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This Quarter

Earlier this year, we coauthored a *Quarterly* piece called "Strategic principles for competing in the digital age." Our article was an effort to distill the opportunities, threats, strategic forces at work, and critical decisions facing leaders amid the ongoing digital revolution. It turned out that there was an appetite for such a synthesis: published exclusively online, this has been one of the most widely read articles or reports our firm released in 2014.

Since then, a number of colleagues around McKinsey have been working hard to advance our understanding of what it takes to compete on the digital edge. This issue of the *Quarterly* reflects some of those efforts:

- Research from the McKinsey Global Institute (MGI) highlights the changing nature of global economic activity, particularly information flows, which are enabling new business models to take shape and rewriting the rules of globalization. A separate article, also based on MGI research, describes how Chinese companies are catching up with the country's consumers in their embrace of the Internet—accelerating China's economic transformation and shaking up the competitive landscape.

- Fresh perspectives from our colleagues in McKinsey's automotive and service-operations practices describe the trajectories of those critical sectors. Digitization in the auto industry is generating new forms of data, attracting new players, and demanding new

forms of expertise. Many service-oriented companies, in turn, now confront a growing array of digital attackers, necessitating heightened levels of service innovation, greater personalization of the customer experience, and simplification of service delivery. The head of Starwood's loyalty program provides a close-up view of these shifts in the hotel industry.

- Articles in this issue's Leading Edge section also present new findings on digital competition. Learn from our colleagues about, for example, the wide range of software-development performance across corporate IT departments and why that matters in a digital era. In the marketing arena, review the relationship between brand performance and digital capabilities, as well as the growing data-driven sophistication of pricing in emerging markets. From the operations world, investigate the rising importance of 3-D printing and the potential for advanced analytics to tame manufacturing complexity.

The intensification of digital competition in no way diminishes the importance of some very human organizational issues for senior leaders. One prominent example: the barriers holding back women as they climb the corporate ladder. A special package highlights new McKinsey research on gender diversity in the Gulf States of the Middle East, along with perspectives from Saudi Aramco's most senior female leader. Also presented are views from three Australian companies whose male CEOs are part of a coalition to push the boundaries of gender diversity Down Under. And for companies taking stock as they set gender priorities, our colleague Lareina Yee proposes a corporate fitness test. All of these articles are a good reminder that even as technology and analytics advance, people are an ever more critical differentiator—both to exploit cutting-edge digital possibilities and to ensure organizational vitality in our rapidly changing times. ○

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Director, Greater China office

Paul Willmott
Director, London office

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McKinsey Quarterly

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The perils of ignoring software development

Peter Andén, Chandra Gnanasambandam, and Tobias Strålin

Software is a key to market differentiation and value creation for an increasing number of products and services.

As digital technologies relentlessly reshape competition, products and services increasingly depend on software for differentiation and performance. Software is behind smartphones and other interfaces that guide consumer interactions; algorithms orchestrate productivity-boosting process automation; wearable devices loaded with software monitor the health and performance of athletes and patients alike. Despite the mission-critical nature of software, it gets surprisingly little attention in the C-suite. Most often, it is relegated to functional managers, several levels down the organization, who manage teams of programmers.

New research suggests, however, that companies pay a price when they undervalue the strategic importance of producing excellent software. We examined three core measures of software-development performance at 1,300 companies of varying sizes and across all regions of the world.[1] We found not only stunning differences between the highest- and lowest-performing organizations but also sizable differences between the top and average performers (exhibit). Top-quartile companies developed software upward of three times more productively than companies in the bottom quartile. They had 80 percent fewer residual

design defects in their software output. Our research also shows that the companies benefited from a 70 percent shorter time to market for new software products and features. This performance gap means that top companies can speed up the flow of new products and applications at much lower cost and with markedly fewer glitches than other companies can.

The coming revolution

Such performance leverage will become even more important as the transition from hardware- to software-enabled products accelerates. Today's shift resembles what occurred in the 1970s, when digital electronics began replacing the mechanical and analog technologies that underlay products from calculators to TV sets. The number of top 100 product and service companies that are software dependent has doubled, to nearly 40 percent, over the last 20 years. Value is shifting rapidly as hardware features are increasingly commoditized and software differentiates high- from low-end products. And ever more miniaturized computing power means that the value of embedded software in products is expected to go on growing.

Already, software enables an estimated 80 percent of automobile innovation, from entertainment to crash-avoidance systems, according to automotive-software expert Manfred Broy (an electric vehicle may have 10 million lines of code, and a typical high-end car can have many times that).[2] Interfaces will become even more sophisticated—and critical—as a growing variety of products, from home appliances to mobile medical devices, are designed around smart screens. As software-enabled customer interactions become the rule, revenues from digitized products and channels are expected to exceed 40 percent in industries such as insurance, retailing, and logistics. The software-led automation of manufacturing and services has generated rising output while reducing costs. And companies with consistently high-performing software experience less operational downtime and develop products with fewer glitches that mar the consumer experience. In a recent letter to shareholders, General Electric CEO Jeffrey R. Immelt offered a view of where things are headed: "We believe that every industrial company will become a software company."[3]

Raising the profile of software development

CEOs need to determine whether they have the right organization and capabilities to compete in an environment where software continues to change the game. Asking three questions can help start the process:

What are the strategic stakes? CEOs and their top teams should quickly get up to speed on how software could be differentiating or disrupting their current businesses and industries. Scania creates a competitive edge for its trucks through advanced software features that give drivers real-time information on how to optimize fuel use

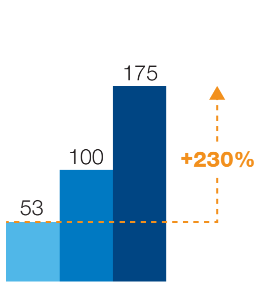
Exhibit

Software-development performance varies significantly across development groups and companies.

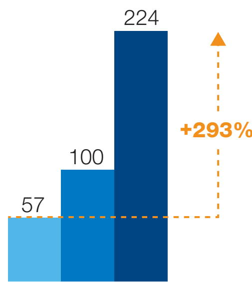
Index: average performance = 100

Bottom quartile | Average | Top quartile

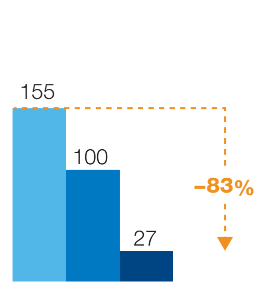
Productivity
Complexity unit per person-week



Development throughput
Complexity unit per week



Quality
Residual design defects



Source: Numetrics-embedded software project (a McKinsey Solution), October 2013, including data on software-development projects at 1,300 companies across global markets

and maximize safety. Semiconductor maker MediaTek invested in software-based reference designs[4] in the wireless chips it produces for smartphone manufacturers. The new offerings upended competition in the high-volume, low-end smartphone industry, leading to a tenfold increase in MediaTek's sales of wireless chips within a single year, as customers benefited from lower development costs, faster times to market, and increased design flexibility.

Where does our software power reside?

Outside the technology sector, senior software leaders are rarely in the top-management hierarchy. Many companies manage software strategy three to five levels down in the organization, within scattered departments often dedicated to designing and building hardware platforms. Siloed software expertise makes it difficult to assemble a strategic core of software leaders who can think cross-functionally about innovation or productivity.

One path forward is to give a software-development executive a seat at the top-management table. Companies can do so by establishing an office—chief of software development—that reports to the CEO, much as companies have done in recent years with the role of chief digital officer or chief information-security officer. Such an executive is well positioned to help high-ranking executives understand how the software-development performance of their company stacks up against that of its peers, the risks of substandard processes, and the strategic importance

of improving software-development performance by overhauling organizational structures, development methods, and metrics.[5]

How do we build the required software-development muscle? In many industries (again, apart from high tech), hardware and mechanical engineers dominate the engineering leadership, so it is difficult to attract the talent needed for cutting-edge software R&D teams. Companies can break through in two ways. The first is mounting an effort to change the organization, developer by developer: building a software powerhouse organically, from existing internal organizations, while targeting top software companies to get strong contributors, who will become software champions and talent magnets. A second option is acquiring a software company to break into new technology areas and get a higher level of software capability. Walmart followed this approach, acquiring a number of smaller start-ups to strengthen its position in e-commerce as well as social and mobile retailing.

In either approach, companies need to follow through with software-friendly operating models that incorporate agile working methods, flexible hours, and motivational tactics (such as internal competitions) that spur developers to engage with innovative and challenging projects. Unconventional hiring processes (coding contests or testing online gaming skills, for example) may be needed to screen candidates and identify top talent—as some top digital players already do. There's no escaping the competitiveness of today's software-talent marketplace, which is particularly challenging for large companies seeking to build their capabilities. As digital technologies continue reshaping markets, though, there's little alternative. Embracing the rising strategic importance of software, and viewing its development as a crucial competitive battlefield, are keys to success for an ever-growing number of companies.

[1] During 2013, we examined software-development projects at 1,300 companies (ranging in size from fewer than 50 employees to more than 5,000) around the world. We looked at six development methodologies and used proprietary analytics to assess the complexity of designs.

[2] Robert N. Charette, "This car runs on code," *IEEE Spectrum*, February 1, 2009, spectrum.ieee.org. See also *Digits*, "Chart: A car has more lines of code than Vista," blog entry by Brian R. Fitzgerald, *Wall Street Journal*, November 11, 2013, blogs.wsj.com.

[3] Jeffrey R. Immelt, "Letter to shareowners," *2013 GE Annual Report*, ge.com.

[4] A technical architecture for a system that can speed up customized software development.

[5] Locating diverse software-design teams in the same facility and using analytics to predict quality levels are ways top companies are getting more leverage from advanced design methods and setting ambitious but realistic goals for teams.

The authors wish to thank Karim Doulaki, Simone Ferraresi, and Shannon Johnston for their contributions to this article.

Peter Andén is an associate principal in McKinsey's Stockholm office, **Chandra Gnanasambandam** is a principal in the Silicon Valley office, and **Tobias Strålin** is a principal in the Seattle office.

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Running your company at two speeds

Oliver Bossert, Jürgen Laartz, and Tor Jakob Ramsøy

Digital competition may dictate a new organizational architecture in which emerging digital processes coexist with traditional ones.

When a retailer recently tried to launch a new e-commerce business, it found itself stymied by the fact that IT-spending amounts were capped as a percentage of revenue and by a lengthy and cumbersome approval process for new projects. The company's goal of launching the business in two months proved hopelessly optimistic.

This retailer's time-to-market problem is symptomatic of a dilemma many companies face as they seek to develop new products at a faster tempo, digitally optimize processes, or otherwise place major strategic bets in response to the digitization of their businesses. Digital competitors are now biting into a range of industries, creating a need for a rapid response. Yet the technology processes running many large-scale businesses are also mission critical. There's no room for compromise on the performance of current technology-enabled (and often transaction-oriented) operating processes, even as organizations try to increase their pace of digital innovation.

