

THE MOST INNOVATIVE COMPANIES 2015

FOUR FACTORS THAT DIFFERENTIATE
LEADERS



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FOUR FACTORS THAT DIFFERENTIATE LEADERS

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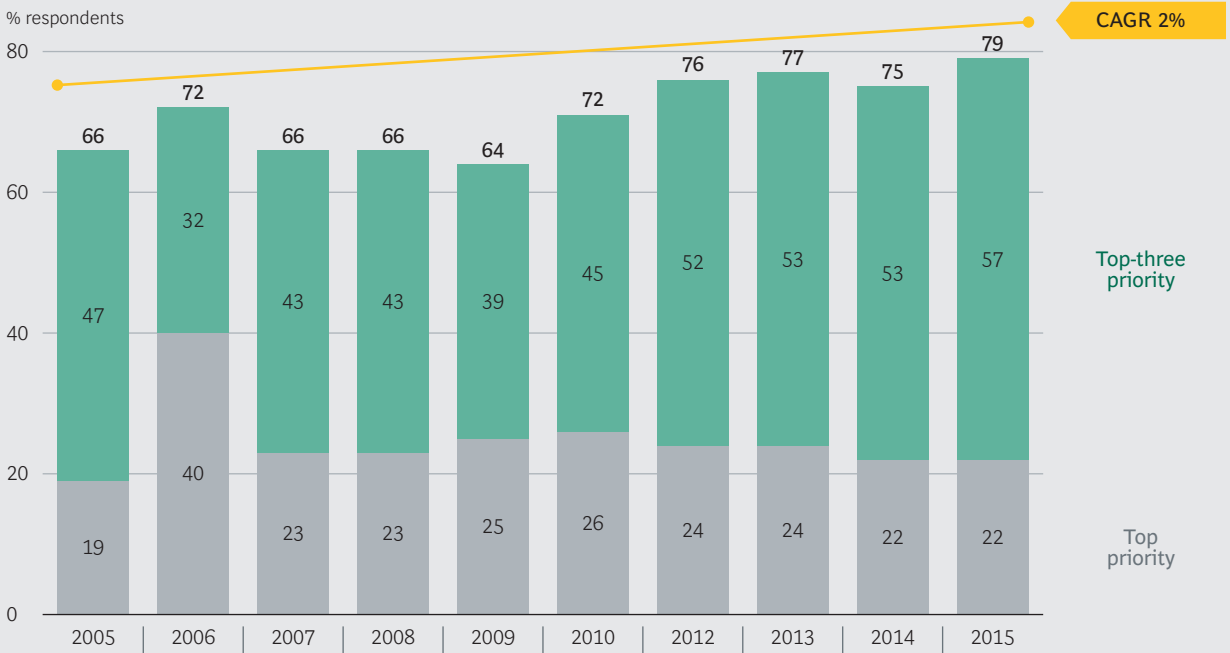
INNOVATION IN 2015

INNOVATION CONTINUES TO RISE in importance. In The Boston Consulting Group's tenth annual global survey of the state of innovation, 79% of respondents ranked innovation as either the top-most priority or a top-three priority at their company, the highest percentage since we began asking the

question in 2005, when 66% said innovation was their top or among their three top priorities. (See Exhibit 1.) At the same time, science and technology continue to be seen as increasingly important underpinnings of innovation, enabling four attributes that many executives identify as critical: an

EXHIBIT 1 | Innovation Remains at the Top of Most Companies' Agendas

WHERE DOES INNOVATION/PRODUCT DEVELOPMENT RANK AMONG YOUR COMPANY'S TOP STRATEGIC PRIORITIES?



Source: BCG Global Innovation Survey, 2005–2015.

Note: BCG did not conduct a survey in 2011. Because of rounding, not all numbers add up to the totals shown.

emphasis on speed, well-run (and very often lean) R&D processes, the use of technological platforms, and the systematic exploration of adjacent markets.

The importance of these four attributes—and of science and technology in general—is not new. Looking back over our surveys of the last ten years, we see that the companies that made the list of the 50 most innovative companies in at least nine out of ten of them—Apple, Google, Microsoft, Samsung, Toyota, BMW, Amazon, IBM, Hewlett-Packard, General Electric, Cisco Systems, Nike, Sony, Intel, Procter & Gamble, and Walmart—are all strongly associated with many of those capabilities.

The 50 Most Innovative Companies

The importance of these attributes can also be seen in this year’s list. (See Exhibit 2.) Apple and Google again hold the top two spots. Tesla Motors, which has been moving up the list at the speed of one of its Model S sedans, reached number three. Fast-tech companies, tech-savvy automakers, and a company that exemplifies scientific expertise combined

with lean R&D in the pharmaceutical industry round out the top ten.

Given the strong impact of technological developments such as mobile technology and social media in the last decade, one might expect technology companies to have shoved aside their more traditional counterparts. Yet we still see plenty of traditional companies on the list. They, too, have used technological advances to their own innovative ends. Five of the top ten companies in 2015 are nontech companies (although one, Tesla Motors, bridges a couple of sectors)—the same number as in our first survey ten years ago. On the larger list of the 50 most innovative companies, 38 (76%) are nontech companies.

The top 50 list is a global group: 29 companies from the US, 11 from Europe, and 10 from Asia. Emerging markets also make their presence felt: there are three companies from China and one from India.

High-Impact Factors

The four attributes that fuel innovation are interrelated, of course, so it’s hard to examine

EXHIBIT 2 | 2015 Most Innovative Companies

1. Apple	18. The Walt Disney Company	35. Volkswagen
2. Google	19. Marriott International	36. Visa
3. Tesla Motors	20. Johnson & Johnson	37. DuPont
4. Microsoft Corp.	21. Netflix	38. Hitachi
5. Samsung Group	22. AXA	39. Roche
6. Toyota	23. Hewlett-Packard	40. 3M
7. BMW	24. Amgen	41. NEC
8. Gilead Sciences	25. Allianz	42. Medtronic
9. Amazon	26. Tata Motors	43. JPMorgan Chase
10. Daimler	27. General Electric	44. Pfizer
11. Bayer	28. Facebook	45. Huawei
12. Tencent	29. BASF	46. Nike
13. IBM	30. Siemens	47. BT Group
14. SoftBank	31. Cisco Systems	48. MasterCard
15. Fast Retailing	32. Dow Chemical Company	49. Salesforce.com
16. Yahoo!	33. Renault	50. Lenovo
17. Biogen	34. Fidelity Investments	

Source: BCG Global Innovation Survey, 2015.

one in any depth without running into another. Speed has long been a priority and is one of the major sources of differentiation for true breakthrough innovators, as we discussed last year. In fact, the percentage of respondents in 2015 citing the importance of quickly adopting new technologies jumped 22% over 2014.

