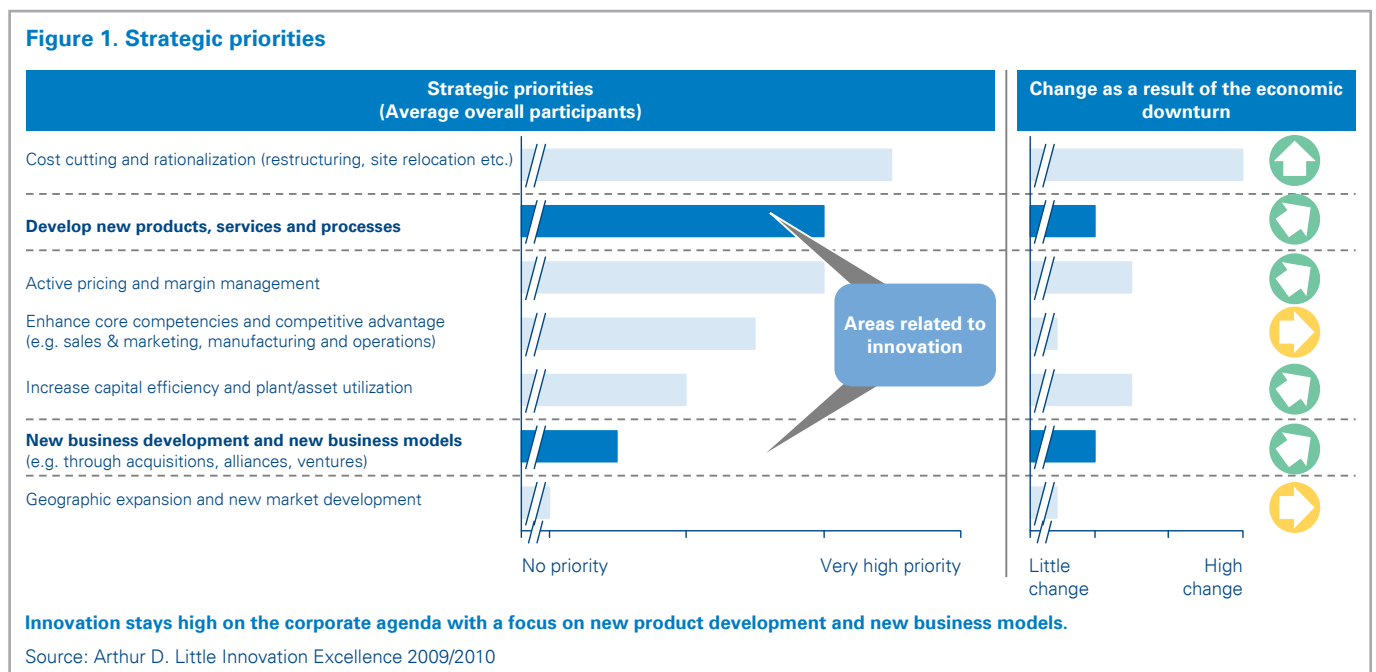
The focus was on companies' early innovation activities, or upstream activities, and especially on new business innovation. Upstream activities incorporate all the planning a company does and the choices it makes. Downstream activities refer to how those choices are implemented.

The study also identifies the top innovators in each industry based on innovation success. This was calculated from the sales and EBIT companies achieved from the introduction of new products, the amount of time it took to get the product to market and how long it took for the company to break even on the initiative. We found that there is a clear link between execution excellence and result, because those companies that get high scores for innovation excellence are also the most likely to make their innovation a success.

Most Companies Say Innovation is Critical, But Do Not Take Bold Steps

The study finds that innovation remains to be a critical strategic priority this year as companies seek a return to pre-2008 profit levels. In fact, innovation is becoming even more important; companies that participated in the survey say that developing

new products, services and processes is a very high priority in 2010. That makes innovation the second most important strategic focus that companies have for this year, after cost-cutting and rationalization (see figure 1).

