

Smart Innovation – Innovate to seize the opportunity in complexity

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The world of business is gripped by the quest for innovation, but innovation can lead to ever-greater complexity. Companies striving to stay ahead of their competitors thus need to become Smart Innovators by developing the ability to spot the opportunity in complexity. This article explains how companies, by developing this ability, can gain access to the best of both worlds.

We live in a world of ever-increasing complexity: in the industry structures we occupy, the alliances we form and compete with, and the products and services we develop and deliver to ever-smaller niches. This complexity is driven by the search for commercial advantage, for better-differentiated ways to deliver value, or by customers' demands for customisation.

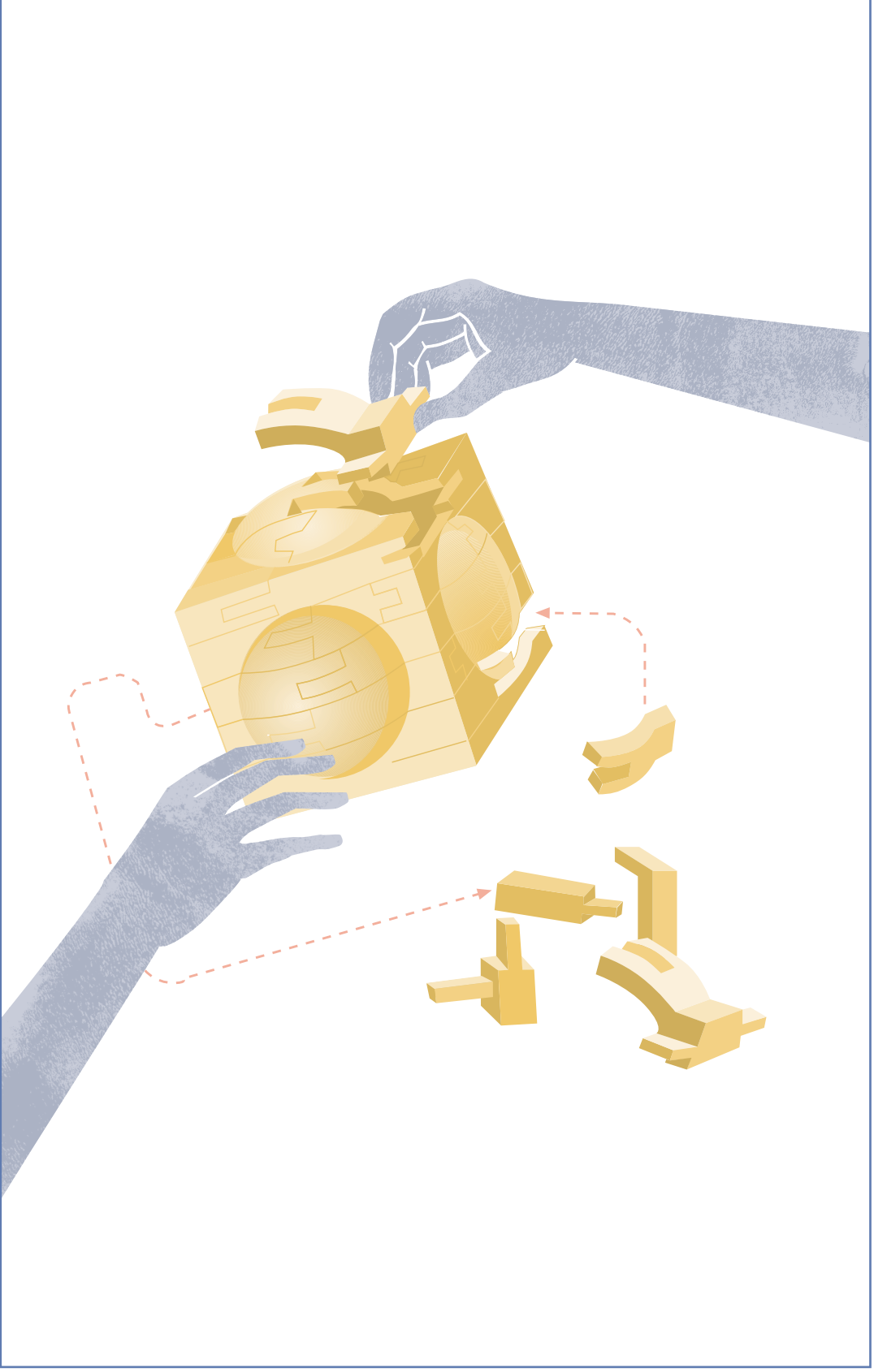
Some companies thrive on this complexity, innovating continuously to resolve or marshal complexity to deliver extraordinary value to their customers and shareholders. Some high-impact companies even re-shape their industries by finding and implementing ways to marshal complexity in completely new ways.