The retailer's board responded by creating a new budgeting and approval process in which projects supporting major digital strategic thrusts are now treated separately from the rest of the IT budget. Solutions like this, in our experience, are an effective means of addressing digital timing challenges. Many companies need to create a two-speed architecture—a *fast speed* for functions that address evolving customer experiences and must change rapidly, and a *transaction speed* for the remaining functions, where the pace of adjustment can remain more measured.

Although this sounds simple, it is anything but. Pulling off this split typically means confronting a framework of IT practices and organizational processes that have evolved over time and are at the core of the technology that keeps businesses running. In a separate article,[1] we offer a detailed road map for IT leaders hoping to maintain the transactional world's large-scale systems while pursuing daily deployments of digital features, customized cloud-based

solutions, and real-time data analytics. Here, we'll briefly lay out some broader management principles that are important for a wider cross section of executives to keep in mind.

Make the digital dialogue more strategic

Solutions like the retailer's work only if there is clear agreement on what constitutes a digital priority worthy of a fast speed. In our experience, that rarely happens, because far too often, the digital dialogue never becomes sufficiently strategic to galvanize top management. At the retailer, by contrast, top management brought its budgeting challenges to the board, which approved the new, two-speed ground rules. Top management has also begun revising its agenda to elevate the importance of discussing strategic technology initiatives, including comparisons between them and other major thrusts, such as entering new regions.

Achieving this level of dialogue often means changing mind-sets, such as the common one that IT spending is a "tax" required to "keep the lights on." At one major consumer-packaged-goods company, this mentality consistently meant that small, short-term fixes were prioritized over large, company-wide investments. In response, the company's top management engaged the board in a discussion of digital priorities that could redefine the business model. Once it's clear that certain types of technology spending are an investment in new business strategies, it becomes much easier to agree that the resulting initiatives should be implemented quickly.

Evolve the organization

When the IT organization is asked to release new digital functions on a faster deployment cycle, it requires new levels of agility and coordination that may require substantial organizational change. One large industrial company recently established digital-product management as a separate organizational unit accountable not only for the company's website, mobile applications, digital interactions, and new functionality, but also for collaborating closely with business and IT leaders.

This type of setup is found among most companies that are "digital natives" but is much rarer in large, traditional organizations. The rule in many of the latter is to let individual businesses identify and prioritize their IT requirements and then to tackle priority projects (assuming that the company has the IT-development capacity) through quarterly releases. That approach had proved problematic for the industrial company because requirements for digital tools often overlapped among businesses but had to be modified every week—leaving no time for meetings to

grind out an alignment among affected businesses and functions. The new product-management unit solved this problem without compromising the development or maintenance approach needed for core transactions, which were managed separately.

Creating joint IT–business teams to coordinate new initiatives also proved invaluable at a bank trying to catch up with rivals that use big data and advanced analytics to change products and marketing on the fly in response to evolving customer preferences. Product specialists now collaborate closely with model builders to create the automated tools that can assess customer needs in real time and make offers for related financial products. The IT organization collaborates closely as it selects the best data-processing technologies to support the new algorithmic models. None of this compromises the bank's transactional backbone, which again is managed separately to ensure its ongoing integrity.

Digitization has led to bifurcated competition that challenges monolithic corporate structures. A two-speed approach to architecture will help companies navigate what's likely to be a tricky period of transition.

[1] See "A two-speed IT architecture for the digital enterprise," *McKinsey on Business Technology*, Number 36, Winter 2014, on mckinsey.com.

Oliver Bossert is a senior expert in McKinsey's Frankfurt office, **Jürgen Laartz** is a director in the Berlin office, and **Tor Jakob Ramsøy** is a director in the Oslo office.

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Brand success in an era of Digital Darwinism

Jacques Bughin

Companies adept at using digital tools along the consumer decision journey are gaining a sizable lead over competitors.

The Internet has become an indispensable tool for marketers, yet there are still gaps in understanding its role in shaping how consumers choose among brands. With the help of a powerful data set, we have been studying the relationship between the level of digitization across the consumer's decision journey and the likelihood that a consumer will select a brand after considering and evaluating its qualities. We compiled data on 1,000 brands across a wide range of product categories, covering 20,000 consumer journeys and 100,000 touchpoints along them.[1] The research paints a vivid picture of the factors involved in a consumer's purchase choice (also known as brand conversion). Overall, the landscape exhibits what we call Digital Darwinism:[2]

- Competition among brands is steadily increasing as branding channels and messages proliferate.
- As consumers become more digitally empowered, brand messages lose their impact, and the likelihood of conversion, on average, decreases.
- The brands most likely to convert digitally jaded consumers into purchasers offer the strongest array of digital experiences. These successful players seem to be pulling away from less robust digital brands and gaining further momentum as they build up positive word of mouth on social media.

The state of digital play

Digitization is steadily becoming the main pathway for consumer journeys. The number of digital touchpoints is increasing by 20 percent annually as more offline consumers shift to digital tools and younger, digitally oriented consumers enter the ranks of buyers. Many are using digital tools comprehensively. Among our sample of those who do use them, 39 percent did so in the initial consideration of a brand ("experimenters"). An additional 42 percent use digital tools for both consideration and the more intensive evaluation stages of their journeys ("engaged and informed"). A further 20 percent use digital tools end to end—

that is, they complete their purchases online ("fully digital").

Some notable variations among industries lie across this spectrum of journeys. In the software, airline-booking, and utilities industries, consumers are more likely to be fully digital. Autos, insurance, and food have similar numbers of digital consumers in the consideration and evaluation stages, but fewer who purchase digitally. Telecommunications, banking, and appliances have relatively strong numbers of consumers considering and evaluating products and services digitally but more modest numbers making digital purchases.

The effects of Digital Darwinism

The challenges for brand-marketing executives will probably increase as consumers opt for more complete digital interactions. We found that the likelihood of brand conversion is lower for fully digital consumers than for experimenters. Specifically, when experimenters become aware of a brand, their conversion rate reaches about 40 percent. The conversion rate for fully digital consumers, by contrast, is only 25 percent.

More actively digital consumers are prone to abandon a brand midstream for a number of reasons. They are more likely to have joined Facebook, Twitter, or product-evaluation platforms for conversations about the qualities of products or services. The greater number of touchpoints before purchase increases the odds a consumer will encounter a deal breaker along the digital highway. What's more, companies have less control over more digitally seasoned consumers, who initiate their prepurchase interactions independently. And since the level and influence of advertising in the social-media space have yet to reach the levels common in offline channels, brand messages are less likely to influence decisions.

Our research indicated, however, that some companies have managed to navigate this competitive turbulence successfully. To understand the differentiating factors for that success, we rated brands across four digital skills: the ability to create brand awareness among an unusually high share of digitally savvy consumers, to serve customers digitally during the purchase processes, to generate an online customer experience deemed at least as good as the offline one, and to track the digital comments of customers about their experience and to use those comments to improve it. We added the scores across these dimensions, compiling a digitization index that represents the weight of satisfactory touchpoints leading to a purchase across decision journeys.[3]

When we then correlated these index scores with brand conversion for individual journeys, we found striking differences between the top and bottom 10 percent of companies as measured by their digital capabilities. Across all

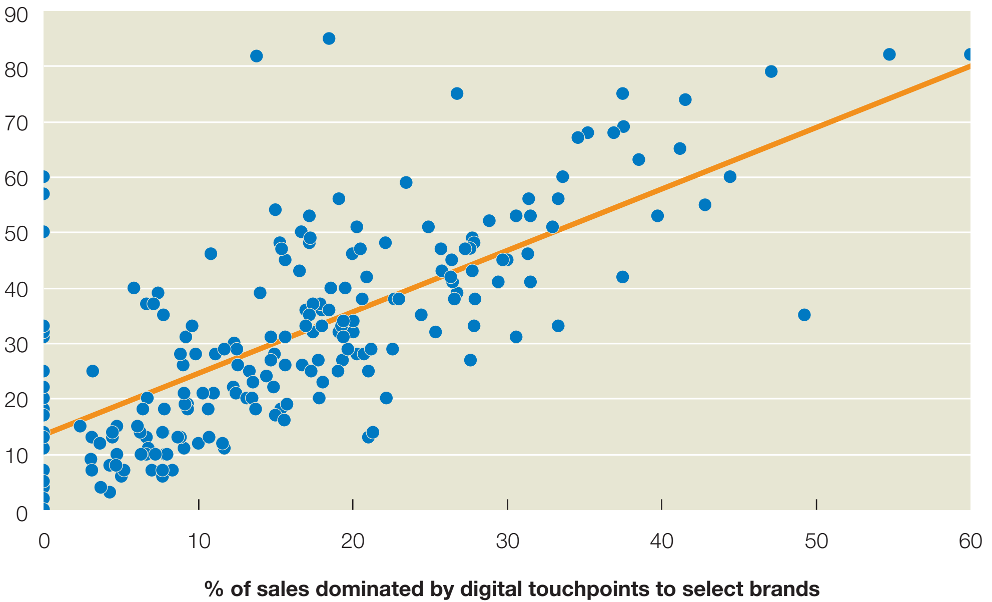
sectors, those in the upper echelon converted awareness to sales at a rate 2.5 times greater than those at the lower level (exhibit).[4] We also learned that for some industries—software, consumer electronics, electric appliances, and detergents—higher brand-digitization scores resulted in a disproportionate increase in brand-sales conversion. (A one-percentage-point increase in a digitization score led to a more than 1.5 percent increase in conversion.) This elasticity has stark implications for competition, suggesting that the most savvy digital brands are consolidating their positions within their sectors—and diminishing the chances that laggards will catch up.

A related finding is that more thoroughly digitized brands also benefit from higher levels of positive word of mouth. In this case, the elasticity we measured by regression ranged from 0.7 to 1.4; 1.1 was the average increase in word-of-mouth benefits for a one-percentage-

Exhibit

Companies with greater digital capabilities were able to convert sales at a rate 2.5 times greater than companies at the lower level did.