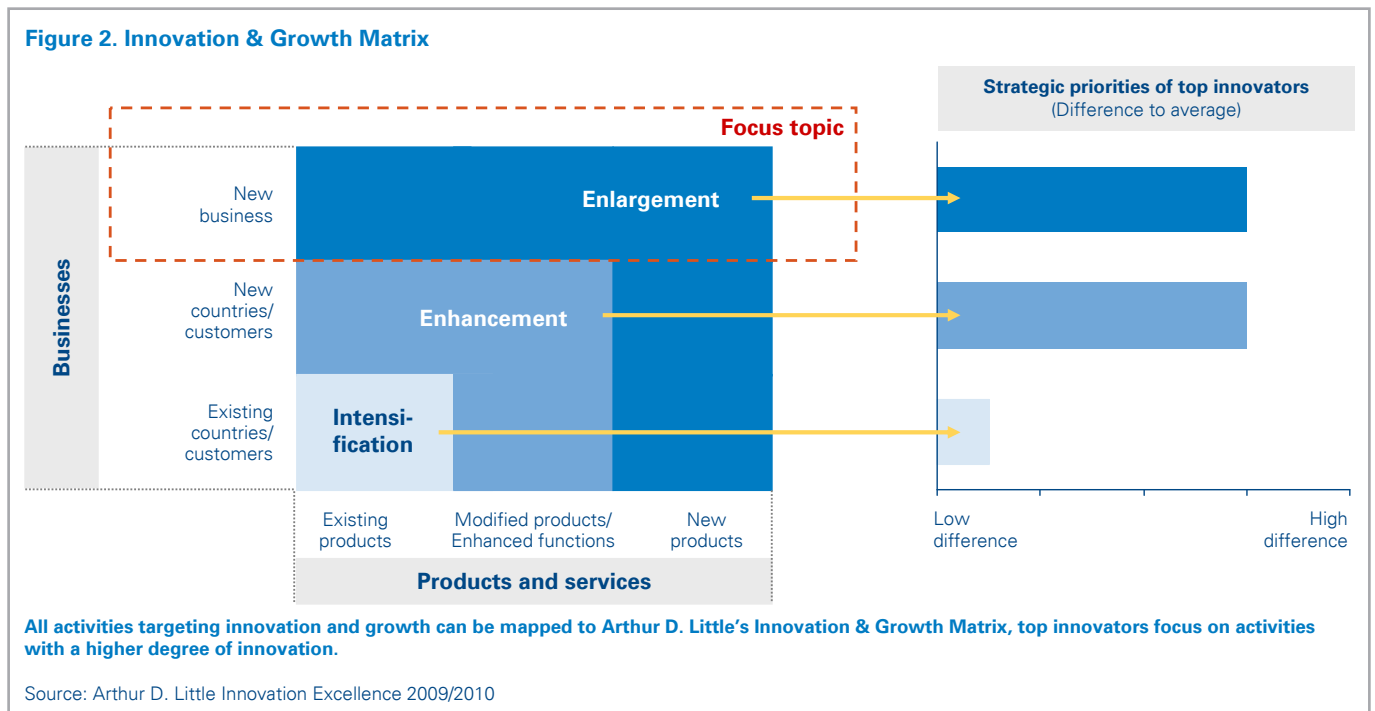


However, although most companies believe that innovation is a high priority, many are not prepared to take the bold steps necessary to maximize their chances of success. The study finds that the majority of participants have significant room to improve their innovation efforts when compared to the top companies.

All activities within a company targeting innovation and growth can be mapped to Arthur D. Little's Innovation & Growth Matrix. The average company that participated in the survey is focusing on intensification with a low degree of innovation (see figure 2).

However, new business and new product development is significantly more important for top innovators. In fact, they are not just expanding their existing businesses, they are identifying new business and new product development as a top strategic priority. They are also more likely to shorten the time it takes to get their new products and services to market.

The report also finds that top innovators all prefer an open approach to innovation, whether by encouraging close cooperation with external organizations to gather intelligence and help with the analysis and early integration of lead users or by outsourcing product and business development to third parties. In fact, top innovators are 19% more likely to have an open approach to innovation compared to the average company. They are especially likely to open up their business intelligence and idea development to third parties.



Lackluster Results, Dissatisfied Companies

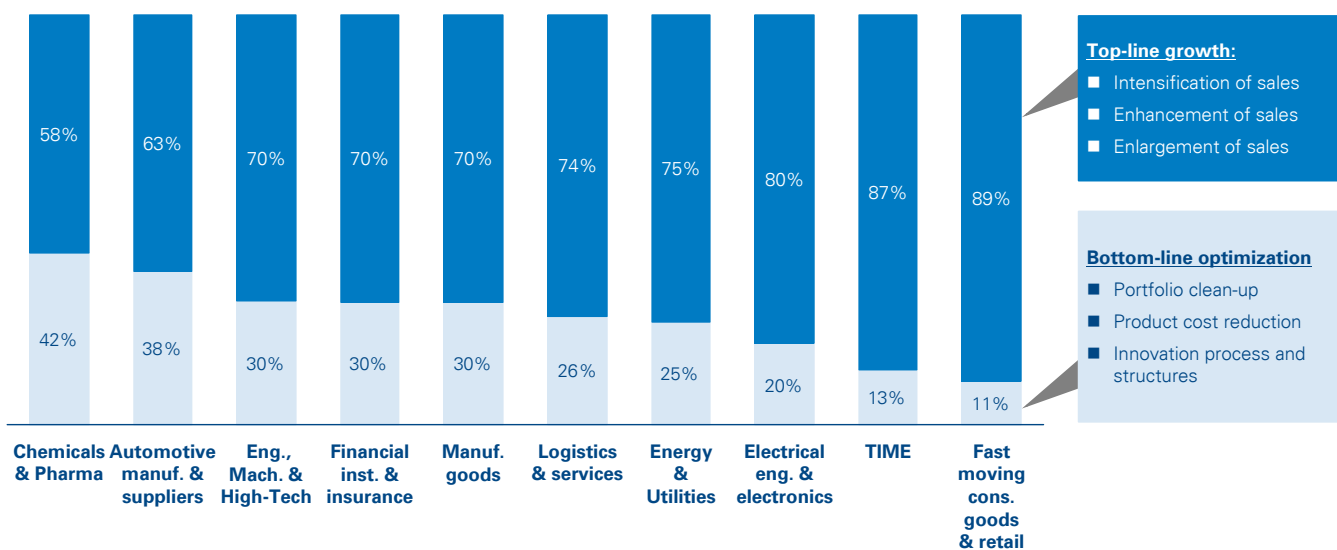
The impact on top-line and bottom-line growth for the most innovative companies is dramatic and sustained. For example, compared to the average company, the most innovative telecoms, IT, software and media (TIME) companies achieve 2.2 times more sales from new products and services that have been on the market one year and 2.7 times more EBIT. The most innovative manufactured goods companies achieve 2.6 times more sales from new products and services that have been on the market five years and 1.8 times the EBIT, compared to the average.