We call this capacity to innovate in order to exploit the opportunities associated with complexity "Smart Innovation". Smart Innovators excel, firstly in understanding the complexity in their environment and operations and secondly in purposefully innovating to resolve or marshal the prevailing complexity.

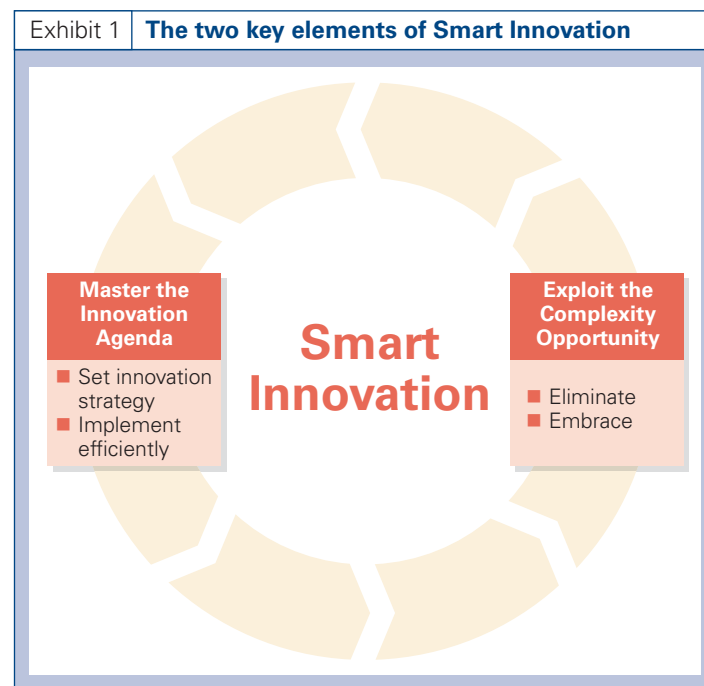
We at Arthur D. Little have embarked on a journey. We have set out to understand Smart Innovation and Smart Innovators. We aim to identify the patterns of success and to develop the tools that will enable our clients to transform themselves into Smart Innovators. In this article we describe the starting point for this journey, while other articles in this edition of Prism highlight some early insights.

Smart Innovation is the capacity to spot the opportunity in complexity, then innovate to achieve a commercial advantage. The best proponents display superb insight to identify opportunities early and then manage complexity efficiently to derive a competitive edge. They target their innovation precisely and then implement efficiently.

We see Smart Innovation displayed at all levels of business, from the strategic, in directing and shaping enter-



prises, to the tactical, in product or service development, delivery and support. The very best Smart Innovation aligns the strategic and tactical elements in such a way as to be difficult to emulate, and achieves an integrated efficiency that is hard to beat. We believe there are two key elements to Smart Innovation: the 'complexity opportunity' and the 'innovation agenda'.



The complexity opportunity: how to seize and maximise the opportunity from either eliminating or embracing complexity.

The complexity opportunity

Most organisations see only the threat in complexity – the proliferation of products, the sprawl of a supply base, multiple manufacturing sites bickering for resources, confusing portfolios of businesses, accompanied by a gradual loss of clarity of objectives and purpose. These companies express the conundrum as 'how to simplify without sacrificing revenue and profit'. We believe there is an alternative formulation – 'how to seize and maximise the opportunity from either eliminating or embracing complexity'.

Let's consider elimination first, not because it is necessarily the better option, but because it is the more common.

Certainly there are opportunities from simplification and complexity reduction, through careful rationalisation at all levels. This might be by focusing the business as a whole and disposing of peripheral business units, or by forming supply chain partnerships that allow concentration on just the areas where you can add differentiated value.

Product rationalisation is the most commonly pursued simplification opportunity. Perhaps the most spectacular reduction in brand complexity has been Unilever's move to 400 from over 1,600. Procter & Gamble also started a major initiative in the late 1990s to reduce the complexity of its product ranges, concerned by the danger of confusing the consumer. The mantra is to use customer valuation tools to focus on and choose the profitable niches – and cut the rest. Try not to worry too much about the nagging concern that a new entrant with a disruptive technology or innovation will start in those niches you have abandoned.

