

Innovation for Value

Creating business value through innovation



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Executive summary

Government and industry surveys repeatedly show that some companies are more successful than others at harnessing the power of innovation to protect their existing business and/or generate new business.

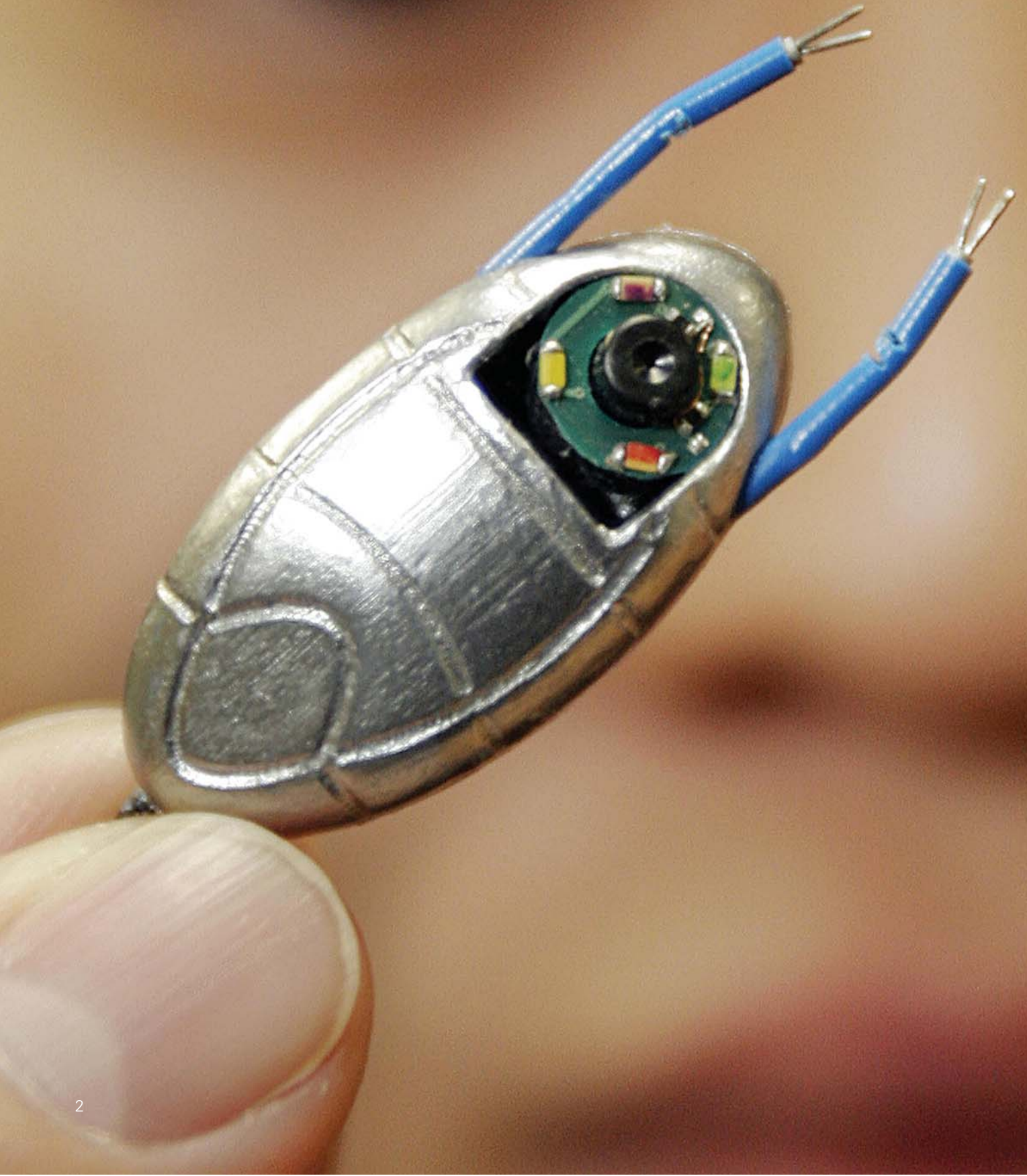
This capability is becoming even more important as we move into a future where economic, social and political factors around the globe are raising expectations, intensifying competition and accelerating change in and around business. However, few companies are currently happy with the return on their innovation efforts.