Probability of brand being selected in purchase funnel, %



Source: McKinsey digital matters survey covering 70% of discretionary spending for about 15,000 European households, 2012–2013

point increase in the level of digitization. The implication is that successful digitization creates additional momentum as winning companies benefit from free "earned" media, generated by recommendations and positive comments on social media.[5]

The right DNA for an evolving environment

Darwin understood that it's not necessarily the strongest or most intelligent species that survive, but rather those best responsive to change. As companies seek to adapt, they should consider the following:

Are you tracking emerging digital models? Even in traditional sectors, companies are adopting new digital models, and that should be a wake-up call for incumbents. In the telecom sector in the Benelux countries and France, for instance, two purely digital companies have emerged: Mobile Vikings and Free. Both enjoy very strong brand conversion—70 and 80 percent, respectively, versus industry averages of 52 percent in the Benelux countries and 44 percent in France. These companies accomplish this feat by delivering high levels of customer service, participating meaningfully in digital communities, and attaining high levels of brand recognition. Free launched its mobile service without a significant marketing budget, using only websites, blogs, and social media, while creating very high levels of positive buzz. Both Mobile Vikings and Free have created digital-channel environments where customers routinely help each other.

In the media industry, the *Financial Times* and the *New York Times* have successfully used digital interactions to create awareness of their digital products and to fashion attractive digital offerings. These newspapers have been able to increase their digital-subscription revenues significantly in the face of declining print circulation and advertising revenues.[6]

Are social-feedback loops working against you? Polarization between digitally savvy companies and the rest of the pack is already taking hold as feedback loops pile up benefits for companies early to adapt. Social-media recommendations that nudge customers to increase their purchases are becoming a potent competitive asset. Positive consumer digital experiences also increase a brand's "stickiness," thus raising the likelihood of repeat purchases.

Are your digital channels the most effective ones? While digitization, overall, is a no-regrets play, some channels resonate more in certain industries. When we compared two retail brands, we found that social media converted consideration into purchases twice as effectively as other digital channels did. For two Italian banks we studied, online searches were found to be five times more effective than other digital channels in converting consumers. The

key is to know your customer, figure out the correct digital channel, and use these insights while building your ecosystem.

The digital revolution cuts two ways for companies as customers with a wider range of options become more difficult to reel in. However, brands that have moved swiftly to master digital channels—gaining a deep understanding of customer preferences, crafting digital experiences, and improving offerings via social feedback—are establishing a competitive advantage that may be difficult to beat.

[1] Our study, conducted over 2012–13, covered 70 percent of discretionary spending for about 15,000 European households. For more on consumer decision journeys, see David Court, Dave Elzinga, Susan Mulder, and Ole Jørgen Vetvik, "The consumer decision journey," *McKinsey Quarterly*, June 2009; and Peter Dahlström and David Edelman, "The coming era of 'on-demand' marketing," *McKinsey Quarterly*, April 2013, both available on mckinsey.com.

[2] We use the term here as it applies to digital branding and marketing. Futurist and digital analyst Brian Solis has described "Digital Darwinism" as "the phenomenon when technology and society evolve faster than an organization can adapt." Author Evan I. Schwartz wrote about the competition among e-commerce players in *Digital Darwinism: 7 Breakthrough Business Strategies for Surviving in the Cutthroat Web Economy* (Broadway Books, 1999).

[3] The index is based on scores from the top ten brands across 20 product categories. The purchasing experiences measured covered a range of digitally engaged consumers. There was a large distribution of index scores. At a few companies, digital practices dominate. Most fall along a continuum, with varying combinations of digital and traditional means of interacting with customers.

[4] We used regression techniques to estimate the elasticity of digitization to sales conversion across 20 product categories. The index explains 32 to 81 percent of sales conversion, depending on the sector chosen, and 19 out of the 20 regressions exhibited a significantly positive digital index elasticity to sales conversion with a very high confidence level.

[5] For additional findings, see Jacques Bughin, "Brand success in an era of digital Darwinism," *Journal of Brand Strategy*, 2014, Volume 2, Number 4, henrystewartpublications.com.

[6] From press accounts of industry revenues and *National newspapers: Digital signs of life*, Enders Analysis, December 2013, endersanalysis.com.

Jacques Bughin is a director in McKinsey's Brussels office.

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Are you ready for 3-D printing?

Daniel Cohen, Katy George, and Colin Shaw

There have been false dawns before, but this technology is poised to deliver cost benefits and to advance innovation in manufacturing.

Systems for additive manufacturing, or 3-D printing as it's better known, represent just a fraction of the $70 billion traditional machine-tool market worldwide.[1] Yet given the likelihood that this technology will start to realize its promise over the next five to ten years, many leading companies seem surprisingly unaware of its potential—and poorly organized to reap the benefits.

A McKinsey survey of leading manufacturers earlier this year showed that 40 percent of the respondents were unfamiliar with additive-manufacturing technology "beyond press coverage." An additional 12 percent indicated that they thought 3-D printing might be relevant but needed to learn more about it (Exhibit 1). Many also admitted that their companies were ill prepared to undertake a cross-organizational effort to identify the opportunities. Two-thirds said that their companies lacked a formal, systematic way to catalog and prioritize emerging technologies in general.

The mass adoption of 3-D printing—the production of physical items layer by layer, in much the same way an inkjet printer lays down ink—is probably years rather than months away. The 3-D printer industry has enjoyed double-digit growth recently; sales of metal printers, indeed, rose by 75 percent from 2012 to 2013. But expert consensus[2] indicates that the market penetration is just a fraction (1 to 10 percent) of what it could be given the wide range of possible 3-D applications (Exhibit 2).

Ten percent of the executives in our survey already find the technology "highly relevant." They see 3-D printing's ability to increase geometric complexity and reduce time to market as the key business benefits, closely followed by reduced tooling and assembly costs. Those who expect to be among the next wave of users were much more likely to cite reducing inventories of spare parts as one of the advantages. Additive manufacturing, in short, seems set to change the way companies bring their products to market and respond to customer needs. But predicting a "tipping point" is difficult.

Much will depend on when and how quickly overall printing costs fall, a development that should narrow the still-yawning gap between the cost

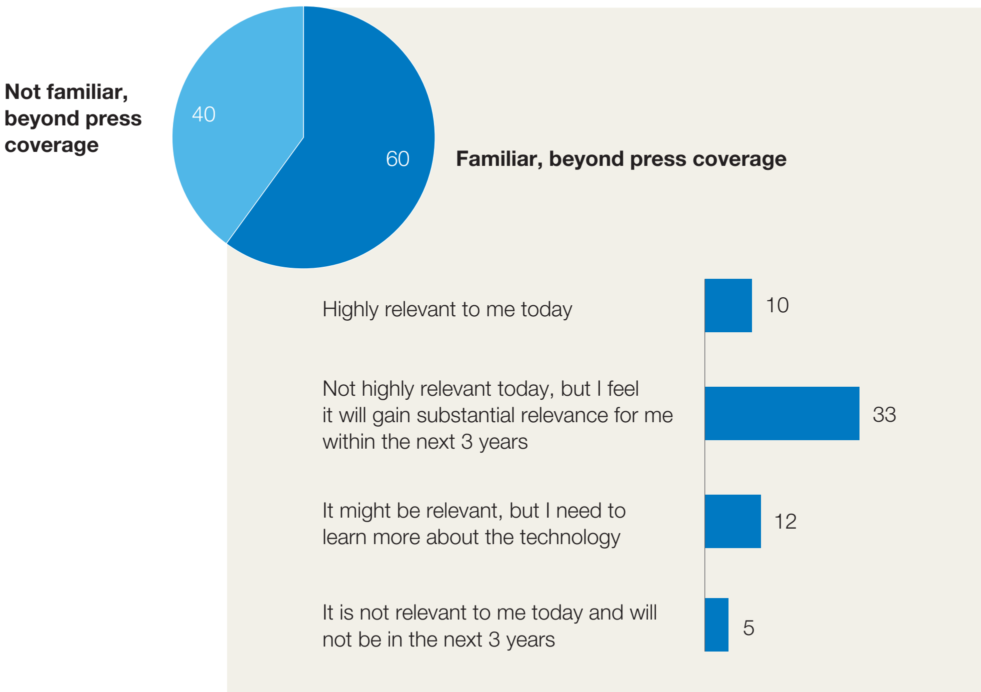
of new and traditional manufacturing methods. In sintering-based 3-D printing technologies,[3] for example, there are two major expense categories. The machines and their maintenance typically account for 40 to 60 percent of total printing costs. The materials used in the manufacturing process can account for 20 to 30 percent when using common materials such as aluminum, or 50 to 80 percent when printing with exotic materials such as titanium. Labor and energy make up the rest.

In all likelihood, prices for sintering-based printers will remain steady or rise in the near term thanks to the introduction of new technical features, such as enhanced automation. But patent expirations and new entrants in Asia should apply downward pressure over the next ten years. The cost of materials ought to drop in the long term as third-party firms become credible alternative powder suppliers and as increased demand for powder enhances scale efficiencies more generally. Throughput rates are

Exhibit 1

How 3-D printing is set to become more relevant

Familiarity with 3-D printing and its perceived relevance, % of survey respondents, n = 100



Source: McKinsey survey of global sample of 100 manufacturing executives, 2014

expected to increase on the back of growing laser power, higher numbers of lasers, and better projection technology. All of that will serve to reduce expensive machine time.

Our research on sintering-based printers examined two possibilities. In the "base" scenario, costs remain largely at their present level and companies come to understand the benefits of additive manufacturing only gradually. In the "market shock" scenario, printing costs fall precipitously—say, by 30 or even 50 percent over a ten-year period. Early signs of these cost-shifting dynamics can be seen in plastic sintering. One new Chinese entrant is already selling comparable selective laser-sintering machines at a price 25 to 30 percent below that of a leading Western supplier. Asian players are offering technically comparable nylon powders at prices that are more than 30 percent lower than those of their Western rivals. Price undercutting is less dramatic for nontraditional blends, such as carbon-filled powders used in strong but lightweight parts (those in racing cars, for example).

While there have been false dawns before for 3-D printing as a whole, companies cannot afford to be complacent. That will

Exhibit 2

The wide range of possible 3-D applications suggests that market penetration could increase dramatically.

New products and delivery models	New designs, enabled by cheap geometric complexity, that reduce weight and offer geometry-driven performance (eg, fluid dynamics) New delivery models (eg, mass customization)
Tooling	Savings on custom tooling that would otherwise amortize poorly over low production quantities Conformal tooling[1] enabled by the geometric complexity that 3-D printing affords
Assembly	Reduced assembly steps via printing integrated assemblies, cutting labor expenses and improving quality control
Inventory	Reduced inventory (legacy or spare parts) thanks to printing on demand
Improved product life cycle	Faster time to market Leaner, more iterative approach to design, reducing impact of both design-based and commercial uncertainty

[1]Molds with geometrically complex cooling channels that shorten injection-molding cycle times.
Source: McKinsey analysis

be especially true if the expected benefits to innovation are not only magnified by cost reductions but also bring into scope whole new industries and product categories. CEOs and COOs above all need to examine the readiness of their companies for a future in which a range of integrated digital technologies (of which 3-D could be one of the most significant) will dominate manufacturing and competitors will probably be building additive manufacturing into their value chains. That means focusing on better organizational cohesion and considering partnerships with external organizations (such as local contract-printing bureaus) that have the necessary technical expertise.