Lean R&D processes have a major effect on speed—as well as on multiple other areas. No surprise, then, that the percentage of respondents citing improvements in operating processes as crucial to innovation increased this year. Lean methodologies that were originally developed for manufacturing are now being applied in a sophisticated manner to R&D and new-product development, and they are having a big and growing impact in such industries as industrial goods, health care, and high tech.

In most companies, technology used to live in its own silo—the IT department. Today, digital, mobile, big data, and other technologies are used to support and enable innovation across the organization, from new-product development to manufacturing to go-to-market strategies in multiple industries.

Finally, many companies facing slow growth in their core businesses are looking to expand into adjacent markets. To do so, they frequently leverage existing capabilities in lean, speed, and technology platforms to enable innovations, whether next door or further afield.

“An Innovation Agenda”

Innovation is one of a handful of growth strategies that companies employ. At a few companies, it's the primary strategy. One of these is Gilead Sciences, which joins the 50 most innovative companies list this year at number eight. Gilead has developed a cure for one major disease, hepatitis C (HCV), while significantly advancing treatment of another, HIV infection.

Gilead exemplifies the attributes we examine in this year's report. As its annual sales approach \$30 billion, the company is determined to keep its innovation processes effi-

cient and not slow down. Gilead has shown it is not afraid to pursue adjacent openings when it sees a high-value opportunity—as evidenced by its shift into HCV. John Milligan, Gilead's president and COO, put it this way in an interview with BCG: “I don't think of Gilead as having a growth agenda; we have an innovation agenda—we spend a lot of time thinking about how to make better medicines for tomorrow, and that innovation then drives growth.”

Speed is one of the major sources of differentiation for true breakthrough innovators.

Gilead's innovative capabilities stem from a management team that combines exceptionally deep scientific and technical expertise in its area of focus with an equally deep knowledge of market needs. The result is a remarkable ability to identify major potential advances in treating serious illnesses and the conviction to pursue them, regardless of whether the essential science has been developed internally or externally. Gilead couples scientific rigor with strong senior-management cohesion and the courage to pursue high-risk, high-return initiatives. The company's 2011 acquisition of Pharmasset for \$11 billion (almost one-third of Gilead's market value at the time) was pivotal in the development of Sovaldi and Harvoni, treatments for hepatitis C that cure more than nine out of ten patients with the most common type of the disease, leaving them with no detectable virus. At the same time, the company has pioneered innovative R&D and manufacturing models, such as licensing agreements with India-based manufacturers of generic drugs, to expand access to its drugs in developing markets.

Modifying the Methodology

Over the years, we have from time to time improved our survey methodology. This year, we made two modifications. One is predicated on the belief that the experts in an industry often spot an innovative company before

it becomes widely known. So in addition to asking about innovation generally, this year we also asked our 1,500 survey respondents to rank innovators within their own industries. We assigned this “internal” ranking an overall weighting of 30%, the same given to all other industry responses. The second change was to increase the weighting of three-year TSR to 40% in order to better balance objective and subjective measures. The result, as we expected, is a more diverse list that includes more companies that don’t market widely to the public but are nevertheless seen as highly innovative within their industries—and that are reaping the rewards of this capability.

INNOVATION remains a top priority, and it doesn’t get any easier. Below we look in depth at each of the four attributes that can make innovation more successful. Some companies are already good at some; some are better at others. Taken together, these four capabilities provide a series of practical steps that any company can take if it wants to raise its innovation game.

THE RISING NEED FOR INNOVATION SPEED

“**S**IZE CAN GIVE YOU scale, but for innovation, speed is more critical,” says Rakesh Kapoor, CEO of Reckitt Benckiser, the breakthrough-innovator consumer products company that BCG profiled last year. Speed has long been seen as an important attribute of strong innovators. The results of our 2015 survey, as well as our recent work with clients, indicate that its importance is rising fast. (See Exhibit 3.) Speed enables companies to catch consumer trends as they emerge, leave competitors flat-footed, and even drive costs down and quality up.

In this year’s survey, overly long development times were the most-cited obstacle to generating returns on innovation and product development; 42% of global innovation executives said development times are too long—a 6 percentage point increase over 2014. (See Exhibit 4.) The same frustration is shared by strong, average, and weak innovators in roughly equal measure, but there the similarities end.

Fast innovators are much more likely to also be strong innovators—42% compared with less than 10% of slow innovators. Fast innovators are more disruptive—27% versus 1.5%. They get new products to market quickly and generate more sales from them (at least 30% of revenue). This is true for 35% of fast innovators but for only 11% of slower ones.

One example is fashion retailer Zara, part of the Inditex Group, the world’s largest apparel seller. Zara lives by speed. The typical fashion retailer is organized around individual functions to gain scale and cost advantages; as a result, product development, manufacturing, and delivery take months. Zara gets new styles to market in two to four weeks. To do so, it uses a cross-functional, integrated organization to accelerate decision-making and eliminate delays in functional handoffs. Design, procurement, manufacturing, and delivery are all organized into teams that work closely with store managers to quicken responsiveness to shifting market trends. Team performance is assessed on the basis of common metrics and incentives that focus on go-to-market speed and rapid lead times. As the former CEO of Inditex, José Maria Castellano, puts it, “This business is all about reducing response time. In fashion, stock is like food. It goes bad quick.”