Arthur D. Little finds that the best in class are those companies focused on the quality of their innovation management, in a way that reflects a clear understanding of the kind of value they are trying to create and the context in which their business actually operates.

Many advisers and practitioners of innovation promote one type of innovation process as “the best” for creating value. In fact, decision makers have three sources of value creation to choose from: top-line growth, bottom-line optimization, and shareholder value. Choosing the “right” kind of value for any company depends on its business strategy. Each source requires quite different approaches to innovation to deliver the desired value.

Once this choice has been made, the key to successful implementation lies in tailoring the management of innovation to suit the context in which the company actually operates. Three kinds of context can usefully be distinguished: sectors where innovation is driven by idea management (e.g. consumer goods); sectors where innovation is largely research driven, with large technical uncertainties and very high costs downstream (e.g. pharmaceuticals); and sectors where innovation requires analytical thinking across several life cycles (assembled product types, e.g. automotive, manufactured goods, software).

In the following, the different kinds of value creation and different operating contexts are discussed, within the framework of Arthur D. Little’s Aspiration-vs.-Concept grid model. Examples are provided of companies that have used this model effectively to improve their innovation management for sustainable business results.



Why doesn't innovation deliver more value?

Innovation makes a real difference. But some companies are much more successful in innovating than their peers. The 2007 Value Added Scoreboard, published by the UK Government's Department of Trade and Industry, examines the performance of the top 750 European companies by value added (defined as sales less cost of bought-in goods and services). The report notes that, in sectors where investment in R&D and capex is important, 76% of companies with above-average investment intensity in these areas also exhibit above-average wealth creation efficiency, on a sustained basis.

Companies that focus on the quality of innovation management greatly improve their business performance compared to companies that see innovation as something best left to chance. This is clearly illustrated by global surveys carried out by Arthur D. Little (e.g. *The Global Innovation Excellence Survey*, 2005), where, for example, top quality innovators have 2.5 times higher sales of new products and get 10 times higher returns on their innovation investments than their peers in the same business area.

Today's global competitive landscape is shifting rapidly and becoming even more challenging. Demand for energy is accelerating, at a time when conventional energy sources are struggling to keep up. Technology convergence and commoditization are blurring the rules of engagement in product markets; the addition of service packages complicates things even further. Financial markets have become more turbulent: fortunes can be made and lost, depending on the quality of innovation.

China's rise continues inexorably, with a growing presence in many countries around the world. Meanwhile, societal expectations show no sign of softening – quite the opposite, and sometimes in apparent conflict with investors' needs. And businesses across a range of sectors – not just energy or pharmaceuticals, but also banking or food – are constrained by a profound scarcity of new young talent in key science and technology disciplines.

Micro medical robot

Japan's Ritsumeikan University researchers unveil a prototype model of the micro medical robot, measuring 1cm in diameter, 2cm in length and weighing only 5-grammes, which enables it to stay and move inside a human body to remove or treat the affected part of disease especially cancer, at the Biwako Kusatsu campus of the university in Kusatsu city, Shiga prefecture near Kyoto 08 March 2007. The surgical micro robot can attach various kind of medical devices such as micro camera, micro manipulators, various sensors and drug delivery injector.

Photo by Getty Images

All these factors and more are pushing innovation, and what it takes to succeed in it, to the top of the corporate agenda. However, few companies are satisfied by the contribution to performance that they are getting from innovation.

In our work with CEOs and business leaders, we meet increasing frustration that their company's innovation efforts are not adequately rewarded. For example, Ford – the top investor in R&D in 2005 – spent \$8 billion, much of which was not reflected in the bottom line. Of the 1000 companies that spend the most on R&D, in a study by Booz Allen Hamilton, fewer than 10% produced significantly better performance per R&D dollar over a sustained period compared with others in their industry.

Where should senior leaders be focusing their attention to gain more competitive advantage and create more value from innovation?

We argue that successful innovation is not about how much you spend, but why and how you spend it. In other words, about knowing **what kind of value** your business is aiming to create, and then managing innovation in the most appropriate way given the **context** in which your business actually operates.

More than one kind of value

It's not as if business leaders don't understand the nature of innovation itself. Most would agree with a vision of successful innovation as the transformation of a company's business vision and strategy into profitable products, services and/or solutions delivered to the customer.