Compared to the average participant overall, top innovators achieve up to twice the amount of sales from new products and services, up to double the EBIT and take half the time to break even.

Top-line growth is the main goal of innovation for most companies, but the primary strategic value of innovation to any given company differs a lot from industry to industry. For example, 89% of fast-moving consumer goods and retail companies surveyed say their innovation efforts are aimed at generating top-line growth and making more sales. Only 11% see innovation as a route to optimizing the bottom line (see figure 3).

By contrast, 42% of chemical and pharmaceutical companies and 38% of automotive manufacturers and suppliers say that the primary strategic value of innovation is to optimize the bottom line by cleaning up their portfolios, reducing the cost of their products and improving company processes and structures.

Figure 3. Primary strategic value of innovation activities



Source: Arthur D. Little Innovation Excellence 2009/2010

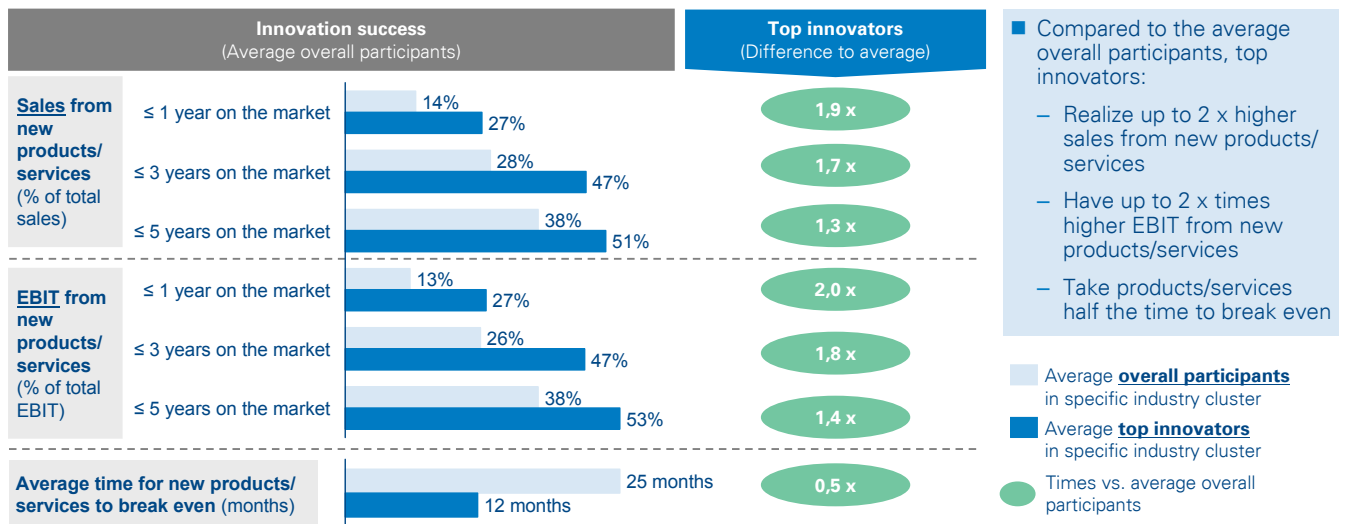
Significant Room for Improvement

Companies from every industry that participated in the report have plenty of room to improve their performance. The study shows that the degree of innovation at the companies surveyed is not determined by their industry sector. In fact, the results show there is a wide spread in the innovation excellence score achieved by the most and least successful innovators within each industry.

For example, within the telecoms, IT, software and media industry cluster alone, the most innovative company scores nearly 900 points out of a possible total of 1000 for innovation excellence, whereas the least innovative company scores just less than 200.

This even applies in the telecommunications, IT, software and media industry (TIME) and the electrical engineering and electronics industry, which survey participants admire the most for their standards of innovation. These two industries are also identified as the two markets that require the highest level of innovation in order to remain competitive.

Figure 4. Innovation success across industries



Although results differ from industry to industry top innovators in general and across industries are significantly more successful.

Source: Arthur D. Little Innovation Excellence 2009/2010

Comparing Company Performance Across All Industries

It is perhaps not surprising, then, that 75% of the companies surveyed have an average or low level of satisfaction with the return on their innovation investment. However, this report can help.