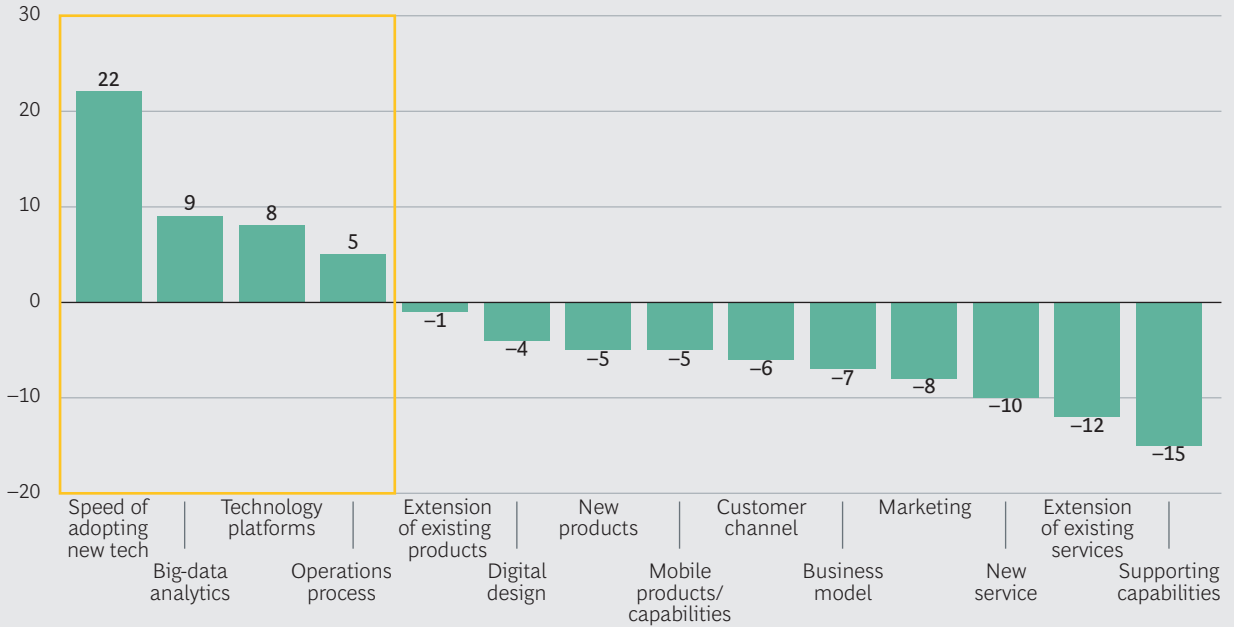
The Benefits of Speed

Increasing speed to market leads to numerous financial and nonfinancial benefits. Greater agility has the potential to boost a company’s top and bottom lines, and flexible and mobile consumers demand it. The financial benefits are often directly measurable and vastly exceed the up-front costs of introducing speed-to-market approaches to the organization. Some examples of the benefits of speed:

EXHIBIT 3 | Speed of Adoption Increased in Importance in 2015

WHICH OF THE FOLLOWING AREAS OF INNOVATION/R&D/PRODUCT DEVELOPMENT WILL HAVE THE MOST IMPACT ON YOUR INDUSTRY OVER THE NEXT THREE TO FIVE YEARS?

Change in % respondents citing significant impact, 2014-2015

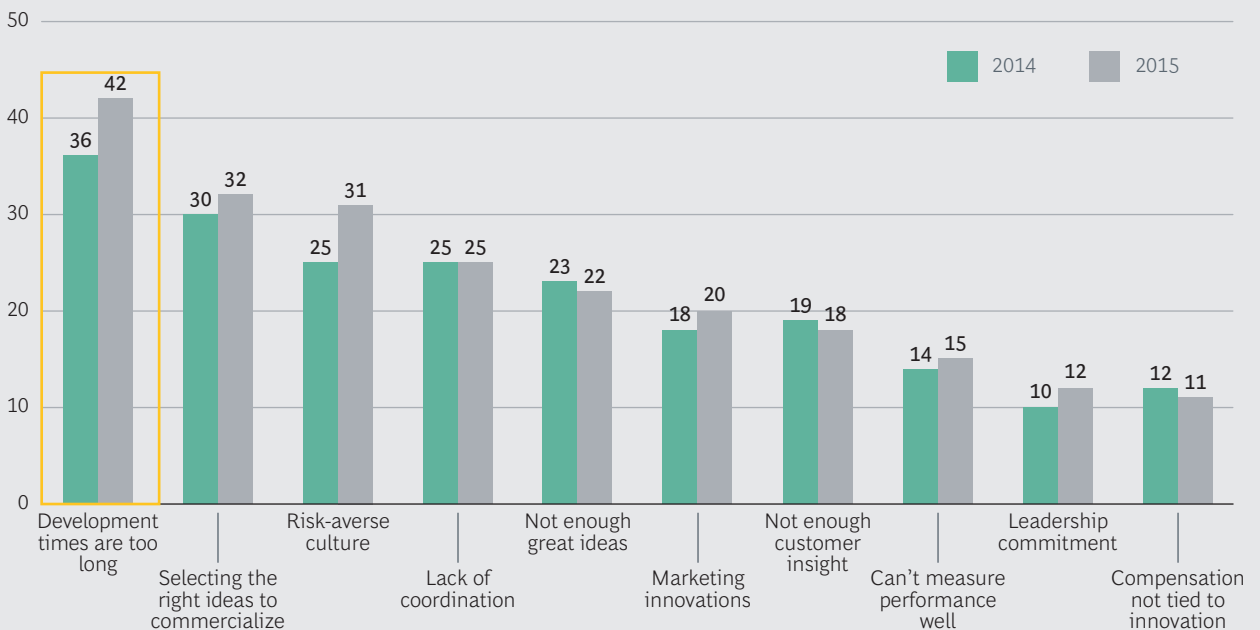


Source: BCG Global Innovation Survey, 2014, 2015.

EXHIBIT 4 | Long Development Times Remain the Biggest Obstacle to Returns on Innovation

WHAT ARE THE BIGGEST OBSTACLES YOU FACE WHEN IT COMES TO GENERATING A RETURN ON YOUR INVESTMENTS IN INNOVATION/PRODUCT DEVELOPMENT?

% respondents



Source: BCG Global Innovation Survey, 2014, 2015.

- **Faster Innovation.** Companies that are built for speed often realize first-mover advantages; they are able to react more quickly to competitors' moves or market shifts with their own product innovations.
- **Lower Development Costs.** Streamlined processes, limited iterations, and reduced slack release financial and operating resources for other value-adding activities.
- **Larger Market Share.** A product that gets to market early is less likely to face initial competition. A quick introduction also gives a product more time to build market share before it declines into a commodity.
- **Greater Forecasting Accuracy.** Because the time between product design and product release is shorter, executives may be more willing to green-light trendy products that would otherwise be denied.

panies *develop* new products and services, and the rate at which they *deliver* those products and services to market. Some companies emphasize one or the other; for example, innovation leaders stress development and fast followers focus on delivery. That said, companies that have designed their systems, organizations, processes, and cultures for speed in either context tend to have four things in common: they apply lean processes, prototype and iterate, have dedicated innovation staff, and follow the right metrics.