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Many other companies have pursued cost savings from rationalising supply chains, manufacturing facilities and operations, spares and support activities to the point where there's not much fat left. For these, embracing complexity, as opposed to eliminating it, may open up great opportunities for both revenue and profit. Starting with the industry as a whole, are there parts of your industry characterised by profit-sapping complexity and confusion? Is there a role for somebody to step in and change the game? Does your business have parts of a complex whole, so that adding a few more bits would enable you to combine them in different ways and offer more value? Could you make your customers' life simpler by taking on more complexity yourself – and how much might that be worth?

Norwich Union, a financial services company that is part of the Aviva Group, purchased Oneswoop, a telephone and on-line car sales operation. Bundling this with their finance and insurance offerings gives impetus to their strategy of becoming a one-stop shop for motorists.

Another example of simplifying life for customers by bundling complex systems and services is 'power by the

hour'. Emerging first in the provision of locomotives to railways and aero engines to airlines, the concept is simple – the supplier is responsible for all aspects of support, services, spares, maintenance, overhaul and the underpinning logistics. You the customer pay simply for an agreed level of power over an agreed number of hours. This concept has now been adopted by applications as diverse as high-powered computing and forklift trucks.

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While there is indisputably a drive for products and services that are easier to adopt and use, there is a continuing demand for more (or better-chosen) functionality. Can you add the complexity of that sought-after functionality while simultaneously simplifying the customer touch points? Philips' new positioning "sense and simplicity" is all about offering customers the functions they want in a way that is easy to use.

Creating alliances increases complexity, but may offer access to unserved markets. In a recent case for a leading financial services group in Venezuela, a team from Arthur D. Little immersed themselves in the lives of several low-income families to understand their real needs from not just the financial infrastructure and the myriad informal systems established among those outside the banking system but also from the widest potential provision of financial supporting services. Armed with this insight the team explored opportunities for collaboration between our client in financial services, government and non-government organisations to create new products and services that overcome the natural suspicion of a disenfranchised community. From this more complex array of co-ordinated providers we crafted exciting new service opportunities for a win-win outcome.

Looking back into your supply, service and support chain, should you form an alliance that, although making your life a bit more complicated, adds more value than cost? If your business lies in the manufacturing, supply and logistics area, then how much complexity should you embrace? Flextronics' answer is 'all of it', including detail design. Kodak has just announced the transfer of the manufacture of its digital cameras to Flextronics, which will also take on most of Kodak's Digital Product Centre in

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Japan. Flextronics is therefore continuing its extension from its core business of electronics manufacturing services. The move started when Flextronics licensed ARM's chip designs to allow it to offer higher value to customers by designing and supplying modules rather than just focusing on manufacture. Furthermore, as a global manufacturer with a diversity of manufacturing sites and processes, Flextronics is able to innovate faster than many of its customers, then transfer such innovation across its global operations. Flextronics acknowledges the complexity of its operations, then leverages it globally to do better than companies working on a more regional basis. Extending this philosophy to design is the next logical step.

If we consider the other imperative in today's business, that of innovation, we can also see opportunities in complexity there. By accessing a wider and more diverse set of innovation resources outside the traditional company boundaries you may be able to boost your innovation performance. More complex, certainly, but so much more effective.

The innovation agenda

In short, we believe that Smart Innovators spot and seize the complexity opportunity. But Smart Innovators are also masters of innovation. They understand the alternative paths open to them in their industry, they set an innovation strategy that supports their business ambitions and then they execute superbly.

The innovation agenda clarifies for them the full set of stakeholders they need to satisfy, covering not just their business aspirations but also identifying their stance on corporate citizenship and sustainability. Smart Innovators are clear about how innovative they need to be and they understand the trade-offs in choosing between innovation leadership, fast followership and later adoption. They display the adaptability of the chameleon and its ability to combine behaviours into the ideal for their circumstances, as we explained in the article The Chameleon Innovator in the previous issue of Prism (p.p. 8-21). They understand when to be radical and when to be incremental, and why.

Most importantly, they are explicit about where innovation gives them the most leverage, be it in business model, in product or service, or in delivery process.

Innovation can be derived from many sources, be it the internal expertise with a deep knowledge of the business, the products and the processes, or perhaps the wider networks of resources celebrated in 'open innovation'. Smart Innovators clarify what they need from which source and then build the capability to integrate the best contributions from all their chosen sources into effective innovation.