Much of the frustration that we witness around innovation can be traced back to lack of clarity. People are not sufficiently explicit about exactly what kind of value a given company's innovation efforts are intended to generate. This makes it very difficult to be absolutely sure that agreement at a strategic level will actually lead to the correct concrete action or results.

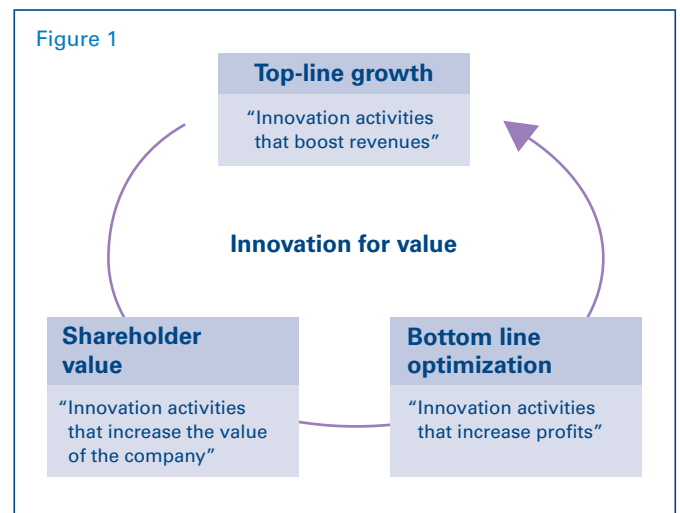
“People are not sufficiently explicit about exactly what kind of value the innovation efforts of a given company are intended to generate.”

In our experience, getting innovation right means making a clear choice between **three sources of value creation**.

Each one requires quite different approaches to be harnessed successfully. (See figure 1).

The right choice of innovation for value creation by a business depends on the business strategy. Two companies in the same sector can make quite different choices.

Consider Volvo and Scania Trucks, for example: two successful companies, competitors in the same industry, with quite different values. Volvo CEO Leif Johansson constantly emphasizes the importance of top-line growth, scale and sustainable earnings. At Scania, CEO Leif Östling stresses the importance of profit, i.e. bottom-line optimization. This helps to explain why Scania has not entered the large but low-margin US market.



Are you aiming for **top-line growth**? Implementing this choice involves a combination of up to four different types of innovation activities. (See figure 2).

Are you aiming for **bottom-line optimization**? This will concentrate effort on activities that increase profit margins and efficiency, while reducing time to market and organizational footprint.

Are you aiming for **enhanced shareholder value**? This choice supports innovation activities that will increase the net present value (NPV) of all future free cash flows, plus the value of non-operating assets, minus future claims.

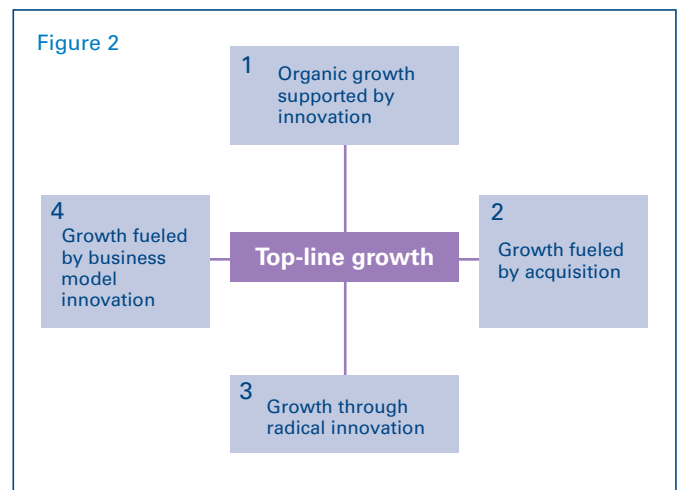
Value from top-line growth

Sustainable top-line growth mainly comes from organic growth, growth by acquisition, radical innovation, and business model innovation. Few companies can hope to achieve high performance over the long term by pursuing only one of these.

Organic growth means optimizing your product and technology portfolio, and introducing new elements to it, with the specific goal of adding to the portfolio's value and the company's top-line performance. Strategic moves can include: redefining the competitive field of play, i.e. the market segmentation; developing a product portfolio strategy and plan that contains products with clear and proven competitive advantages; modularization of products/services; possible restructuring of the organization; and speeding up of project execution so that R&D resources are freed up to work on more new products and services.