- **Apply lean processes.** The lean philosophy emphasizes speed as much as it does quality, efficiency, and elimination of waste. This year, for the first time, we asked our survey respondents to rate their companies' innovation and product development activities on 12 dimensions related to lean and efficient product development, including short cycles and iterations, standardized processes, and the quick modeling and testing of designs. (See Exhibit 5.) When we segmented the responses by self-described strong and fast innovators, we found a close correlation

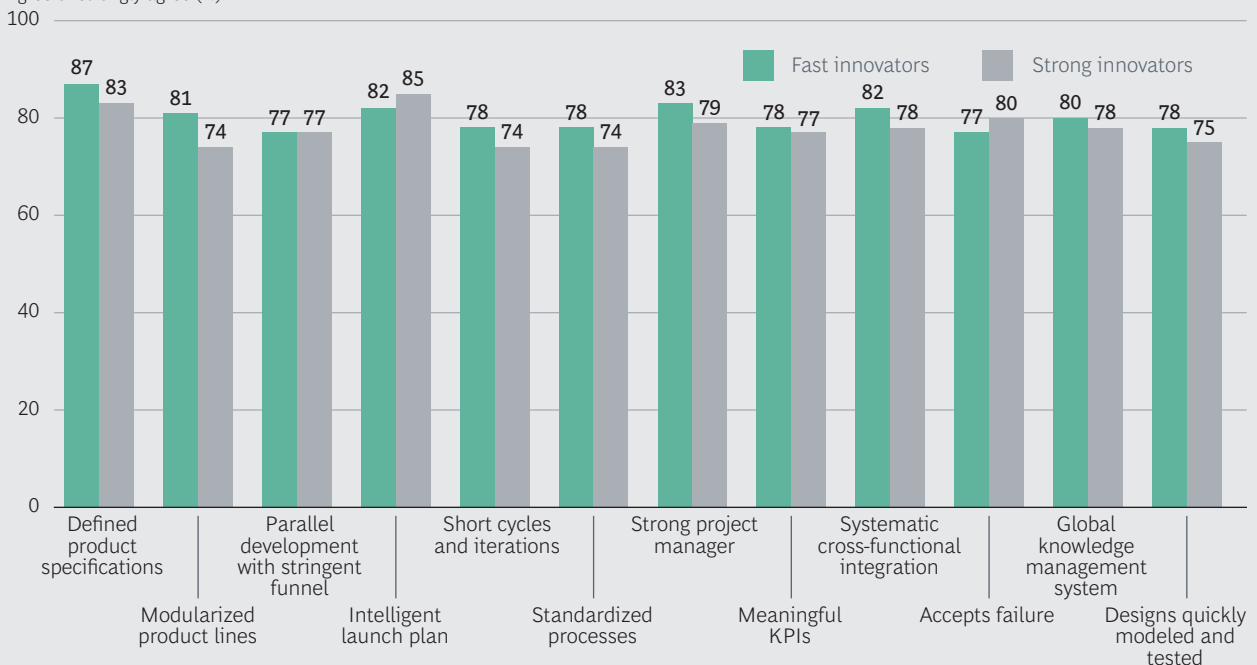
Designing the System for Speed

From an innovation perspective, there are two aspects to speed: the rate at which com-

EXHIBIT 5 | Fast Innovators Apply Lean Processes

MY COMPANY'S INNOVATION/R&D/PRODUCT DEVELOPMENT PROCESS EXHIBITS THE FOLLOWING DIMENSIONS RELATED TO LEAN AND EFFICIENT PRODUCT DEVELOPMENT

Agree or strongly agree (%)



Source: BCG Global Innovation Survey, 2015.

between these two groups—and a high degree of employment by both of lean principles across all 12 dimensions. (Separate BCG research corroborates these results: the companies that deploy the principles of lean R&D reduce timelines by double-digit percentages, as well as increasing efficiency and overall value. For more on how they have achieved these results, see “Strong Innovators Are Lean Innovators,” below.)

- **Prototype—to get customer input fast.** Many companies wait until a new product is perfected before designing an elaborate launch. Fast innovators test prototypes with customers, worrying less about the imperfections that they know are there and focusing more on the insights they may gain from consumer reactions and feedback. These are incorporated quickly in the next design iteration, and another prototype is developed and tested. Using an adaptive approach, good innovation systems take advantage of the experience curve to speed up the entire process. They also fail fast and fail cheap—cutting losses sooner than a standard innovation playbook might suggest and limiting the waste created by going too far down unproductive paths. It’s an approach that may sound intuitive and simple, but it’s a difficult one for many large organizations to implement, since it runs counter to most entrenched corporate cultures.
- **Dedicate people and resources to the task.** Experts debate the benefits of centralized versus decentralized innovation organizations (respondents to our survey were split as well), but what’s most important is to have dedicated capacity. If innovation is 10% of 100 people’s responsibility, you can guarantee that little

innovation will take place. But if it’s 100% of 10 people’s job, things will start to happen. Speed is partly born of the priority that is put on it, so assigning—and incentivizing—a dedicated team with the job of moving fast is an essential organizational move. Strong innovators put committed muscle behind reducing the time to market: they create fast-track programs, their own special processes, dedicated production capacity, established toolboxes (designed for speed), and teams. Typically they are able to reduce time to market by a factor of four.

- **Set and follow the right metrics.** We are what we measure, but companies too often measure the wrong thing. Metrics that put the emphasis on incremental progress, or progress against a single component of a larger whole, can cause individuals and teams to focus on their particular tree while losing sight of the forest. The best-performing innovators measure and incentivize teams on their overall achievement of company goals.

FAST innovators have long demonstrated that shortening innovation and product development cycles and reducing time to market can be a powerful source of competitive advantage. But a growing emphasis on speed, even among companies that are already fast, suggests that a new realization is dawning: the demand for speed is itself increasing.

STRONG INNOVATORS ARE LEAN INNOVATORS

DEPARTMENT STORE MAGNATE JOHN Wanamaker’s famous lament, “Half the money I spend on advertising is wasted; the trouble is I don’t know which half,” could easily be applied to R&D and new-product development. And when annual R&D spending reaches \$1 billion, \$5 billion, \$10 billion or more, the amounts being “wasted” get very big, very fast.

It’s not that companies are profligate, of course; creative functions such as new-product development are never 100% efficient, and they involve a certain amount of trial, error, and, inevitably, failure. But the fact is that some companies are considerably more successful at R&D than others, and having strong processes in place is one of the four attributes that executives say are critical to success. What can companies do to improve their R&D processes?

Managing the Unmanageable

It seems almost counterintuitive that strong innovators would emphasize process. After all, R&D is a creative function, and too much process management runs the risk of squelching the very creativity that is the lifeblood of innovation. The conventional wisdom is that the best creative minds want freedom, and any sort of process management represents manacles that either drive them away or, worse, keep them onboard but

fettered from creating the value they are capable of delivering.