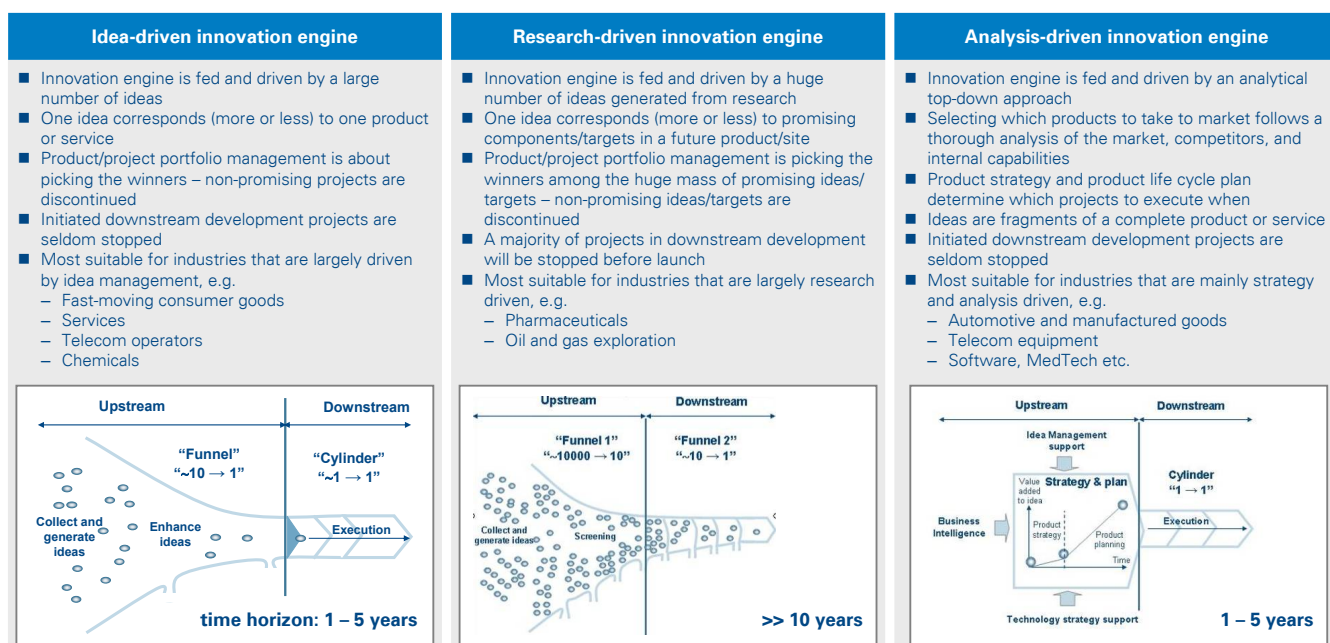
We did not just benchmark participating companies' innovation capacity against other companies in their industry, but against the companies pursuing the same innovation strategy in any industry, which is the first time this empirical data has been collected.

We call these strategies 'innovation engines' and find that companies are using three different innovation engines. Some 42% of companies take an analysis-driven approach to innovation, 39% take an idea-driven approach and 19% pursue a research-driven approach (see figure 5).

"Our clients always ask us, 'how does my approach compare to my industry peers?'. If your company is already very innovative, it may be more fruitful for you to compare your efforts against the companies in other industries that use the same innovation engine as you with the most success," says Markus Achtert, a Principal in our Technology and Innovation Management Practice and one of the authors of this study (see figure 6).

The results of the study therefore include a 'Path to Innovation Excellence'. If your company is a low or medium innovator, you can speed up your efforts by benchmarking your company against the most innovative companies in your industry. However, if you are already one of the top innovators in your industry, it might be better to compare your company to the most successful companies using the same innovation engine as you, regardless of the industry.

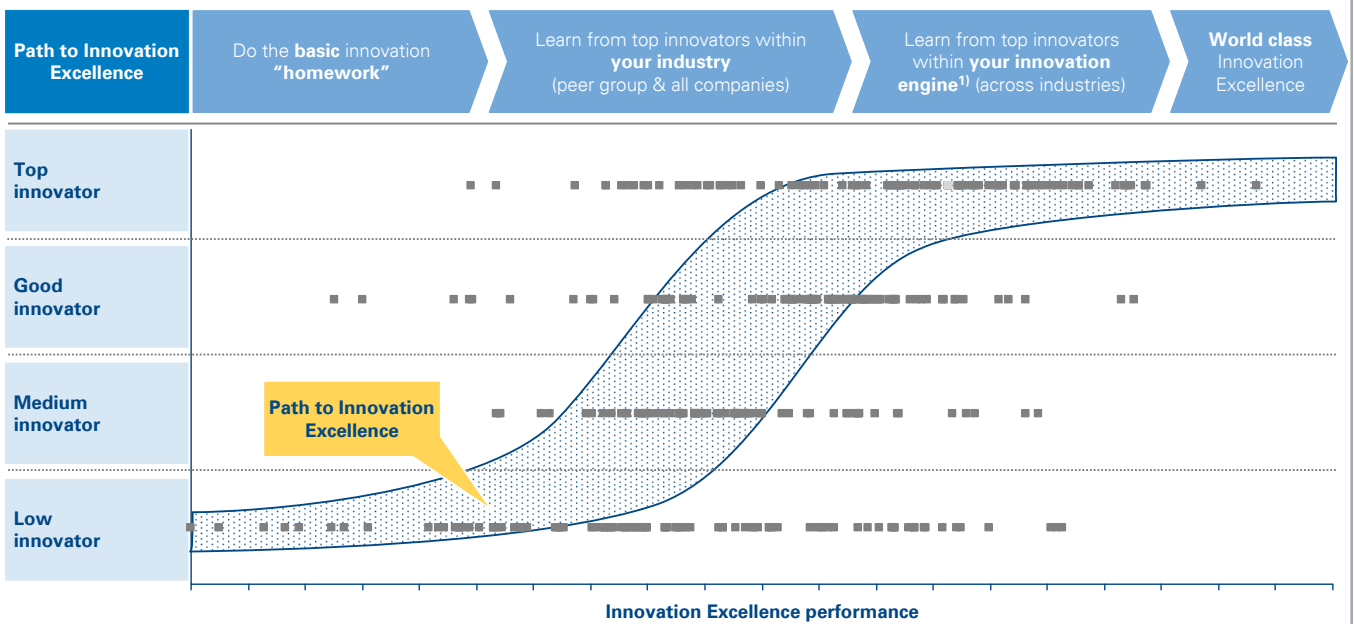
Figure 5. Innovation Engines



Arthur D. Little expected each industry sector to prefer a single innovation engine.