Beyond the C-suite, companies should build a group of executive champions within the engineering, quality, operations, and procurement units. Some aerospace and medical-device companies, for example, already have teams scanning their entire design portfolios for parts that could benefit from this technology. Furthermore, the introduction of 3-D printing into complex manufacturing environments would require big changes in quality-assurance and control processes: companies would have to replace old protocols relying on extensive up-front testing and validation of traditional production tools, such as molds. Since additive manufacturing reduces or even eliminates the need for these tools, organizations must understand the steps needed to satisfy their quality requirements in the future.

The coming years will bring new opportunities and challenges. Companies with savvy executives who raise awareness, fill talent gaps, and build the necessary organizational capabilities will be well positioned to benefit from this breakthrough technology.

[1] Joe Jablonowski, Nancy Eigel-Miller, and Steve Kline Jr., *The world machine-tool output & consumption survey*, Gardner Research, 2014, gardnerweb.com.

[2] *Additive manufacturing and 3D printing, State of the Industry*, annual worldwide progress report, Wohlers Associates, 2014, wohlersassociates.com.

[3] For instance, electron beam melting (EBM), selective laser sintering (SLS), and direct metal laser sintering (DMLS). These additive-manufacturing approaches are arguably more relevant for manufacturing than filament extrusion (known as FDM) or inkjet techniques.

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Daniel Cohen is an alumnus of McKinsey's New York office, **Katy George** is a director in the New Jersey office, and **Colin Shaw** is a principal in the London office. The arguments in this piece are mainly derived from a previous article by Daniel Cohen, "Fostering mainstream adoption of industrial 3D printing: Understanding the benefits and promoting organizational readiness," *3D Printing and Additive Manufacturing*, June 2014, Volume 1, Number 2, pp. 62–9.

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Chemicals

Taming manufacturing complexity with advanced analytics

Patrick Briest, Valerio Dilda, and Ken Somers

A chemical maker uses advanced analytical techniques to identify—and seize—opportunities across its value chain. Better collaboration is a side benefit.

Manufacturers with complex operations often struggle to optimize production. Large chemical makers are a prime example. They face complexity in spades—such as volatile costs and prices, the need to manage multiple plants, and the reality that many products can be made from diverse (and often nonlinear) combinations of inputs. Advanced data modeling recently helped one global chemical maker to cut through all these problems in its flagship plant. Company experts in sales, production, and optimization assembled raw-material and product price curves, market-size forecasts, historical equipment-performance data, and more than 600 decision variables into a mathematical model describing the plant's production yields under various operating conditions.

The resulting model offers managers a precise understanding of the effects that variations anywhere along the value chain can have on the production network as a whole. The company can now, for example, easily fine-tune the mix of raw materials and finished products, as well as the routing of manufacturing flows, in real time—while constantly identifying opportunities for improvement (exhibit). All told, these changes increased the plant's EBIT[1] returns by more than 50 percent, and the company is now applying this model across its full factory network so that production capacity can shift in modular fashion. A major side benefit: better cross-unit collaboration, since business decisions that were formerly siloed and subjective are now made with a clearer sense of the constraints and trade-offs involved.

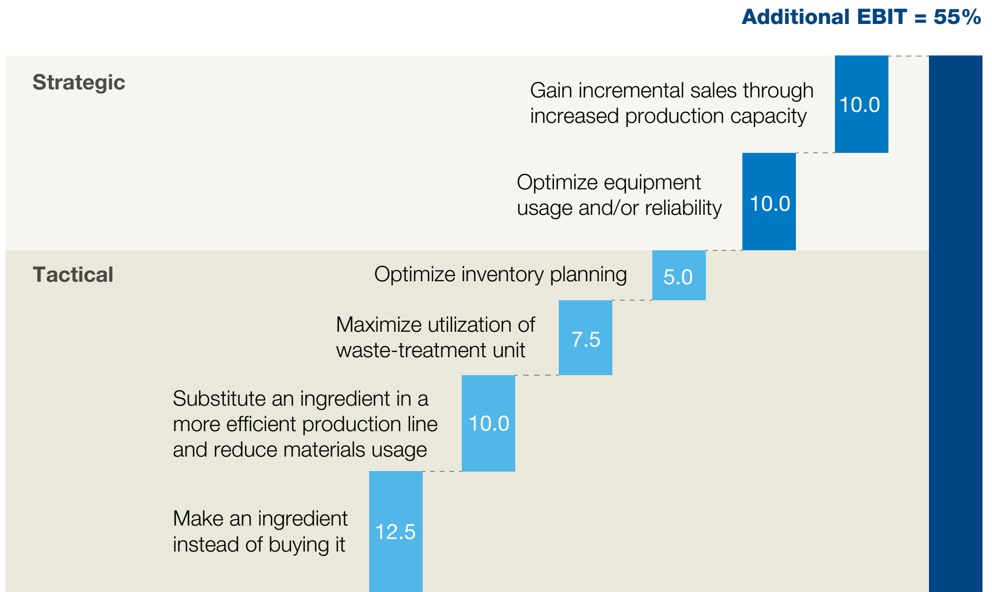
[1] Earnings before interest and taxes.

Patrick Briest is a specialist in McKinsey's Düsseldorf office, **Valerio Dilda** is an associate principal in the Paris office, and **Ken Somers** is a master expert in the Antwerp office.

Exhibit

In one case, data modeling identified opportunities to increase earnings by 55 percent.

Value captured by data-modeling levers, example of global chemical maker, % of increased EBIT[1]



[1] Earnings before interest and taxes.

Source: McKinsey analysis

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Consumer products

Why yesterday's channel practices won't win over emerging-market consumers

Marcello Berland and Bruno Furtado

Latin American consumer-product companies that use sophisticated data-oriented tools achieve superior price differentiation.

The days have long since passed when emerging markets, the wellspring of future growth for consumer-goods companies, were backwaters where traditional channel strategies sufficed. We looked at the pricing strategies of 43 major units across 33 leading consumer-product companies in Latin America, identifying the top 25 percent. These were more successful in differentiating their prices: they maintained higher-than-average unit-price growth while increasing sales at a rate above the market average.[1]

We found that these companies were around 1.5 to 3.0 times more likely than their peers to deploy quantitative and advanced data-analytics approaches, such as price elasticity and conjoint surveys, to set price levels (exhibit).[2] More commonplace practices, such as gathering insights from the field or reviewing price gaps against competitors, were less likely to produce a pricing edge. As consumers move up the development curve in Latin America and other emerging markets, the playing field is getting steeper, and sophisticated channel approaches will be needed if companies hope to stay ahead. ○

[1] In conjunction with AC Nielsen, we surveyed approximately 150 executives at units of 33 leading consumer-packaged-goods companies across Latin America.

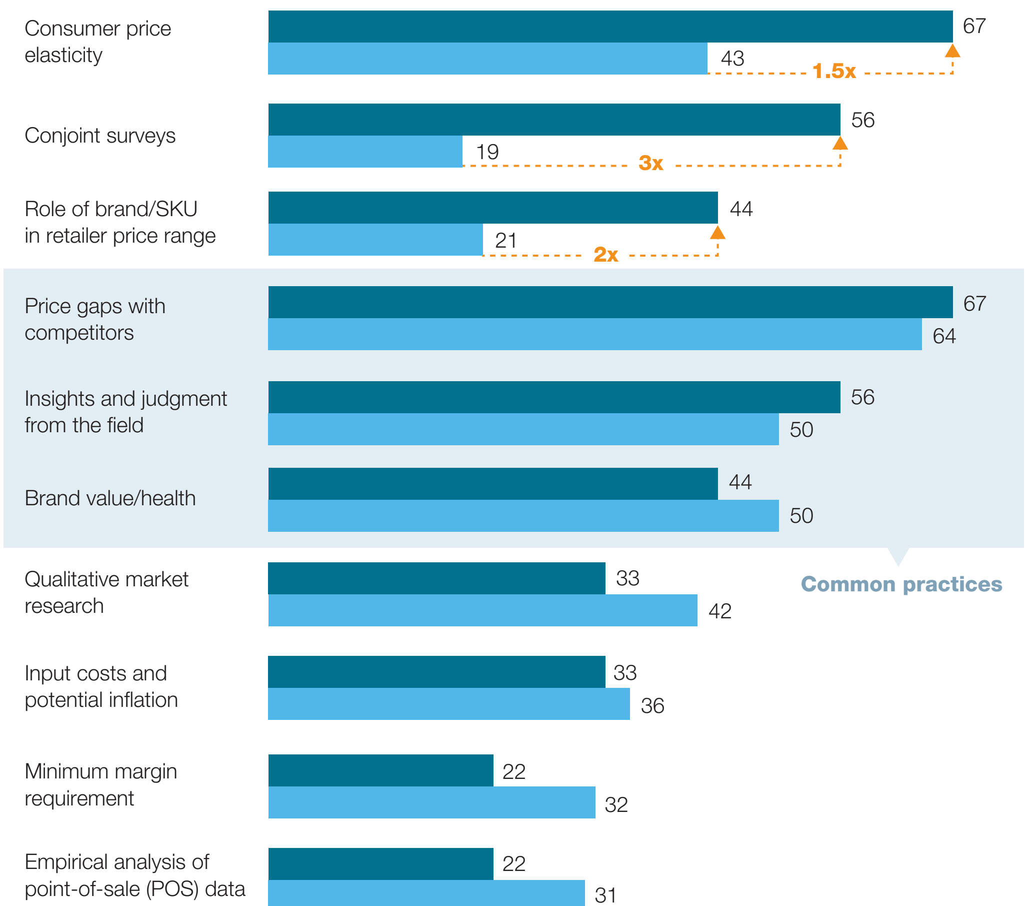
[2] Top-performing companies in pricing strategy increased their sales by 1.9 percentage points above the market average. Growth in unit prices was 0.6 percentage points ahead of the category average.

Marcello Berland is an expert in McKinsey's São Paulo office, where **Bruno Furtado** is a principal.

To download the full report, see "Survey results: For packaged goods companies, winning in Latin America is worth more than you think," on mckinseyonmarketingandsales.com.

Exhibit

Winners rely more on quantitative and advanced data-analytics approaches to determine their pricing strategy.