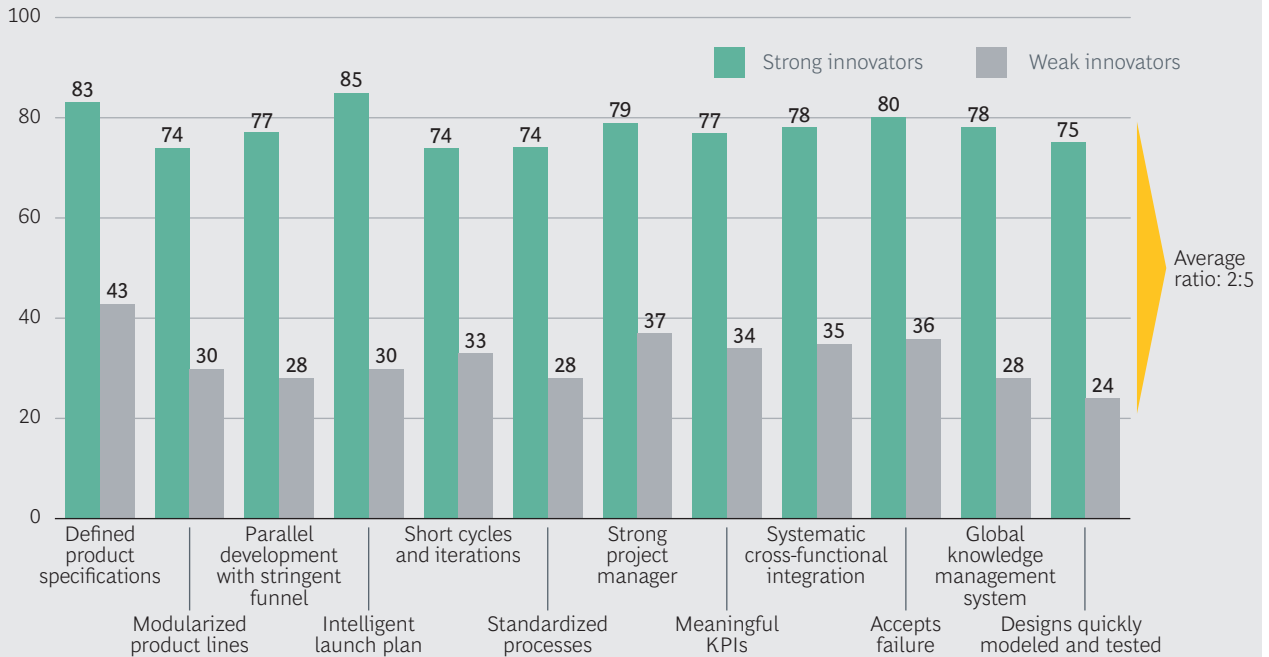
Yet the data is unequivocal—and compelling. In this year’s survey, we asked respondents for the first time to rate their companies’ innovation and product development activities on 12 dimensions related to lean and efficient product development, including short cycles and iterations, standardized processes, and the quick modeling and testing of designs. The overall responses were roughly 50% to 60% positive. But when we segmented them by strong versus weak innovators, the percentage of strong innovators following lean principles jumped to 74% or more—on every single dimension. Strong innovators are two to three times more likely to adhere to lean principles than their weak counterparts. (See Exhibit 6.)

The impact can be substantial. Separate BCG research has shown that the companies that are first to master lean R&D methodologies gain significant competitive advantages by developing higher-quality products up to six months sooner than their competitors, while also reducing deviations from product target costs by more than 35%. Moreover, in our experience, when organizations apply the principles of lean process improvement customized for the creative process of R&D, the typical result is a 15% to 20% improvement in R&D productivity.

EXHIBIT 6 | Strong Innovators Excel at Lean Methodologies

MY COMPANY'S INNOVATION/R&D/PRODUCT DEVELOPMENT PROCESS EXHIBITS THE FOLLOWING DIMENSIONS RELATED TO LEAN AND EFFICIENT PRODUCT DEVELOPMENT

Agree or strongly agree (%)



Source: BCG Global Innovation Survey, 2015.

This isn't to say that these companies focus solely on efficiency in the narrow sense of per unit cost. In R&D, being productive is as much about being smart about which bets to make—à la John Wanamaker—as it is about pursuing those bets efficiently. But the best companies put a process in place that enables good decision-making as well as good execution. (See *The Lean Advantage in Engineering: Developing Better Products Faster and More Efficiently*, BCG Focus, April 2015.)

Doing the Work Right...and the Right Work

This two-fold focus of process design—on execution as well as on decision-making—is captured by the mantra, “Do the work right, and do the right work.” (See Exhibit 7.) Do the work right is all about the process of execution, and it involves the same principles that are core to the lean approach in manufacturing and other domains: eliminating waste, reducing costs, shortening timelines, improving quality, and increasing efficiency. The best companies have designed processes that focus on the following aspects of execution:

- **Planning, Scheduling, and Approval:** avoiding late or inadequate planning, lack of sequence in scheduling, and unclear or overly iterative approval processes
- **Standardization and Automation:** minimizing variation and maximizing efficiency
- **Role Clarity and Scalability:** ensuring coordination and consolidation of key functions for critical mass and the reuse of assets and information
- **In-house Expertise:** building and maintaining expertise and properly deploying scarce resources
- **Sourcing and Geographic Distribution:** pursuing the proper use of outsourcing and offshoring with the right level of oversight
- **Metrics, Monitoring, and Feedback:** maintaining transparency on costs and other metrics, and actively monitoring to drive responsive feedback loops

It's in doing the right work, however, that R&D departs from lean as it applies to other domains. This is all about the process of decision-making, and it takes on far more importance in R&D because R&D is by nature a learning enterprise in which the freedom to follow untested hypotheses and hunches is critical.

The best companies pay attention to cultural issues that promote optimism bias.

Companies need to make all kinds of choices, such as which requirements to build into the target product profile, how best to pursue development for a given project, whether to run similar projects in sequence or in parallel, what priority to give projects that are competing for scarce resources, and—in the ultimate test of decision-making—when to call it a day and terminate a failing project.

All these decisions can be challenging, not just because of the inherent uncertainties in exploring the unknown, but also because the information necessary to make decisions is often held by specialists across multiple technical disciplines. It can be hard for a single individual or governance committee to have the expertise required to synthesize inputs from these disparate sources. This difficulty is exacerbated when the providers of the information have vested interests—such as job security, the desire to make a breakthrough, or the ability to work in a discipline of interest—that may promote (even unintentionally) optimism bias in their evaluations.