Procter & Gamble are in the vanguard of open innovation. Using 'connect + develop' instead of 'R&D', they access the capabilities of massive resources outside the compa-

ny. They use a number of mechanisms to manage the complexity of the networks and the sheer diversity of opportunities available to them. Proprietary networks are managed alongside open networks. With great clarity about screening and selection priorities, P&G are driving up their rate of innovation while reducing the cost. They are aligning their internal processes with an organisational culture shift to allow them to make best use of open innovation. More complex, certainly, but also much higher value.

Sometimes the opportunity for innovation arises when two pools of excellence merge, as in a recent case that we conducted for a global Scandinavia-based manufacturer of capital goods. Having acquired a significant competi-

Amazon: Smart Innovation at work

Amazon is often held up as an example of good practice. But let's look again from the perspective of Smart Innovation across many aspects of its business. Amazon is a fascinating example of complexity harnessed to a powerful customer interface that delivers value to customers, partners and shareholders alike. Let's start with a most fundamental question: is Amazon a retailer? Well, yes, but it is also a marketplace. Amazon allows competitors (e.g. other bookshops) to access customers through its web-interface. By doing so Amazon creates a marketplace attractive to a wider community, offering wider but simplified choice to customers. The customers' reviews enable exchange of market information and, indeed, Amazon remains 'above' such debate. It doesn't push product, it offers alternatives. So, viewed as a Smart Innovator, Amazon positioned itself as a new entity in its industry by embracing the complexity of allowing others to sell through its portal, combining the role of retailer and market.

It would have been easy for Amazon to stick

to selling books, where it all started. Instead they have diversified, building on their brand value and the power of their portal, database, search engine and supply chain to deliver a whole range of products. But note that they've chosen products that can be bought according to specification. They carefully limit their exposure in products that might vary one from another or that customers might need to return because they don't fit (either literally or with expectations). So the Smart Innovator chooses how much complexity to handle.

Product range? Not only do they offer Amazon's stock, but also their partner suppliers', tied together through an effective and efficient search engine and database tools of sophistication and high performance. Behind the scenes their processes assure prompt delivery, even to the extent of organising companies that supply in parallel with Amazon, for example out-of-print books that can be ordered and delivered alongside DVDs and gardening equipment.

The supporting services offer complex func-

tionality, like the recommendations of products based on past purchases, organised into a wish-list available to family and friends for choosing gifts. Despite the complexity, this Smart Innovator maintains a simple and consistent customer touch point. Payment and order-tracking services then enrol other suppliers into the Amazon offer.

Note also the barriers to imitation. By moving early and allying with other merchants Amazon have reached critical mass where they attract enough customers to make them an attractive partner for other retailers. By combining the retailers' offers they have made themselves a simple one-stop-shop for customers. With wish-lists, recommendations and simple pack-and-pay processes they maintain efficiency for their customers. Their ambition is the virtuous circle of more customers and more suppliers, with Amazon gaining a margin on all transactions.

Their innovation agenda is to be a leader, to experiment continuously via many fast-feedback tests of concepts with real customers,

all targeted on being the most customer-centric organisation in the world. This agenda is clearly articulated by Jeff Bezos to audiences both inside and outside the company.

Delivering on this agenda is Amazon's 'service-oriented architecture', which manages the scalability of their increasingly complex product range and their increasing merchant and customer base, and provides a software environment within which they can continue to innovate. Amazon Web Services enables them to capitalise on contributions from other developers. Indeed, they have innovated in their development management processes to keep the process dynamic. So Amazon use an innovation engine that draws upon a complex range of influences, harnessed to their core ambition.

Hence Amazon exploit complexity across their business, from their core strategy, their product range and background processes all the way to how they innovate – Smart Innovation across the organisation.

tor, our client needed to extract the best coverage across the world of the best products that the newly merged portfolio had to offer. We created a fundamentally new structure of portfolio modules and platforms that resolved the complexity from the merger and, more importantly, provided a framework for future innovation to mesh seamlessly with past product success. This enabled a refinement of business strategy, opening yet further opportunities in business model innovation.

Excellent innovators set a clear innovation agenda that proclaims their objectives, targets, methods and measures for their innovation activity. Smart Innovators target their agenda on the complexity opportunity, and then focus on the efficiency of their implementation to deliver extraordinary results.

Smart Innovation as an overarching strategy

At the heart of Smart Innovation is the capacity to simultaneously master the management of complexity and the management of innovation. This is not to say that the most innovative companies in the most complex environments are 'smarter'. Instead we see a particular skill in choosing, for a given business environment, the requisite complexity and mastering that, coupled with the optimum choice of innovation strategy driving masterful implementation. As Einstein said, 'Make things as simple as possible, but no simpler.'