Growth fuelled by acquisition is most successful when the merging of companies involves a real merging of product portfolios, processes and organizations (including IT platforms), and development of new metrics to track the success of the new entity. This eliminates redundancies and frees up resources to work on top-line growth.

Growth fuelled by radical innovation calls for a business to have the right processes and organization to generate and develop radical new products/services/solutions, not "more of the same".



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An example of this can be seen in Apple's approach to the iPod and iTunes. The iPod itself might not be considered a radical innovation (although it has some really new functionality). However, in combination with iTunes it allows the user to easily buy, download and listen to individual songs for a reasonable price. This, in comparison with having to buy the complete album on a CD and then copy the songs you want on to your mp3 player, makes the iPod and iTunes a radical innovation.

When seeking to fuel growth through business model innovation, it's vital to improve the company's collective understanding of its market, its customers and value streams. This makes it easier to spot quickly where customers are unhappy or have untapped needs, and what adjustment or transition in the business model will best address the situation.

The success of Zara, the fashion chain, testifies to this approach: parent company Inditex of Spain redefined the business model of clothes retailing into a model with a vertically integrated supply chain, partly using local suppliers. This allows the business to respond to fashion trends much more quickly, and thus develop price-competitive and unique short runs of new clothes within weeks instead of months. At least two benefits result: the short runs get the customer back often, since there will always be new clothes to look at; and the short runs eliminate problems with excess stock.

Value from bottom-line optimization

Bottom-line optimization focuses innovation activities on the bottom line, to improve margins and efficiencies across the enterprise (upstream and downstream), through better organization design and better use of resources.

Upstream innovation benefits from the removal of all low margin products. Building up the product portfolio on a platform/modularization basis then enables the business to maximize the market effect of its portfolio with minimum internal effort.

Downstream innovation for bottom-line gain focuses on maximizing the efficiency of what R&D delivers by minimizing time to market, and also minimizing quality problems and associated costs. A continual focus on cost optimization combined with techniques of lean innovation improves both price-competitiveness and margins.

Organization design and culture are both key levers for bottom-line optimization. The most effective innovations are able to remove duplication of effort, and maximize the productivity of individuals, teams and departments. They achieve this by eliminating the process and behavioral barriers to collaboration and coordination, encouraging cross-disciplinary and cross-functional working.

Maximising the efficiency of IT and other facilities plays a key role in businesses pursuing bottom-line optimization. Efficient systems and facilities are essential to support more efficient processes and drive down costs, in R&D as elsewhere.

Shareholder value

To create the shareholder value that can be built through innovation, a business needs to focus sharply on the elements that drive NPV – sales, cost of goods sold (excluding R&D costs), working capital, maintenance capex, growth capex (R&D investments); on the value of non-operating assets; and on future claims.

“The right choice of innovation for value creation by a business depends on the business strategy.”

Innovation supports these elements in different ways. For example, sales can be increased by optimizing the product portfolio and by introducing new radical product and service offerings. Meanwhile, working capital and maintenance capex can be reduced by increased efficiency of people, facilities and IT systems, and by optimizing the organizational footprint.

The value of non-operating assets can be increased by capitalizing on hidden value within the business, e.g. in the form of intellectual property, technologies, or other innovation-related attributes.

Electronics giant Philips has put this into action wholeheartedly, and has a large annual income stream from selling or licensing intellectual property rights.

After the value choice, it's context that counts

Once you've chosen the kind of value your organization aims to create, the key to success lies in tailoring the way you manage innovation to suit the context in which you actually operate.

The right choices here depend crucially on industry sector, competitive environment, and where the company is positioned in the value chain.