The best companies focus as strongly on improving the process of decision-making to offset this potential bias as they do on the process of execution. The principles they deploy include:

- **Optimization Not Suboptimization.** They avoid the temptation in large organizations to “push decisions down,” instead ensuring that those closest to a project have the ability to provide input

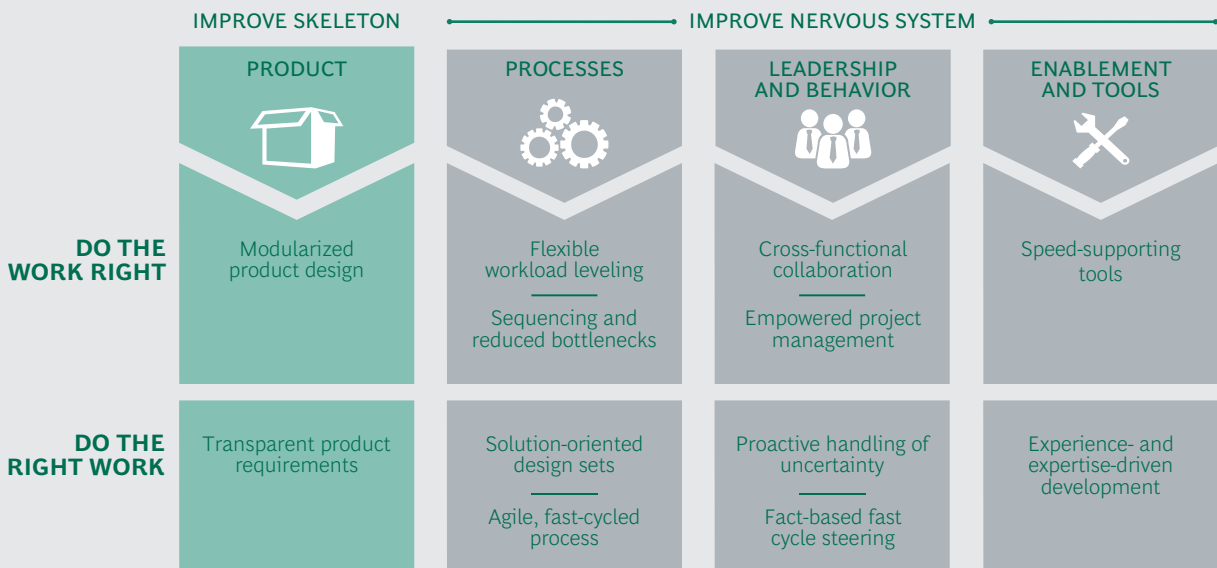
but that trade-off decisions are made at a level above the units being evaluated.

- **Courage.** They are willing to make big bets, they don't revisit decisions unless circumstances change, and they ban appeals outside the process.
- **Attention to Cultural Issues That Promote Optimism Bias.** They measure expert contributions by how much the input facilitates the governing body's decision-making, thereby rewarding unbiased input.
- **Real Differentiation in Investment Profiles.** They identify the projects that should proceed at full speed, the ones that require staged investment in order to gain a better understanding of the risks, and the ones that need more analysis in order to answer key questions. These decisions are clearly communicated across the organization.
- **Measurement on ROI.** They avoid pushing through projects just to meet quotas or targets. They allow no unfunded mandates. All decisions are tied to budget implications.

To bring this two-fold focus on process excellence in decision-making and execution to life, consider the example of a European automotive OEM for which adopting lean methodology meant staying among the industry front-runners in cycle time. In doing the work right, the company addressed high R&D spending during physical testing, the last phase of development. It invested in ensuring prevalidation of designs using digital tools before physical testing and then extended this methodology back to suppliers. The cost of prototyping was cut in half, and the number of specification changes per component dropped by a staggering 75%.

As to doing the right work, given that only 15% of a vehicle's technical specifications actually result in meaningful differentiation for consumers, the question—again à la John Wanamaker—was which 15%. This OEM made a significant investment in determining the attributes that consumers recognize as

EXHIBIT 7 | The Key Levers of R&D Improvement



Source: BCG analysis.

differentiating. It then did the hard work of translating those attributes into a technical roadmap that enabled the R&D department to focus its resources on the right 15%.

LEAN methodologies in R&D are not implemented overnight, nor is a culture that embraces lean principles and processes created in weeks or months. Companies that want to truly transform their R&D and product de-

velopment programs are looking at a journey that is likely to be measured in years. But for those that depend on innovation for growth, and back that dependence with budgets in the billions, the combination of cost savings and improved efficacy make it a journey well worth taking.

ENABLING TECHNOLOGY-ENABLED INNOVATION

NEW TOOLS CAN MAKE a big difference, and across all industries, new technologies, especially digital and data-based technologies, are powerful tools. At leading companies, technology is evolving from a functional silo to a foundation for breakthrough innovation in products, services, and business models.

In this year's survey, advances in technology platforms ranked as the most important factor driving innovation, and big-data analytics was not far behind. (See Exhibit 8.) This isn't just lip service: more than half of those who see tech platforms and big data as having a big impact are actively pursuing them as avenues of innovation.

Multipurpose Platforms

Technology-enabled innovation comes in many flavors. It can mean using advanced analytics to improve decision-making, employing digital technologies to retool manufacturing, and harnessing mobile capabilities to improve marketing, to name just a few. The crux in all cases is the creation of a platform that can be leveraged repeatedly to deliver impact. In our experience, technology platforms can bring benefits in at least four areas: cost and timeline reduction, often through automation; business transformation; the enhancement of process; and, most significant, business model innovation through

the creation of new types of products and services.