Source: McKinsey customer and channel-management survey, Latin America, 2013

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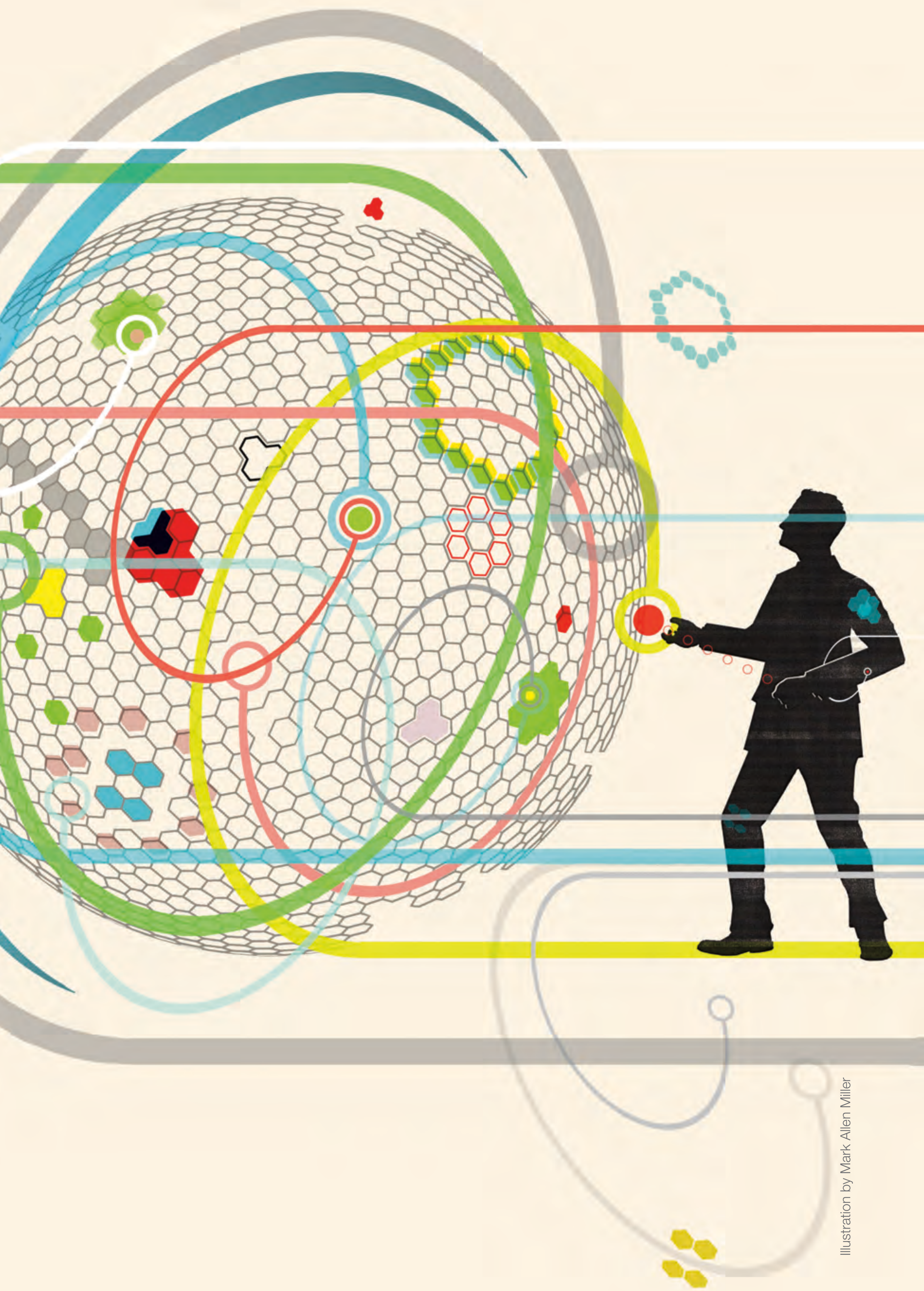


Illustration by Mark Allen Miller

Harnessing the power of shifting global flows

Jacques Bughin, Susan Lund, and James Manyika

Here's what countries and executives need to know to benefit from the next—and markedly different—wave of globalization.

There has been a steady drumbeat of reports in the press and elsewhere that the heyday of globalization is over.[1] Since the financial crisis, growth in global trade volumes has slowed. Global financial flows are hanging at levels almost 70 percent below their peak.[2] Meanwhile, rising wages in China and shifting energy dynamics have challenged lengthy global supply chains.[3]

These crosscurrents are real, but our research suggests that they won't undermine globalization's long-term trajectory.[4] Cross-border flows of goods, services, finance, people, data, and communication will expand in all plausible scenarios during the years ahead (Exhibit 1). What is changing dramatically is the *mix* of flows. Their networks and structures are evolving rapidly and will be radically different from those of the past.

Foreign direct investment and trade in goods used to account for the greatest volume of flows, which mostly streamed between advanced economies. Trading partners were primarily neighboring or nearby countries. Today, this trend is being upended: emerging markets are

[1] See, for instance, Ian Bremmer, "The new rules of globalization," *Harvard Business Review*, January–February 2014, Volume 92, Number 1–2, hbr.org.

[2] For more, see *Global flows in a digital age: How trade, finance, people, and data connect the world economy*, McKinsey Global Institute, April 2014, on mckinsey.com.

[3] See Katy George, Sree Ramaswamy, and Lou Rassey, "Next-shoring: A CEO's guide," *McKinsey Quarterly*, January 2014, on mckinsey.com.

[4] For more, see footnote 2.

swiftly closing the globalization gap with advanced economies, and emerging players are now sources of consumption and innovation as well as production. New regional hubs are coalescing around the world to facilitate flows of goods, services, and money in an expanding global network. And new types of flows are growing rapidly: information is now gushing to often-underserved areas (such as western Africa, which is part of a network of new international undersea-cable routes), while knowledge-intensive goods have become the fastest-growing traded flow across the globe.

Digitization is at the heart of these changes because it enables new business models using cheaper and modular cloud storage, video

Exhibit 1

Global flows of goods, services, and finance reached nearly $26 trillion in 2012 and could triple by 2025.

Flow of goods   Flow of services   Financial flows

Flows of goods, services, and finance, 1990–2012, $ trillion[1]

Scenarios in 2025, $ trillion[1]
(not to scale with chart on the left)

[1] In nominal dollars.
[2] Figures do not sum to total, because of rounding.

Source: International Monetary Fund Balance of Payments; UN Comtrade; World Trade Organization; McKinsey Global Institute analysis

streaming, or talent-sharing services. Digitization enables some companies to grow quickly into what we call hyperscale businesses, extending their reach to global markets at low cost. (For more, see "Competition at the digital edge: 'Hyperscale' businesses," forthcoming on mckinsey.com.) Digital technologies, meanwhile, transform flows of physical goods into digital flows that can not only be traded farther and faster but also tracked precisely, which will bolster global supply chains. Finally, cheaper computing power and communications technologies are becoming the building blocks of robust digital platforms that increase the global participation of otherwise excluded small and midsize companies (see sidebar, "The new shape of globalization").

Governments (which are responsible for shaping trade policies) and companies should take close note of the shifting landscape and move quickly to adapt. The winners in the new era of globalization will be organizations that can reallocate resources while quickly adopting strategies and policies to take advantage of the trends.

The globalization gap

Globalization boosts GDP growth and opens avenues to rising corporate profits. We examined this dynamic and discovered that when countries increased their level of globalization by 1 percent (as measured by the scale of flows of goods, services, finance, people, and data relative to the size of their GDPs or populations) the rate of GDP growth rose by about 10 to 15 basis points, a material figure. Overall, we estimate that as much as one-quarter of global GDP growth comes from global flows. It's important for leaders of companies and countries to understand their relationship with the shifting nature and pace of globalization.

Advanced-economy multinationals

Companies from advanced economies have thus far been globalization's leaders. Some generate more revenue outside their home countries than within them. But greater changes are looming. Despite a leading position in globalization, most such multinationals are still underweight in emerging markets, which represented only 19 percent of their revenues in 2013 (Exhibit 2). Trade in developing markets

The new shape of globalization

Globalization has transcended the exports and the lightning-quick global flows of money that characterized it until recently. To understand the changes under way, we created a database of inflows and outflows of five types of cross-border flows—goods, services, finance, people, and data and communications—for 195 countries from 1980 to 2012. Then we conducted an econometric analysis of the link between global flows and economic growth, and we created an index that measures each country's participation in global flows.[1] Finally, using case studies and microeconomic data, we identified how participation in global flows is evolving for countries and companies of all sizes. Five major findings emerged from our analysis:

1. **Global flows are rising rapidly in value—**and will grow further in all economic scenarios over the coming decade. In 2012, flows of goods, services, and finance across borders reached nearly $26 trillion, or 36 percent of global GDP, up from $5 trillion, or 23 percent of global GDP, in 1990. Even using conservative assumptions, our scenarios show that global flows could be double or even triple their current size by 2025.

2. **Digitization is transforming and sharply accelerating global flows.** Cross-border Internet traffic has grown by nearly 1,800 percent since 2005 and could increase almost eight times further by 2025. This rise is transforming the other types of flows in three ways: by transforming flows of physical goods into new digital ones, by making it possible to track physical goods digitally, and by creating digital platforms (such as Amazon and eBay) that enable small companies and even individual entrepreneurs to play on a global stage.

3. **Knowledge-intensive flows are growing faster than labor- or capital-intensive ones.** The common perception of globalization is that it is driven by low-wage labor arbitrage or the need to access resources. But knowledge-intensive goods and services—embedded with technology and know-how—already account for half of all cross-border flows and are growing faster than any of the others.

4. **New dynamics in the structure of flows.** Flows used to occur mainly between advanced economies. Today, emerging economies account for 38 percent of the global flows of goods, services, and finance—more than triple their share in 1990. Trade in goods between emerging economies is now nearly 25 percent of overall world trade, up from just 6 percent in 1990.

5. **Global connectedness promotes GDP growth.** Global flows account for 15 to 25 percent of world GDP growth every year. We find strong evidence that they speed it up. In addition, countries with more connections to other nations in global-flow networks will see a 40 percent greater impact on GDP growth than will countries on the periphery, with fewer connections.

[1] The index ranks countries by the size of their inflows and outflows of goods, services, finance, people, and data, adjusted for the size of the country. Each of the five types of flows is weighted equally.

will continue to swell—by 2025, it will represent 47 percent of global consumption. Multinationals should accelerate their inroads to secure a strong position in global commerce. And they'll need to do so quickly because they face a new breed of competitor: multinationals that are rising in emerging countries and hope to win their own place on the global stage.

Traditional global companies took years to deploy resources on a global scale. They will need to accelerate that pace not only to keep up with players from emerging markets but also because digitization is ratcheting up the global economy's clock speed. Consider how digitally born companies, such as Facebook and Google, now earn more revenue from global markets than from the United States.