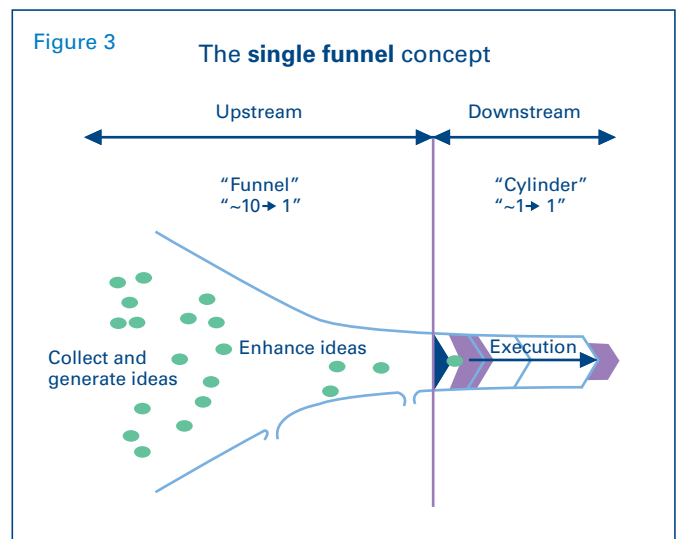
Many practitioners and advisers in innovation recommend one innovation process as "the best" for innovation. However, our experience shows that a company has at least three to choose from, depending on their chosen type of value creation and the context:

- the "single funnel" concept
- the "double funnel" concept
- the "mixed funnel" concept

The single funnel concept is appropriate in sectors where **innovation is largely driven by idea management** (e.g. consumer goods). (See figure 3).

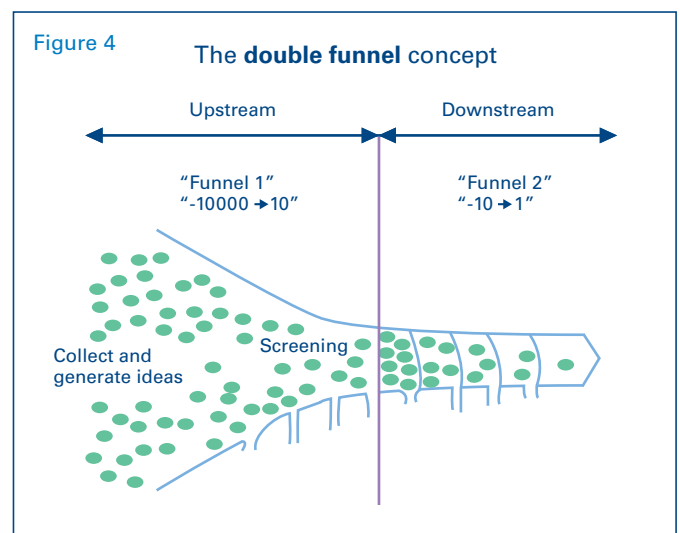
"The right choices here depend crucially on industry sector, competitive environment, and where the company is positioned in the value chain."

The funnel acts in the upstream part of the innovation process to bring a few ideas down to one, with a mindset constantly focused to "pick potential winners." Downstream, successful innovation is development driven with a very strong execution mindset: it's all about "taking product to market."



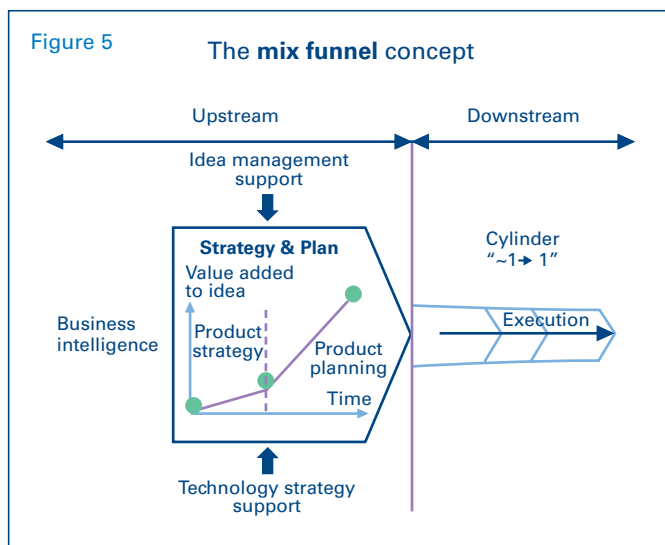
The double funnel concept works where **innovation is largely research driven and downstream innovation has very large technical uncertainties** (e.g. in pharmaceuticals, or oil and gas exploration). (See figure 4).

In the upstream phases of the innovation process in pharmaceutical development, tens of thousands of ideas are reduced to a few, with the emphasis on picking potential winners.