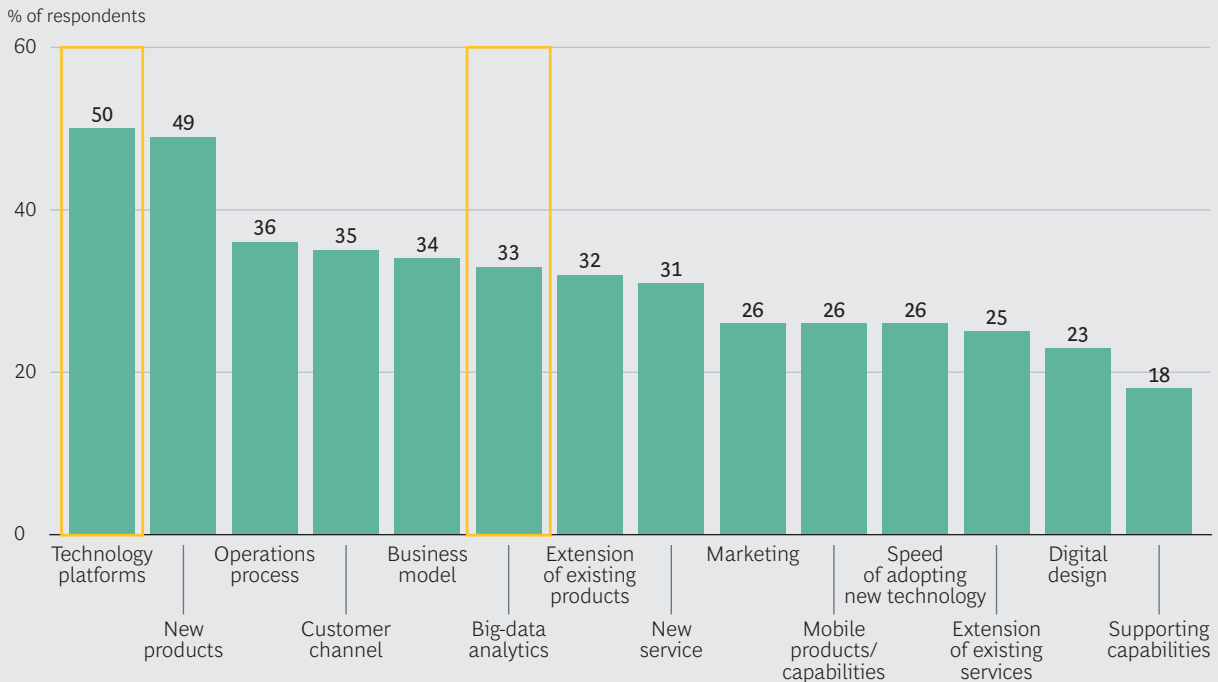
Take the example of General Electric, which used the new technology of additive manufacturing (also known as 3-D printing) to reduce the cost of manufacturing transducer probes, the most expensive component in ultrasound equipment. This innovation resulted in both significant efficiencies and more flexible production lines, driving down costs, which, in turn, led to uses of the technology where price had previously been prohibitive, such as in inspection equipment for industrial processes. GE is now exploring how 3-D printing can be used in additional businesses, including jet engine manufacturing.

Advances in technology platforms are the most important factor driving innovation.

All kinds of companies, in industries from the most basic to the most advanced, are applying technology-enabled innovations with substantial effect. For example, IBM has created a \$7 billion business through its Smarter Planet initiative, which puts technology advances to work in everything from installing smart grids for water conservation to using big-data ana-

EXHIBIT 8 | High Expectations for Technology Platforms and Big Data

WHICH OF THE FOLLOWING AREAS OF INNOVATION/PRODUCT DEVELOPMENT WILL HAVE THE MOST IMPACT ON YOUR INDUSTRY OVER THE NEXT THREE TO FIVE YEARS?



Source: BCG Global Innovation Survey, 2015.

lytics to improve urban services. A major cement maker used a combination of digital, mobile, and geolocation technologies to develop a delivery model that reduced its fleet size by 35%; it also enabled a step change in customer service by narrowing delivery windows by 90% and reducing missed deliveries by 97%. Google and Facebook are experimenting with drones and balloons to bring mobile Internet access to rural and hard-to-reach areas in developing countries.

How to Get There

Companies that develop and innovate using technology platforms put several practices in place. They regard functions such as IT and analytics as centers of value rather than of service or cost. They tend to centralize innovation (44% of both strong and disruptive innovators use a centralized innovation model), and they make sure to have staff 100% dedicated to innovation. They follow a structured approach rooted in a clear strategic vision; their organizations enable innovation; and they are supported by specialist expertise. Their approach features tight alignment be-

tween the business functions and IT, sound system architecture, a partnership attitude (both internally and with external resources), and, more and more frequently, an agile style of innovation development.

Adopting these practices is far from easy—companies encounter a host of organizational and cultural hurdles—and it typically involves a journey that is measured in years. The challenges can be daunting: breaking down organizational silos, shifting to an agile process, moving from a heavy IT architecture to modular systems, and overcoming internal resistance.

One of the most difficult—and important—organizational and cultural shifts is moving from a traditional “waterfall” approach to idea development, in which stopping a project is seen as tantamount to failure, to an agile approach that sets as many ideas racing as possible and quickly and happily kills off the ones that fail to show potential. Companies that make this change also become good at taking in ideas from all kinds of sources, including internal idea labs, external scout-

ing, thought leader monitoring, vendor relationships, crowd sourcing, and academic partnerships.

Companies that want to pursue more technology-enabled innovation can start by taking the following steps, distilled from the best practices of global leaders:

- **Deliberately allocate budget and resources to technology innovation.** Approaching the challenge as an extra or add-on responsibility will not work. Establishing a cross-functional, dedicated R&D lab is often a good way to start.
- **Put in place appropriate incentives for individuals to pursue innovation.** Organize innovation contests, provide rewards and recognition, and (where appropriate) include innovation in job objectives.

- **Foster a test and learn, fail fast and fail cheap mentality.** Encourage risk taking by actively reporting on both successes and failures. Communicate explicit approval of management's willingness to try and fail.
- **Encourage a collaborative approach between IT and business units.** At companies that are strong innovators, IT is no longer in its own silo. Instead, technical talent is integrated into business units and innovation teams.

Technology-driven innovation is hard. But the payoff is big—often extending well beyond a single new product to a platform or capability that can enable other innovations for years to come.

THE PREREQUISITES OF PROFITABLE ADJACENT GROWTH

ADJACENT GROWTH IS A hallmark of innovation leaders. Recurring members of BCG’s annual list of the 50 most innovative companies—3M, General Electric, and Procter & Gamble, for example—have long succeeded by developing new products in nearby markets that lead to incremental profitable growth. Younger, tech-based innovators such as Apple, Amazon, and Google have aggressively followed a similar strategy.

They’ve done so for good reasons. As markets mature and competition increases, growth in the core portfolio inevitably slows. Introducing new products means going up against entrenched competition, and even companies that innovate successfully in existing markets often end up cannibalizing sales of their own brands. Adjacencies help innovative companies open new avenues for growth through exposure to markets in which they benefit from 100% of the share that they achieve.

Adjacent growth is sound strategy, but there’s a hitch: it’s difficult for most mature companies to pull off. Big companies are often victims of their own success; they operate according to cultures and business systems that are set up to drive growth in the core. The key success factors for developing profitable new products in adjacent markets are often different.

There are five ways for companies to expand into adjacencies: by exploring demand-centric growth, by cultivating a new organization with new talent, by employing separate governance, by adopting an experimental approach, or by building the right cultural enablers.

Explore Demand-Centric Growth

Even today, there are still companies that view their categories, and the segments within them, through either an industrial lens (grouping by production technology) or a demographic lens (such as Millennials compared with baby boomers). Historically, this approach was understandable because companies often lacked the data to segment consumers more precisely. But in the age of big data, it has become much more feasible to think deeply about different types of consumers and their motivations. (See *Enabling Big Data: Building the Capabilities That Really Matter*, BCG Focus, May 2014.)