Source: Arthur D. Little Innovation Excellence 2009/2010

Figure 6. Path of Innovation Excellence



Good and top innovators should benchmark themselves across industry boundaries within their innovation engine.

1) All participants have been allocated to one of the following innovation engines: Idea-driven; Research-driven; Analysis-driven
 Source: Arthur D. Little Innovation Excellence 2009/2010

Companies can accelerate their journey to Innovation Excellence by benchmarking themselves against others within their industry or outside their industry for "best practices." Knowing where they are starting from helps companies exploit their

current resources and skills to the full. It also helps companies understand the true value of their technology base and therefore what to acquire, accelerate, maintain, divest or just keep under review.

Different Innovation Engines Explained

Most participants, particularly those in the automotive, manufactured goods, telecom equipment and software industries, take an analysis-driven approach, where the decision about what products to take to market comes from a thorough analysis of the market, competitors and internal capabilities, a process that can take from one to five years. These projects are seldom stopped once they are in development.

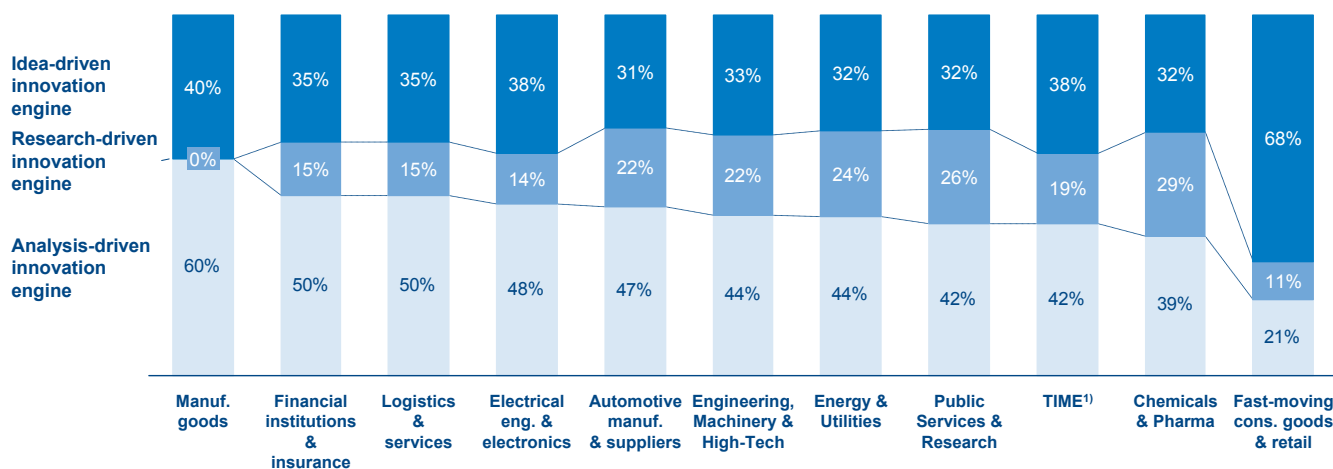
A further 39% of companies, such as fast-moving consumer goods companies and telecoms operators, have an idea-driven approach to innovation, whereby the company generates a large number of ideas and implements the very best ones, usually over the next one to five years, and rarely discontinues them once they are in development.

The smallest group pursue a research-driven approach over a longer time frame of up to 10 years, whereby a huge number of ideas are generated from research and the best elements continued. Even once projects are in development, many of them are killed before they are launched. Unsurprisingly, this approach is most common in research-driven industries, such as pharmaceuticals and oil and gas exploration.

However, the types of company that use each approach is not cut and dried. The study found that each of these innovation engines is implemented in nearly every industry sector surveyed. Some 39% of the chemical and pharmaceutical companies, for example, use the analysis-driven approach, 29% use the research-driven approach and 32% use the idea-driven approach. Meanwhile, 47% of automotive manufacturers and suppliers use the analysis-driven approach, 22% use the research-driven approach and 31% use the idea-driven approach (see figure 7).

While we expected industry sectors to prefer a single innovation engine, in reality we see all three engines co-existing in industries depending on the objectives, scope and time horizons of the product portfolio, the company’s competitive environment and where it is positioned in the value chain. Nevertheless, it needs to be stressed how important it is that companies pick the right innovation engine to meet their needs in order not to waste time or resources.

Figure 7. Innovation engine per industry cluster



Different “innovation engines” used for innovation management can be found across all companies and industries.

1) TIME: Telecommunications, IT/software and media
 Source: Arthur D. Little Innovation Excellence 2009/2010