The second funnel deals with the downstream phases of innovation, e.g. bringing a few selected candidate drugs to market; however, due to the high attrition rate, very few will make it to market. At this stage, the most effective mindset is “kill as many candidate products as soon as possible, to avoid unnecessary development and manufacturing investment costs.”

The mixed funnel concept applies best to assembled product types, where **innovation requires analytical thinking across several life cycles** (e.g. automotive, telecom equipment, manufactured goods, medical technologies, or software companies). (See figure 5).



Upstream activities are driven by product strategy and planning that enable enhanced ideas and knowledge to transition into complete product ideas in the right context. The mindset here is more complex than in other cases: “pick and develop winning ideas; plan and manage a portfolio of products.”

Downstream, all the innovation effort is focused on taking the product to market, faster and more profitably than anyone else.

In our experience, the most successful innovators of all are those that succeed in achieving the right balance: between the requirements of their context, and the specific needs and development level of the business unit or company. In addition, this balancing act includes aspects such as:

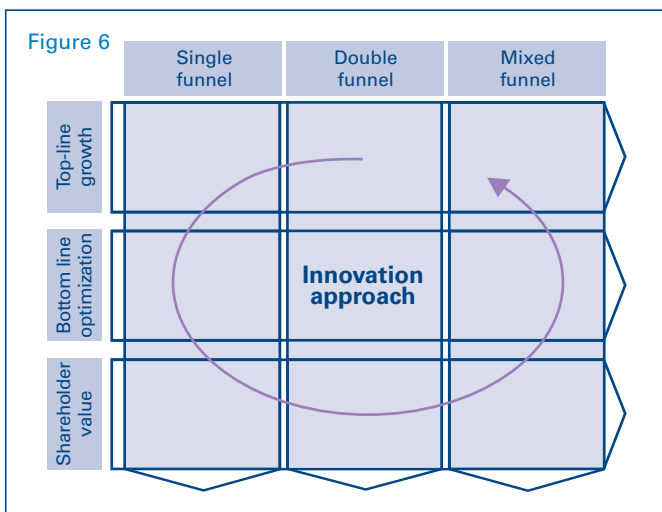
- Getting the right balance of internally driven innovation and collaborative innovation with partners.
- Balancing innovation at business unit level and innovation at corporate level.
- Balancing innovation in existing businesses with the creation of completely new businesses.
- Balancing short, medium and long term innovation investments.
- Balancing the global vs. the local innovation activities.
- Balancing technology push and market pull.

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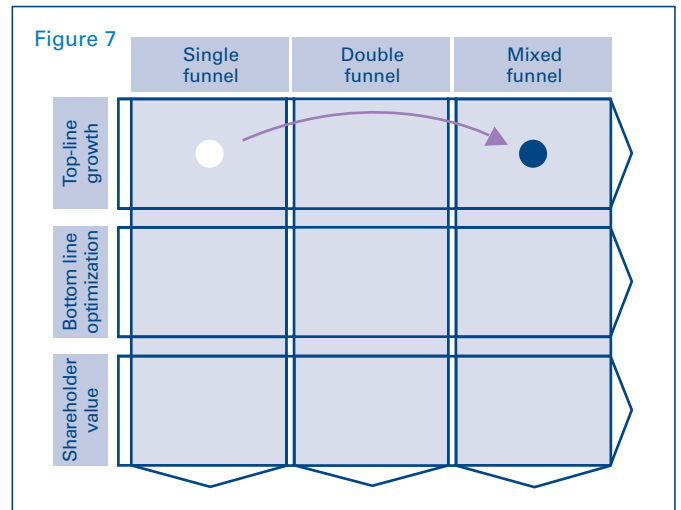
Finding a way forward

Is your company an innovation leader? Or do you sense potential for improvement in your innovation performance?

A useful guide to start tapping in to that potential is provided by Arthur D. Little's Aspiration-vs.-Concept matrix, on which each company or business unit can be located. As we have indicated above, Aspiration is a matter of choice (i.e. top-line growth, bottom-line aspiration, or shareholder value), whereas Concept is defined by the context in which the company competes. This matrix has been a powerful aid to companies across a wide spectrum. (See figure 6).