In the examples above we have shown how companies have demonstrated Smart Innovation in different domains. For example, Norwich Union's strategic shift from being an insurance company to embracing the complexity of car purchase, finance and insurance positions them to offer their customers a one-stop shop. Philips' focus on 'sense and simplicity' shows the new trend to product technology that offers capability without confusion. Flextronics and its competitors extend their operations to embrace more of a complex supply chain – from all of integrated manufacture, logistics and supply now to design. Kodak responds to this opportunity for somebody else to handle the complexity by handing off digital camera manufacture to Flextronics. P&G's decision to open up their innovation

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to the widest possible participation gives them a complex network to manage, in exchange for truly global resources and insights and thus faster growth.

Harder to find are companies that have demonstrated Smart Innovation in an integrated way, across several aspects of their business, or in a coherent way through their value chain. One such is Tetra Pak. Most people see the Tetra Pak package as the product. Instead Tetra Pak have addressed complexity throughout the supply and distribution system, all the way to the supermarket shelf. Tetra Pak's founder, Ruben Rausing, sought a rational container shape and structure, coupled with an efficient filling system that would then contribute to simplification throughout the logistics chain. The Tetra packages we see today, coupled with Tetra Pak's filling and processing equipment, make life easier for users all the way through the supply chain. The focus on aseptic packaging and filling allows less dependency on refrigeration. Tetra Pak is also exploring how best to approach the recycling of their containers, so completing the loop.

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How would you react to a company that changes its product range about twenty times a year? Each time new products will be designed and manufactured and sold anew. When those products are sold out, that's it. There are no reruns of a proven product, no capitalising on success. Instead they embrace the complexity of starting all over again.

Zara, the fashion garment company, does just this. The key to their attraction to customers is the explicit exclusivity that comes from short product runs. A challenge to clothing retailers is how to encourage the customer to return frequently for another sales opportunity. Zara's model embeds this at the core of their business model, because with the next product range different to the last repeat visits are ensured. Zara's designers, all in-house, produce about 40,000 designs a year, of which 10,000 are used. Like Benetton, Zara makes use of dyeing late in their process to allow rapid colour changes. Their supply chain is extremely responsive, delivering product to its stores worldwide fifteen days after they are designed. By choosing relatively smaller suppliers of textiles than their

competitors Zara also adds to their air of fashionability – and the complexity they manage. Zara demonstrate a strategy, a market position and a supply chain that make a virtue of renewal, manage the ensuing complexity and have achieved a unique position in their industry.

Amazon continues to be an example beloved of enthusiasts for e-commerce. Amazon's innovations, which increase the complexity of their business in strategy, product range and value chain – while still providing the customer with a simple and consistent interface – are the mark of a Smart Innovator with a consistent mastery of innovation and complexity (see box on page 14).

We have worked with various clients on questions of choosing the appropriate level of size and complexity in their business, and helped them to design innovation paths appropriate to their selected portfolio of products and innovation stance. For example, we worked with a Scandinavian automotive tier-one supplier to address their optimal size and complexity for success within their industry given their resources and history. By making the issue explicit it becomes possible to debate issues of strategy and ambition, customer proposition and leverage and the supporting business model. This top-down assessment of the complexity opportunity enables a co-ordinated approach to developing the business. Our work with them on product portfolios to give them the best match of innovation and complexity to meet customers' needs was an early example of Smart Innovation at work.

The journey towards Smart Innovation

The ideas behind Smart Innovation offer new perspectives and highlight new opportunities for companies across many industries and sectors. Smart Innovation is an overarching concept, within which we are identifying insights in all aspects of business from the strategic to the tactical. Other articles in this edition of Prism demonstrate how Smart Innovators can claim the strategic high ground.

We also believe that measurement is a critical part of Smart Innovation – to quantify potential and to measure progress along the path to excellence. Therefore we have

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developed tools to quantify both the complexity mastery and innovation management elements. We plan to report on this work in later issues of Prism.

Smart Innovation is the capacity to spot the opportunity in complexity, then innovate to seize that opportunity and achieve extraordinary business performance. We encourage you to embark on this promising journey.

The author wishes to acknowledge the contributions from Charles Boulton and Rick Eagar

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... has just completed his four year term as Global Leader and Chief Executive Officer of Arthur D. Little during which the firm has been pioneering development around Smart Innovation. Richard is now returning to Arthur D. Little's, Cambridge, UK office, from where he will promote international development of the firm's Sustainability, Environment and Risk consulting services. E-mail: clarke.richard@adlittle.com