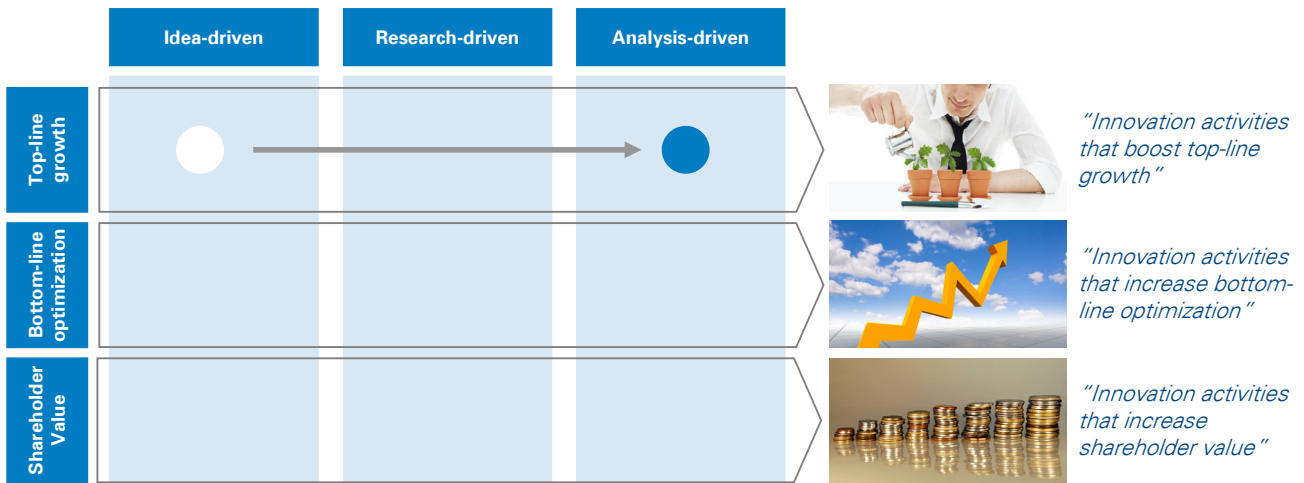
Innovation Case Study

Arthur D. Little helped a world leader in milking systems improve the effectiveness of its R&D investments. The company makes complex assembled products and was clearly in an analysis-driven environment. However, it behaved as if it was using an idea-driven approach to innovation, because all ideas were screened and evaluated, with the most promising ones selected for development and distribution downstream.

In fact, some ideas slated for development could not be executed because some of the other elements that were needed had not been put forward for development. The confusion and constantly changing investment decisions resulted in long delays, quality problems and budget overruns and ultimately the performance of the business suffered.

So we helped the company to implement an analysis-driven innovation engine instead. Suddenly the R&D strategy and planning worked. This allowed the company to build a proactive product planning operation, decrease module variants by up to 60%, and save €4 million in upfront costs (see figure 8).

Figure 8. Innovation Case Study



Changing towards the appropriate innovation engine unleashed tremendous potential.

Source: Arthur D. Little Innovation Excellence 2009/2010

Levers to Improve Innovation Excellence

To help businesses improve innovation performance, the study identifies best practices among the top innovators. By comparing the average innovation excellence scores of the top and good innovators to those of the medium and low innovators, we have determined that the common factors that give the first group an edge over their peers are their successful management of their product and service portfolios and their strong idea management. The top innovators also use systematic tools to generate business intelligence and customer insights.

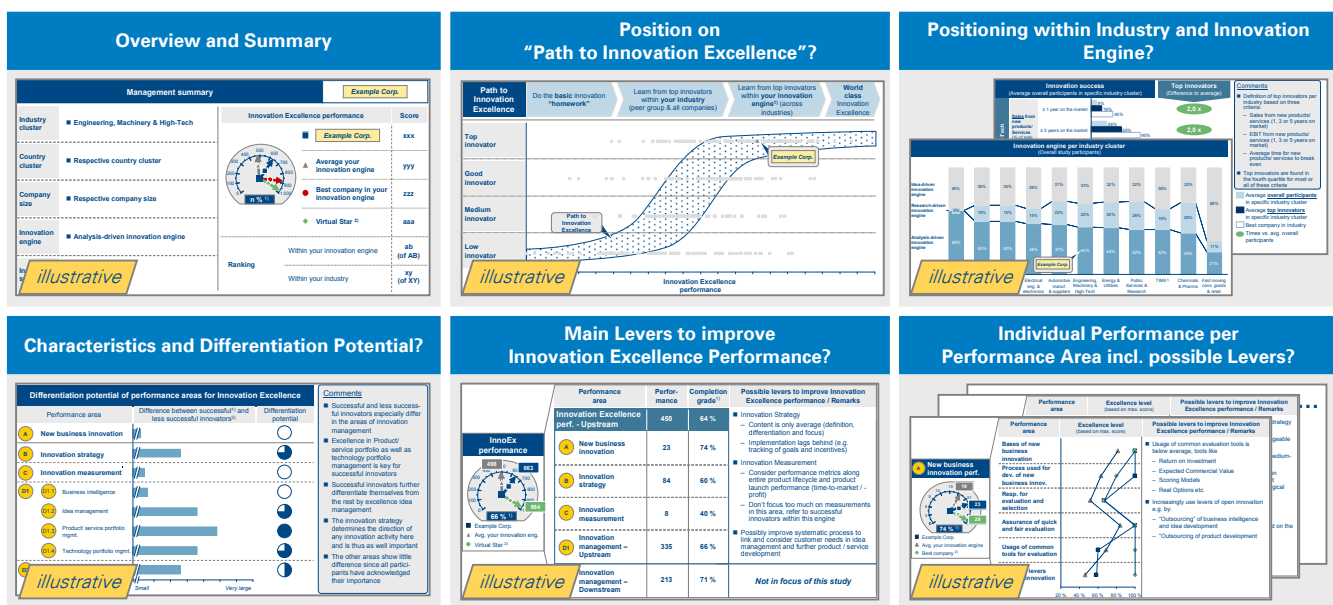
However, the study also shows how companies trying to replicate the success of the most innovative companies pursuing the same innovation engine can speed up their progress.

- For those pursuing an idea-driven approach to innovation, we recommend that companies embrace the mindset of a fast-moving consumer goods company. Those that excel in this have a systematic approach to generating and analyzing customer insights, as well as to measuring implementation.