In one case, we helped a world leader in milking systems improve the effectiveness of its R&D investments. Given that the company makes complex assembled products, it was clearly in a mixed funnel situation. Yet it behaved as if it were in a single funnel environment: all ideas were screened and evaluated; the most promising ones were selected to be pushed over to the downstream for development and distribution. The reality of the situation was that some ideas prioritized for development could not be executed because other elements needed had not been prioritized and hence not put forward for development. The business performance suffered as a result of confusion, constantly changing investment decisions, long delays, quality problems and budget overruns. (See figure 7).



Arthur D. Little helped the company implement a mixed funnel innovation management approach 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.

“We helped the company to design a new innovation process that accesses ideas from the widest possible community, judges them against opportunities across the company’s global markets and operations, and enables decision makers to choose the best for the business”

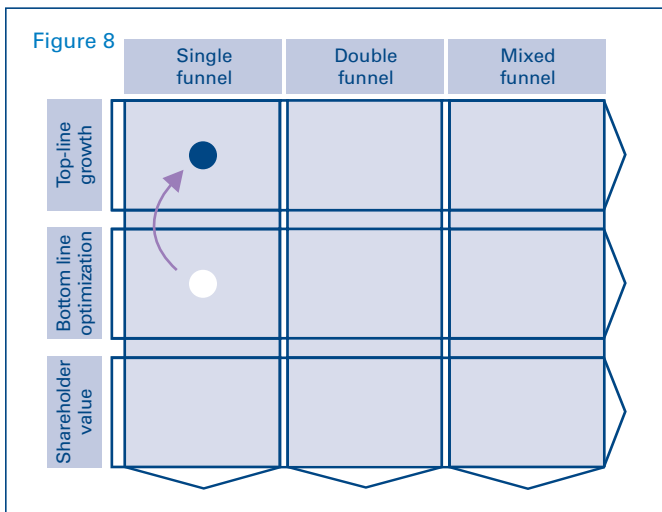
With a global bakery products manufacturer, we worked to develop an innovation process to support a change in strategy. The company had been very successful in a cut-throat margin-sensitive industry because it excels at controlling operating costs and innovates continuously in product and process development to control the bottom line. Coupled with skills in judicious acquisition and integration of competitors, these attributes have underpinned decades of successful growth.

But the rules of the game in the bakery products industry are changing. In a new world of cross-category initiatives by global players, our client decided to focus on top-line growth through innovation. This entails a revision of the product and manufacturing strategies, and therefore changes to the criteria used for prioritizing innovation initiatives. (See figure 8).

We helped the company to design a new innovation process that accesses ideas from the widest possible community, judges them against opportunities across the company's global markets and operations, and enables decision makers to choose the best for the business. The company can then implement the idea first where it will have the most impact, and subsequently roll it out more widely as appropriate.

Essentially, this company moved on the grid from bottom-line optimization to top-line growth, still within a single funnel model. The new focus is on speed and reducing the time to market – so we helped optimize the new innovation process to achieve this.

The company has embraced the mindset of a fast-moving consumer goods company. Implementing this shift required not only a new vision and strategy, but also changes in processes and tools, underpinned by a profound change in organizational culture. The senior leadership is fully committed to the transition, convinced it is the key to success in the company's rapidly changing marketplace.



Conclusion

Innovation for value, i.e. getting the most value out of your innovation activities, implies focusing on the quality of innovation management, in a way that reflects a clear understanding of the kind of value you are trying to create and the context in which your business actually operates.

Are your innovation activities set up to get the right value for your company? Are you measuring how well you are executing them?

Is your organization behaving as it should, given the context in which you compete?

If your innovation organization is targeting the right value, and behaving according to the competitive context, are you convinced you are getting the maximum innovation performance out of your organization?

To find out more about innovation for value, please visit www.adl.com/i4v or contact your local Arthur D. Little office.

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Crash test dummies go to class

A room which looks like a classroom is crowded with crash test dummies waiting their turn at an automobile safety research facility. Wolfsburg, Germany.

Arthur D. Little

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Our Technology and Innovation Management practice supports companies across the world to create value from their innovation activities. Our work is rooted in the origins of the firm. As early as 1911 we helped General Motors to organize its first R&D lab. Since then we have helped numerous companies to achieve more effective innovation and we have published a number of books and articles on innovation management, including *Third Generation R&D* and *Product Juggernauts*.

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