Multinationals from emerging markets

A number of companies in emerging markets are embracing globalization—swiftly expanding abroad and gaining market share, particularly in other emerging economies. A telling signpost: the value of cross-border goods flows between emerging markets increased from 6 percent of all global trade in 1990 to 24 percent in 2012. Even so, only 40 percent of the revenue of the 100 largest listed companies in emerging markets comes from overseas, versus 51 percent for the largest listed companies in advanced markets. Moreover, while multinationals from emerging markets have expanded into the United States and Europe, they have done so largely through M&A. Such companies have yet to distribute their operations globally, and the data show that their supply chains are more local than those of their peers in advanced economies (Exhibit 3).

Small and midsize companies

Smaller enterprises add a new dimension to global competition as they begin expanding across borders. Internet platforms are empowering these "micromultinationals," enabling them to find customers, suppliers, funding, and talent around the world at lower cost. One data point: digital platforms can cut the cost of exporting by 83 percent as compared with traditional export channels.[5] Even small companies can access international markets: in 2013, eBay analyzed a sample of its small sellers and found that more than 95 percent exported to other countries, compared with an average of less than 25 percent of traditional small businesses—and eBay merchants

[5] See *Commerce 3.0 for development: The promise of the Global Empowerment Network*, eBay, 2013, ebayinc.com.

export to customers not just in one market but in dozens. Still, most smaller companies today haven't taken full advantage of digital capabilities in developing their global reach. Across the world, they consistently account for a smaller share of exports than of value added.

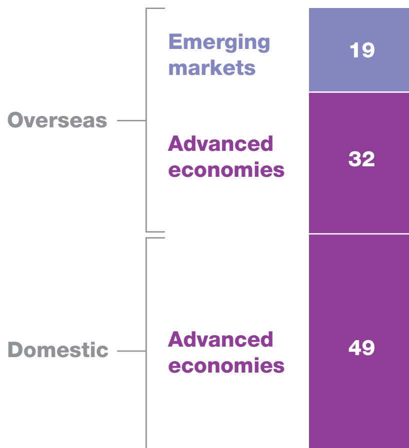
Countries

Open, developed economies have been both the rainmakers for globalization and its largest beneficiaries. The case of Belgium illustrates the challenges they face going forward. The country is globally connected, with trade flows three times greater than its share of world GDP, and globalization is responsible for a third of GDP growth. According to our research, the country's central position in the network of flows makes it more likely to capture benefits from trade than other countries are. Yet Belgium is trending toward

Exhibit 2

Large multinational corporations in advanced economies are missing out on the opportunities arising in emerging markets.

Share of overseas and domestic revenues for multinational corporations,[1] 2013, % of total



[1] For companies with headquarters in advanced economies; largest 100 companies from the 2013 Fortune Global 500 list that reported revenue by geographic segment in that year and had revenue from overseas markets.

Source: Annual reports; Fortune 500; McKinsey Global Institute analysis

a current-account deficit, and in recent years, it may have under-invested in areas that would take advantage of that position—not only in traditional trade, but also (and particularly) for new flows. Furthermore, while Belgium's physical port infrastructure in Antwerp still compares well with that of neighboring Rotterdam, the Netherlands has invested dramatically in a virtual-port infrastructure in Amsterdam, which is now a leader in cross-border data flows.

New strategic options

Progress toward globalization's new era will be uneven for economies and companies alike. Since many types of organizations could deepen their cross-border activities, the priorities include combining a more intense kind of digitization with a network view of the global landscape, seeking opportunistic positioning in hubs bursting with talent and capabilities, taking full advantage of intangible assets that can help companies differentiate themselves among new customers and markets, and becoming better attuned to the emerging new cross-border competition.

1. Nurture global ecosystems

Digital platforms enable companies to expand rapidly and profitably to customers far beyond home markets, while nurturing new ecosystems that span borders and connect clusters of suppliers, distributors, and after-sales services. The benefits will include lower-cost procurement and better preemptive maintenance for plants, reducing downtime. Boeing's Edge offering, for instance, brings together the vast amounts of data the airline business generates, thus creating a real-time information network linking aircraft assets with maintenance groups, operations staff, suppliers, and passengers.

Other global ecosystems are facilitating innovation by linking researchers, financiers, and even customers to crowdsource new ideas. AstraZeneca's digital open-innovation platform, for instance, aims to connect the company with scientists and academics at research institutes worldwide. German equipment maker Bosch uses its innovation portal to connect with individual and institutional researchers in key business areas, such as power tools, new materials and surfaces, and the automotive aftermarket.

2. Locate in the best hubs

Many countries and cities have established themselves as hubs for specific types of flows. Locating within these vibrant centers can buttress a competitive advantage. Amsterdam, for instance, with some of the world's fastest and cheapest broadband connections, has become a magnet for Internet companies. Another hub, not far from Amsterdam, is Eindhoven's Brainport, which boasts a concentration of expertise for broadband deployment, applications, and other skills. With 8,000 researchers, developers, and entrepreneurs scattered among small and midsize companies and global players, Brainport accounts for a third of private R&D outlays in the Netherlands.[6] In density of patents, it is one of Europe's top three regions.

People flows will continue to be an important source of growth and innovation, and here the United States is top ranked. Immigration has long enabled US businesses to strengthen their competitive advantage by attracting global talent from every nation. The impact of foreign entrepreneurs in Silicon Valley is legendary: from 2006 to 2012, immigrants founded over 40 percent of all high-tech and engineering start-ups there.[7] Global flows also allow pockets of specialization to develop beyond high tech. In 2012, Switzerland—a global hub for knowledge on watch manufacturing—produced 95 percent of luxury watches (those priced at over 1,000 Swiss francs).[8]

Companies without a strong presence in influential hubs should consider moving operations to one or more of them. A leading example of the trend is Singapore, where many multinationals have located to be at the nexus of Asian flows of goods, services, and finance. Singapore has the world's highest density of regional head offices relative to GDP: more than half of all large foreign subsidiaries in emerging Asia outside China are located there. P&G, for example, chose it for the global headquarters of its beauty and baby-care divisions. Rolls-Royce moved its marine business from London to Singapore for the city's advantages as a shipping hub.

[6] "Science hubs: Brainport Eindhoven," EURAXESS The Netherlands, January 21, 2013, euraxess.nl.

[7] Vivek Wadhwa, AnnaLee Saxenian, and F. Daniel Siciliano, *America's new immigrant entrepreneurs: Then and now*, Kauffman Foundation, 2012.

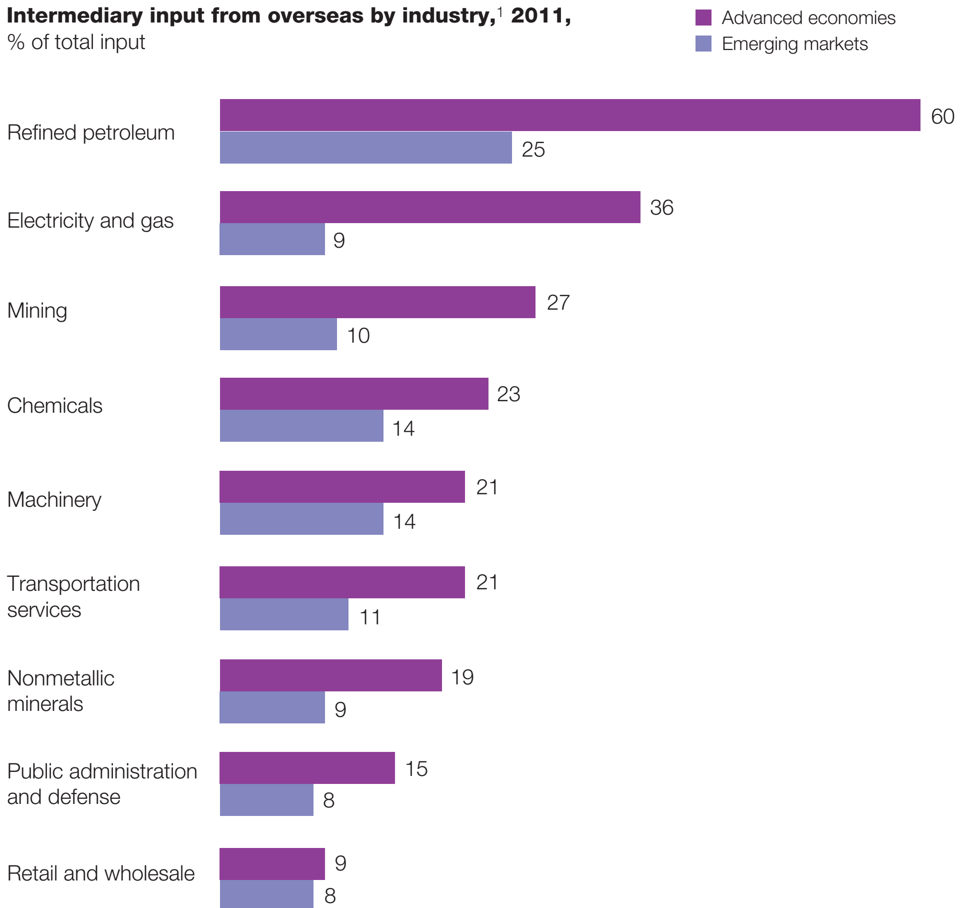
[8] Julie Mégevand, "Swiss watchmaking: Key figures," *Montres Le Guide*, Number 10, 2013–14, wthejournal.com.

3. Build digital platforms and exploit proprietary assets

Digital platforms are connecting companies and customers, suppliers and companies, talent and jobs, and entrepreneurs and funding—and in ways that were all but impossible only a decade ago. Effective platforms benefit both the participants using them and the companies operating them.

Exhibit 3

In many industries, emerging markets' supply chains are more local than those of advanced economies.



[1] Data for advanced economies = average of Germany, Japan, South Korea, and the United States; for emerging markets = average of Brazil, China, India, and Russia.

Source: World Input-Output Database; McKinsey Global Institute analysis

E-commerce sites that connect businesses to consumers are signature examples of the new platform power. Global e-commerce sales reached over $1.2 trillion in 2013, nearly 2 percent of global GDP.[9] E-commerce provides new access to consumers for companies of all stripes and offers buyers more choice (and often lower prices). Alibaba, China's leading e-commerce platform, includes B2B, B2C, and P2P (peer-to-peer) marketplaces. It posted merchandise worth approximately $248 billion in 2013. (For further information on the evolution of China's digital economy, see "China's rising Internet wave: Wired companies," on page 68.) These online platforms are highly profitable as well.

Other platforms now channel flows of knowledge and expertise to companies around the world. One well-known example is InnoCentive, an online innovation-crowdsourcing site that has reported a membership of 300,000 registered "solvers" in over 200 countries. Today, it has helped large R&D-intensive companies (in industries such as pharmaceuticals, biotechnology, and consumer products) to crack as many as one-third of a sample of knotty problems they had previously considered unsolvable.[10] Meanwhile, the staffing websites launched by oDesk and Elance, both based in Silicon Valley, connect employers with freelance professionals around the world. The two companies merged in 2013, creating a platform used by 2 million businesses and 8 million freelancers.