- For those companies that favor a research-driven approach to innovation, we recommend that companies embrace the mindset of a research-intensive pharmaceutical company. The companies that excel in this area tend to employ strong portfolio management to identify winners early on in the lab, and then manage a quick and effective route to market.
- To be successful with an analysis-driven approach, companies should embrace the mindset of an advanced car manufacturer with complex products and long life cycles. Companies that excel in this area plan systematically over the complete life-cycle of the product in order to justify their high investment in development and keep the planning of both product innovation and technology development separate but interlinked.

For those companies looking for even more tailored information, we can produce an individual benchmarking report for survey participants on request. This will give more insights as to whether the innovation engine a company uses is meeting its needs and what steps can be taken to improve its innovation excellence performance (see figure 9).

Figure 9. Individual benchmarking report – insights and benefits for your company



Source: Arthur D. Little Innovation Excellence 2009/2010

New Business Innovation

The study also has a special focus on the early phases of innovation and the process of value creation. The study finds that this sort of innovation is usually the first victim of cost-cutting or the clean-up of a project portfolio, particularly during tough economic times. Instead, the average company focuses on innovating within the boundaries of its existing customers and markets. As a result, complexity increases in its product portfolios, which pushes current product platforms to their limits.

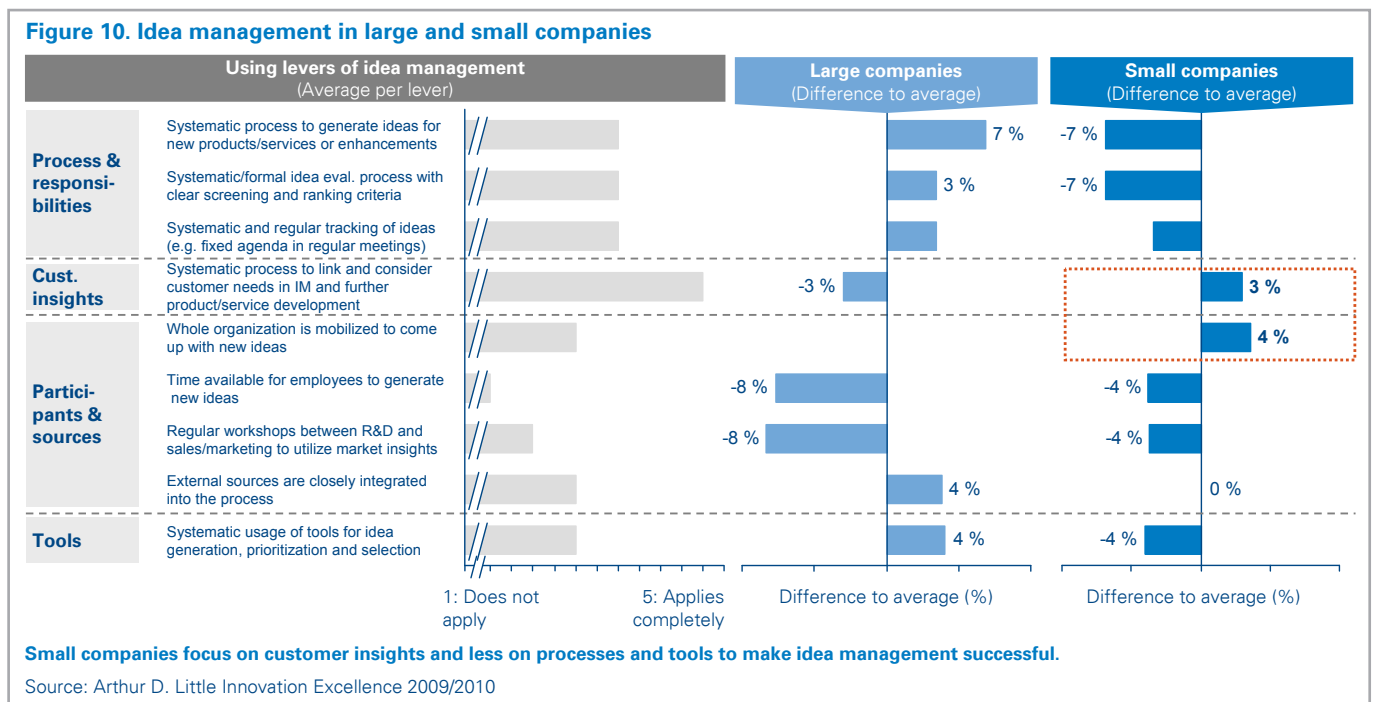
However, the top innovators that participated in this survey are likely to embark on radical innovation, including the development of new businesses, even during a recession. They acknowledge that the post-crisis world will look very different and that it is not likely that they will be selling the same set of products and services with the same success that they were before the recession.

The study finds that the innovators that are most successful when it comes to establishing new business usually separate these projects from the established organization and processes or even set up a whole new organization, governed by new processes, for this specific purpose. Therefore, we recommend that companies carry out new business development in a

separate unit, so that the company’s long-established structures and processes do not impede progress. Possibly achieving integration at a later stage and maintaining good cooperation with the mainstream business is a challenge that still needs to be born in mind.

The study also notes the different ways in which large companies and small companies innovate. Large companies, as well as the top innovators, tend to spread the evaluation and selection of new businesses across several different departments, including top management, the new business team, the research and development department and the corporate strategy department, whereas in small companies, the decision-making lies with top management.