World-class innovators are moving from industry- or demographic-based segmentation to what we call “demand centric” segmentation, which identifies the drivers of decision-making by looking at the intersection of context (who the customer is, how he or she thinks, and what he or she does) and emotional or functional needs. Using richer data than was ever available before, companies can construct a “demand map” that clusters

consumer choices in a particular category into common need bundles—or “demand spaces.” These spaces are usually expressed in everyday language, such as “perfect for my family” or “the kind of break I need.” When clearly articulated, they provide the right targets for innovation by adjacency teams.

“Demand spaces” provide the right targets for innovation by adjacency teams.

This kind of thinking can also be applied to drive growth in the core. For example, Hilton Hotels eschewed conventional market research that groups people broadly by age, income, and occasion (such as “leisure versus business” or “long stay versus short stay”) in favor of asking people to describe what they want in a hotel and when and why they want it. Based on the results, the company was able to construct a map of what really matters to consumers. It could separate the hospitality market into multiple categories—demand spaces—such as “cool and hip” and “recharge and refresh,” and allocate each of its brands to one or more of them.

The results were startling. Not only did the demand space analysis help separate and reduce cannibalization among Hilton’s nine brands; it also uncovered an opportunity to reposition the company’s flagship brand into the “recharge and refresh” space. This was a high-growth area making up 25% of the market—and it was therefore far more attractive than the travel segment that Hilton had previously targeted. In only a few years, demand-centric growth at Hilton contributed to a dramatic improvement in the value of the business. In 2013, Hilton’s private equity owner took the company public at a 27% premium over the 2007 purchase price. It was the largest IPO ever for a hotel operator.

Cultivate a New Organization with New Talent

We consistently find that teams charged with adjacent innovation need to be organization-

ally separate from other innovation teams. There are several reasons. One is day-to-day reality. If adjacent teams are not separate, they are almost inevitably pulled into core efforts, and their budgets often get repurposed to address short-term challenges in the core business. Another reason is that adjacent innovation requires different people with different capabilities from those who drive core innovation. Companies that try to use the same people in new roles find that the adjacent teams tend to drift back toward core ideas and to miss adjacent opportunities. Adjacent innovation also requires an “investor” as opposed to an “operator” mind-set, which means populating teams with individuals with different management outlooks, an entrepreneurial bent, and a longer-term focus. These sorts of individuals are more amenable to risk-taking and more resilient in the event of failure.

Employ Separate Governance

Adjacent innovation generally requires a senior governance team that can play a role equivalent to that of a private equity or venture capital investment committee. Its members need the breadth of vision, practical experience, and organizational clout to review adjacent opportunities with an understanding of the risks involved, the ability to make choices to narrow the funnel, and, ultimately, to allocate capital to the best ideas. This is quite a different set of capabilities than is typically found in a core business’s governance body, which focuses first on execution and may look askance at anything that is new or different. The adjacency governance body also needs to play a defensive role—hence the requirement for organizational clout—protecting new adjacent initiatives and their funding from attacks stemming from the near-term urgency of the core.

Adopt an Experimental Approach

Since adjacencies are often uncharted territory and involve plenty of unknowns, failures are likely. What’s important is to employ a low-cost, fast-fail methodology that is based on a test, learn, adapt, and move on approach. Those overseeing the teams need to plan for the higher likelihood of initial failure

and design their approach accordingly, using these early forays as learning opportunities.

Build the Right Cultural Enablers

Culture can be a highly effective killer of new ideas. If adjacency projects get measured against existing norms and expectations, the effort to move into new markets is doomed. Companies need to put in place the necessary cultural enablers to support an adjacency innovation program. These include:

- A long-term focus given longer development and incubation periods
- A greater appetite for risk given inherently higher failure rates
- Recognition of the value of novel sources of growth (which risk little or no cannibalization of existing revenues) compared with projects evaluated on the basis of near-term profit
- Avoiding the tendency (and it is strong) to migrate toward developing products, services, and business systems that look exactly like those in the core
- Incentives to support all of the above

Learning from the Masters

As we observed in last year's report on the world's most innovative companies, some breakthrough innovators manage to use the entire company as a new-idea laboratory. Apple under the late Steve Jobs is perhaps the best-known example. Google, with its policy of encouraging employees to spend 20% of their time working on their own ideas, using the company's tools and data, is another. 3M has long allowed its employees to spend up to 15% of their time on projects of their choosing, using the company's resources.

Perhaps no company better exemplifies adjacent innovation than Amazon. The company

moved from its initial innovative notion of selling books online to become the most disruptive force in retailing by selling just about everything online. Along the way it built a global network of 80 fulfillment centers—so it started offering fulfillment services as an option for small merchants, which could thereby distribute almost as efficiently as Walmart. In parallel, it built enormous scale in its data centers and world-class skill in operating them. It then reconceptualized this computing infrastructure as a product in its own right. In 2006, the company opened Amazon Web Services (AWS) as a standalone cloud computing service, renting out raw computing capacity that ultimately evolved into a complex stack of computing services. Today Amazon even sells the service to competitors such as Netflix. By the second quarter of 2015, AWS had become a \$1.8 billion business growing at more than 80% year over year, with a profit margin of 21%.

It's Not All or Nothing

Plenty of companies are better placed than they think to explore adjacent innovation. As we have described in earlier chapters, strong innovators have considerable assets that they can draw on in areas such as speed, lean processes, and the application of technology, and these often provide starting points to explore adjacencies. In parallel, a company thinking about adjacent growth should also determine where its gaps are vis-à-vis the five areas outlined above and develop a plan to address them. Once the internal house is in order, companies can begin to look around the neighborhood for attractive opportunities for incremental profitable growth.

APPENDIX

BCG's rankings of the most innovative companies are based on a survey of 1,500 senior executives representing a wide variety of industries in every region. Before 2008, our rankings were based on a single criterion—respondents' picks. In 2008, we added three financial measures: three-year growth in total shareholder return, revenue, and margins. (TSR includes stock price appreciation and dividends.) Respondents' votes counted for 80% of the ranking, TSR for 10%, and revenue and margin growth for 5% each.

As noted in chapter 1, this year we made two changes to the methodology that rendered the results more robust and reflective of top innovators across all industries. We asked respondents to rank the most innovative companies both within and outside their own industry, which accounted for 30% each, and we simplified the financial inputs so that three-year TSR counted for the balance of the ranking.

NOTE TO THE READER

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