Many companies have assets that could be deployed more effectively to build such platforms. These may be tangible assets, such as routers and servers, logistics networks, or distribution centers. But they can also be intangible brands, data, and knowledge. The brand position of companies such as Citigroup and Nike undergirds their global reach, as do their data and knowledge of customer preferences around the world. Starwood Hotels & Resorts, the global hospitality group, is brandishing its digital expertise to expand its brand and customer loyalty. Its mobile app books rooms in any of the chain's hotels, offers personalized suggestions for dining and entertainment, and even allows users to check in and to open the doors of hotel rooms remotely (for more, see "Redefining service innovation at Starwood," on page 63).

[9] "Worldwide ecommerce sales to increase nearly 20% in 2014," eMarketer, July 23, 2014, emarketer.com.

[10] Karim R. Lakhani, Lars Bo Jeppesen, Peter A. Lohse, and Jill A. Panetta, "The value of openness in scientific problem solving," Harvard Business School working paper, number 07–050, January 2007, hbs.edu.

Digital assets are especially important to the new wave of globalization. Our research shows that tangible and intangible digital assets will account for roughly a third of total global GDP growth in the future.[11] Consider the extent to which Google's search algorithm or Amazon's recommendation engine underwrites global knowledge and bolsters commerce.

4. Be ready for new competitors and challenges to business models

Along with helping smaller businesses everywhere and companies from emerging markets increase their participation in global flows, digitization will put tremendous pressure on business models (for a sector-specific view, see "A road map to the future for the auto industry," on page 42). To succeed in the new environment, companies will need to define and choose their businesses, their customers, their suppliers, and their ecosystems quite nimbly.

Already, we can see how Internet-enabled lower barriers to entry are creating new twists in competition: companies that initially disrupted entire industries with first-stage digital technologies are now being disrupted themselves. Web-based travel companies launched in recent decades, for example, now face tough and growing competition from a new digital business model represented by app- and web-based Airbnb. The peer-to-peer hospitality site, launched in 2008, now offers rooms in more than 34,000 cities worldwide. Airbnb's customers research, reserve, pay for, and review their lodgings—bypassing traditional digital travel sites.

New forms of competition will arise from three sources. First, established companies from emerging markets will expand to operate on a global scale. Second, smaller companies around the world can now compete in niche markets globally, thanks to digital platforms. Finally, new competition will come from players outside traditional industries—as is the case, for example, with e-commerce companies, like Alibaba, which are disrupting banking and payment systems.

The potential for disruption shouldn't be underestimated. According to research by the McKinsey Global Institute, the number of Fortune

[11] See Jacques Bughin and James Manyika, "Measuring the full impact of digital capital," *McKinsey Quarterly*, July 2013, on mckinsey.com.

Global 500 companies with headquarters in developed economies will fall to less than 55 percent by 2025, from almost 75 percent in 2013.[12] Seven out of ten new large companies will come from emerging markets over the same period.

Small entrepreneurial companies from emerging markets already are joining the fray and showing the potential to grow. One of the new breed is Jumia, a Nigerian e-commerce company that now operates in seven other African countries, including Egypt, Ivory Coast, Kenya, and Morocco. M-Pesa, a now-famous mobile-money service that started in Kenya, currently has 19.3 million users.[13] What's less known is how M-Pesa is disrupting banking and payment businesses in a growing number of countries: it has expanded across Africa and South Asia and in 2014 entered Eastern Europe. Start-ups active in peer-to-peer lending are another potentially disruptive segment in finance. Chile's Cumplo, China's Pandai, and Germany's Auxmoney all facilitate P2P loans, challenging a host of traditional financial institutions.

5. Create new businesses that combine and transform global flows

In the new era of globalization, pressure to create new business models and redefine the borders of companies and markets will increase because digital technologies make it possible to transform and recombine flows.

Many physical goods are now virtual thanks to digitization. Books and movies, for example, once moved from country to country solely by ship, truck, or train. Today, they can digitally whiz across the globe in an instant. This pattern of transformation may be only in its infancy. In some areas of manufacturing, for example, 3-D printing will probably have the same profile: product design files can be sent across the Internet, and goods will be "printed" locally rather than manufactured in one country and shipped to another. This development will create space for new business models and for companies that will become the Amazons or Alibabas of 3-D printed goods. (For more, see "Are you ready for 3-D printing?," on page 20.)

[12] For the full McKinsey Global Institute report, see *Urban world: The shifting global business landscape*, October 2013, on mckinsey.com.

[13] *Frontiers*, "Kenya's Safaricom to slash M-Pesa transaction fees," blog entry by Matina Stevis, *Wall Street Journal*, August 19, 2014, blogs.wsj.com.

Digital “wrappers” that embed information within a good or service can also increase the value of physical flows. Radio-frequency identification (RFID) technology is the best-known example. From 2005 to 2012, the use of tags to track shipments of goods has grown nearly three times faster than global goods flows.[14] These tags improve the efficiency of global supply chains by reducing losses in transit (in some cases, by up to 14 percent)—and they may cut inventory costs by up to 70 percent.[15]

In the growing global peer-to-peer arena, Etsy is an example of a company creating a new business model by straddling digital and physical flows. Its online global marketplace connects over 40 million buyers and sellers of artisanal goods and handicrafts. The company also wraps knowledge and other services into its distribution channel: it offers entrepreneurial education to artisans and has a partnership with the crowdfunding site Kiva to help finance the growth of their businesses.

Companies that have seen their global activities struggle in the wake of the financial crisis can take heart that what they have witnessed is likely to be only a pause and not a break in the progress of globalization. Yet they’ll need to up their game—and quickly. Traditional competitive engines are proving ill adapted to a world of flows moving at digital speed.

[14] Raghu Das and Peter Harrop, *RFID forecasts, players, and opportunities, 2014–2024*, IDTechEx, 2013.

[15] Aysegul Sarac, Nabil Absi, and Stéphane Dauzère-Pérès, “A literature review on the impact of RFID technologies on supply chain management,” Ecole des Mines de Saint-Étienne working paper, number 2009/2, March 2009.

Jacques Bughin is a director in McKinsey’s Brussels office; **Susan Lund** is a partner with the McKinsey Global Institute, where **James Manyika** is a director.

For more on this research, download the full report, *Global flows in a digital age: How trade, finance, people, and data connect the world economy*, McKinsey Global Institute, April 2014, on mckinsey.com.

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Illustration by Greg Mably

A road map to the future for the auto industry

Paul Gao, Russell Hensley, and Andreas Zielke

As the sector transforms itself, will the car keep its soul?

Automakers took center stage at the 1964 New York World's Fair. General Motors exhibited the Firebird IV concept car, which, as the company explained, "anticipates the day when the family will drive to the super-highway, turn over the car's controls to an automatic, programmed guidance system and travel in comfort and absolute safety at more than twice the speed possible on today's expressways."[1] Ford, by contrast, introduced a vehicle for the more immediate future: the Mustang. With an eye toward the segment that would later be named the baby boomers, the Ford Division's general manager (a not-yet-40-year-old engineer named Lee Iacocca) explained that the car brought "total performance" to a "young America out to have a good time."[2] Ford estimated it would sell 100,000 Mustangs during that first year; in fact, it would sell more than 400,000.

The marriage of an exciting car to an exuberant generation was clearly the right idea for Ford. And over the past 50 years, automobiles have continued to be our "freedom machines," a means of both transportation and personal expression. Even so, as the industry recognized, the automobile is but one element of a mobility system—an element governed by extensive regulations, constrained by a need for fuel, and dependent on a network of roadways and parking spaces. Automobiles are also a force for change. Over the past half century, their very success has generated pollution and congestion while straining the supply of global resources. The rapid surge of emerging markets, particularly China, has heightened these dynamics.

[1] Source materials for the 1964 New York World's Fair are available at nywf64.com.

[2] For a transcript of Lee Iacocca's remarks, see "Ford Mustang introduced by Lee Iacocca at the 1964 World's Fair," @Ford Online, posted on August 21, 2013, on at.ford.com.

Even more transformative change is on the way. Global competitive intensity will rise as Chinese players expand from their vast domestic market. Governments are examining the entire automotive value chain and beyond with an eye toward addressing externalities. Technological advances—including interactive safety systems, vehicle connectivity, and, ultimately, self-driving cars—will change the game. The automobile, mechanical to its soul, will need to compete in a digital world, and that will demand new expertise and attract new competitors from outside the industry. As value chains shift and data eclipses horsepower, the industry's basic business model could be transformed. Indeed, the very concept of cars as autonomous freedom machines may shift markedly over the next 50 years. As mobility systems gain prominence, and vehicles are programmed to drive themselves, can the soul of the car endure? This is just one of the difficult questions (see sidebar, "Challenging choices") that confront the automotive industry as a result of the forces described in this article.

The China factor

Fifty years of innovations in horsepower, safety, and rider amenities have helped automobile sales grow by an average annual rate of 3 percent since 1964. This is roughly double the rate of global population growth over the same period and makes for a planet with over one billion vehicles on its roads.[3] For the past 20 years, though, sales in North America, Europe, and Japan have been relatively flat. Growth has come from emerging markets—much of it in China, which over the past decade has seen auto sales almost triple, from slightly less than 8.5 million cars and trucks sold in 2004 to, estimates suggest, about 25 million in 2014. IHS Automotive predicts that more than 30 million vehicles a year will be sold in China by 2020. China's promise has attracted more players to the country, so margins will naturally compress. Yet the country's importance transcends these short-term results. In the decades ahead, China's emergence as a dominant market and production center should have major implications for how cars are designed. Chinese tastes and standards, particularly at the luxury end, where automakers are notably raising the bar, will have a global influence.

[3] John Sousanis, "World vehicle population tops 1 billion units," Ward's Auto, August 14, 2011, wardsauto.com.

China's emergence as the world's largest automotive market also is fueling a burgeoning domestic auto industry to compete alongside more established global players. For decades, Japanese, North American, and European OEMs formed a triad that, at its height, produced an overwhelming majority of the world's automobiles (Exhibit 1). South Korea has since taken its place among the automotive leaders, capturing over 10 percent of the world market in the past 15 years. The growth of Chinese players is changing the equation—and things are moving fast. Ten years ago, only one Chinese OEM, Shanghai Automotive Industry Corporation, made the Fortune Global 500. The 2014 list has six Chinese automakers.[4] Given surging local demand, the Chinese may just be getting started. While South Korean OEMs Hyundai and Kia have created brands with global reach, China's OEMs do not yet export automobiles in a significant way. With strong local demand as a base, a number of Chinese automakers will probably consolidate, become better able to serve their domestic market, and then seek to achieve an international impact, perhaps through joint ventures, partnerships, or other combinations with global companies.