The study finds that large companies and small companies can both learn from each other. Large companies are more likely to succeed if they borrow some of the agility, flexibility and entrepreneurial spirit of small companies, while small companies could emulate the comprehensive approach that large companies have to innovation, encompassing responsibilities, structures, processes and tools (see figure 10).

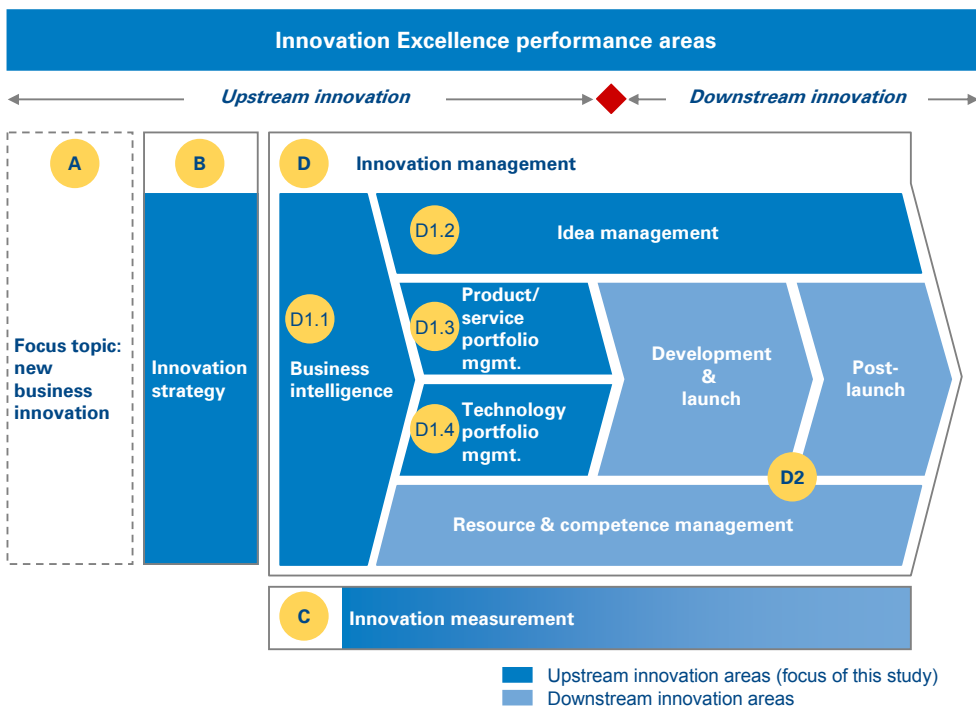


Signposts to Success

Taking all the findings of the study together, we recommend that all companies that want to make a success of innovation and create a well-balanced approach that includes all upstream and downstream activities implement the following (see figure 11):

- Companies should determine their optimal innovation engine based on the industry they belong to, their position in the value chain and the competitive environment.
- Projects to develop new business models or radical innovations should be kept separate from the rest of a company's activities.
- Every company should define ambitious innovation objectives, but these should be grounded in sustained business intelligence and linked to the company's broader innovation strategy.
- Companies should establish an integrated and state-of-the-art innovation process, which encompasses excellent upstream and downstream development.
- Companies should measure and report back on the performance of new services and products and align their employee incentive system with that performance, while being careful not to oversimplify or overcomplicate these metrics.
- Product development should be clearly separated from technology development and companies should establish a transparent portfolio-management system.
- Companies should promote a corporate culture of innovation and ensure that staff have the right innovation skills.

Figure 11. Innovation Excellence performance areas



- Arthur D. Little's Innovation Excellence Model serves as a framework that captures all aspects of successful innovation management
- The model distinguishes between upstream and downstream innovation relative to the major decision point
 - Upstream: Doing the right things, making choices
 - Downstream: Doing things right, implementing choices

Arthur D. Little's Innovation Excellence Model serves as a holistic framework for successful innovation management.

Source: Arthur D. Little Innovation Excellence 2009/2010

Conclusion

This survey reveals a clear correlation between the excellence level of a company's innovation activities and how successful it is at bolstering sales and earnings from new products and services. It also shows that despite the fact that companies consider innovation to be a top strategic priority and measure their progress in this endeavor, many have a lot of room for improvement.

If companies want really to embrace innovation and achieve the same top- and bottom-line growth enjoyed by the world's most innovative companies, they need to stop focusing solely on how to change the way they serve existing customers and markets, which can make existing product portfolios increasingly complex. Instead, they need to start expanding the reach of their existing products and services and investigating completely new business ideas.

This study can help with that process. Companies can learn a lot by benchmarking themselves against the top innovators in their industries, but also from the top innovators across all industries that use the same innovation engine, whether that is idea-driven, research-driven or analysis-driven. Companies looking to improve their efforts will maximize the benefit if they focus on the performance areas that give the top innovators the biggest edge over their competitors.

The world's most innovative companies are ably demonstrating what most companies already know – that reinventing their products and services is critical to top- and bottom-line growth during a recession. This study will help every other company follow in their footsteps.



Originally developed for special applications, LED (Light Emitting Diodes) are now penetrating the large volume markets of LCD backlighting, with some companies even rebranding their LCD screens as LEDTVs! Given their technological and economical advantages (very low energy consumption, long lifetime), LED's will quickly expand into further lighting applications. Companies with the innovation capacity to capitalize on the advantages of LEDs will gain a huge share of the multi-billion-dollar market for home and commercial lighting applications.

Contact

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Arthur D. Little

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