Regulating from 'well to wheels'

Governments have been driving automotive development for decades. Initially, they focused on safety, particularly passive safety. The process started with seat belts and padded dashboards and moved on to airbags, automotive "black boxes," and rigorous structural standards for crash-worthiness, as well as requirements for emissions and fuel economy.

More recently, the automobile's success has strained infrastructure and the environment, especially as urbanization has accelerated. Brown haze, gridlock, and a shortage of parking now affect many urban areas in China, as they do in other cities around the world. Municipalities have begun to push back: Mexico City's *Hoy No Circula* ("no-drive days") program uses the license-plate numbers of vehicles to ration the number of days when they may be used, and dozens of cities across Europe have already established low-emission zones to restrict vehicles with internal-combustion engines.

[4] The Fortune Global 500 issue (July 2014) lists Shanghai Automotive Industry Corporation (now known as SAIC Motor), China FAW (First Automobile Works) Group, Dongfeng Motor Group, Beijing Automotive Group, Guangzhou Automotive Industry Group, and Zhejiang Geely Holding Group. For more, see fortune.com/global500.

Challenging choices

Clearly, the issues at play in the automotive industry are interrelated. Emerging economies and widespread urbanization will not only affect global sales and the competitive intensity of the industry but also help to shape its digitization. Regulations will continue to compel innovation. And self-driving technology—one of the industry's greatest disruptions in the last hundred years—will play out differently in different markets and regions, depending on their regulatory, competitive, and customer landscape. Interrelated uncertainties about these forces will create challenging questions for industry leaders.

Emerging markets. What's our strategy for China as annual sales there increase to 30 million vehicles a year by 2020 and its aftermarket blossoms? How will we respond if competition in China becomes too intense? Which other emerging markets demand our focus now?

Demand constraints. To what extent do our future growth plans incorporate the shifting attitudes of younger consumers toward car ownership, the impact of rapid urbanization, and efforts to fight congestion and other regulatory trends that could constrain demand?

Ownership models. How could developments such as car sharing change who purchases our vehicles, how they are used, and when people and organizations buy them?

Competencies and differentiation. What's our plan for sourcing the digital talent we need? How can we ensure that the soul of the car, as reflected in our brand, endures—even as our offerings become more digital and more autonomous?

Connectivity. What value can we contribute and capture in an environment of increasingly networked mobility? What killer applications can we deliver to meet growing demand for integrated transportation, active safety, and seamless communication?

Mandated standards. What technology portfolio (engines, energy sources, and lightweight materials) will best address increasingly stringent emissions and fuel-economy requirements around the world—and still keep our customers in different segments and geographies happy?

Engaging the public. As the scope of regulation expands beyond "well to wheels" and as debates about congestion, pollution, carbon emissions, and safety intensify, how can we contribute to the dialogue? How can we best ensure a fair hearing for the social and economic benefits of mobility and an equitable distribution of regulatory burdens across the value chain?

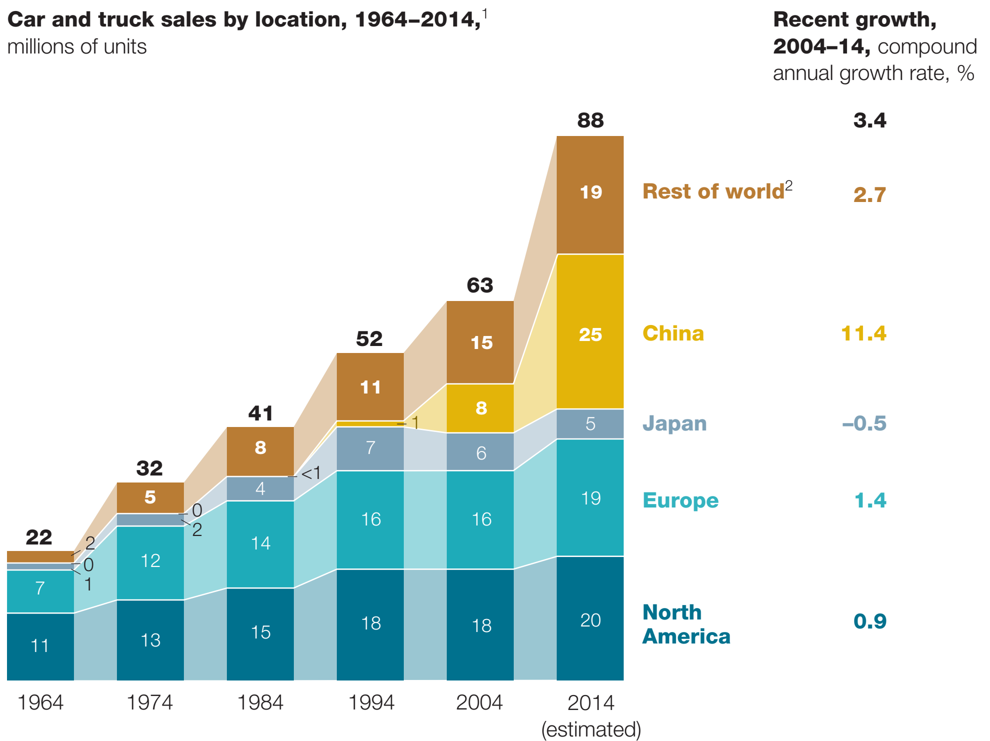
China too is acting. Influenced by its dependence on foreign oil and by urban-pollution concerns, the government has indicated that it favors electric vehicles, even though burning domestic coal to power them can leave a larger carbon footprint.[5] In Beijing, a driver wishing to purchase a vehicle with an internal-combustion engine must first enter a lottery and can wait two years before receiving a license plate. Licenses are much easier to get for people who buy state-approved electric vehicles.

We expect vehicle-use restrictions to grow more stringent as the level of urbanization increases. Regulators are considering a more aggressive "well to wheels" approach to gauge the social impact of automobiles across the product life cycle rather than focusing on

[5] Alice Park, "Why electric cars are more polluting than gas guzzlers—at least in China," *Time*, February 14, 2012, time.com.

Exhibit 1

Global motor-vehicle sales have grown by 3 percent a year for the past two decades, with substantial variation in regional growth.



[1] Estimate of 1964–2004 data based on geographic sales trends of subsegments. Figures may not sum to total, because of rounding.
[2] Eastern Europe, Mexico, Middle East, South America, and South Korea.

Source: IHS Automotive/Polk; Ward's Auto InfoBank; McKinsey analysis

the automobiles themselves. This approach requires authorities to make an integrated assessment of the costs and effects of extracting, processing, and delivering a fuel or energy source to automobiles ("well to tank") and of using that fuel or energy source and generating emissions ("tank to wheels").

For automakers, these developments mean a more challenging environment in which the industry's plans for growth and mix of vehicles could collide with regulatory priorities. It could also lead to a new type of segmentation. The reality of zero tailpipe emissions could result in cars categorized by use. Instead of one type of vehicle meant to do everything, smaller vehicles with no tailpipe emissions could be designed specifically for urban travel. Larger, extended-range vehicles could be used for longer routes.

Regulation would also create new opportunities beyond traditional industry competencies. For example, some automakers are investigating potential plays across the value chain—such as developing alternative fuels or investing in wind farms to generate power for electric vehicles—to offset the emissions created by the vehicles they sell.

In any event, the automotive industry should expect to remain under regulatory scrutiny, and future emissions standards will probably require OEMs to adopt some form of electrified vehicle.[6] Indeed, we believe that regulatory pressures, technology advances, and the preferences of many consumers make the end of the internal-combustion engine's dominance more a matter of "when" than of "if." The interplay of those forces will ultimately determine whether range-extended electric vehicles, battery electric vehicles, or fuel-cell electric vehicles prevail.

Digital disruption

The car of the future will be connected—able not only to monitor, in real time, its own working parts and the safety of conditions around

[6] For more on the global prospects for energy and conservation, see Steve Chen, Maxine Fu, and Arthur Wang, "Seizing China's energy-efficiency opportunity: A case study," *McKinsey Quarterly*, June 2013, on mckinsey.com; and David Frankel, Stefan Heck, and Humayun Tai, "Sizing the potential of behavioral energy-efficiency initiatives in the US residential market," McKinsey Global Institute, November 2013, available for download on mckinsey.com.

it but also to communicate with other vehicles and with an increasingly intelligent roadway infrastructure.[7] These features will be must-haves for all cars, which will become less like metal boxes and more like integrators of multiple technologies, productive data centers—and, ultimately, components of a larger mobility network. As every vehicle becomes a source for receiving and transmitting bits of information over millions of iterations, safety and efficiency should improve and automakers should be in a position to capture valuable data. Electronic innovations have accounted for the overwhelming majority of advances in modern vehicles. Today's average high-end car has roughly seven times more code than a Boeing 787.[8]

Digital technology augurs change for the industry's economic model. Over the past decades, automakers have poured their cost savings into mechanical, performance-oriented features, such as horsepower and gadgetry, that allow for higher returns. But that dynamic is shifting; in the United States, a squeeze is developing as content requirements of cars in emissions and safety continue to rise while consumers pay no more for these features than they did a decade ago.[9]

While it's unlikely that regulatory and competitive pressures will abate, the shift from mechanical to solid-state systems will create new opportunities to improve the automakers' economics. The ability to analyze real-time road data should improve the efficacy of sales and marketing. Digital design and manufacturing can raise productivity in a dramatic way: big data simulations and virtual modeling can lower development costs and speed up time to market. That should resonate with customers conditioned to the innovation clock speed of consumer electronics, such as smartphones.

Common online platforms can connect supply and demand globally to increase the efficiency of players across the supply chain. Embedded data sensors should enable more precise monitoring of the performance of vehicles and components, suggesting new

[7] For more, see "What's driving the connected car," September 2014, on mckinsey.com.

[8] *Digits*, "Chart: A car has more lines of code than Vista," blog entry by Brian R. Fitzgerald, *Wall Street Journal*, November 11, 2013, blogs.wsj.com.

[9] See Russell Hensley, Srikant Inampudi, Hans-Werner Kaas, and John R. S. Newman, "The future of the North American automotive supplier industry: Evolution of component costs, penetration, and value creation potential through 2020," March 2012, available for download on mckinsey.com.

opportunities for lean-manufacturing techniques to eliminate anything customers don't value and dovetailing with the digitization of operations to boost productivity, including the productivity of suppliers, in unexpected ways.[10] As automobiles become more digitally enabled, expect connected services to flourish. When the demands of driving are lifted, even the interiors of vehicles may give automakers opportunities to generate revenue from the occupants' connectivity and car time.

The industry's digitization will create challenges as well as opportunities for OEMs. Disruptive technologies will give companies a chance to leapfrog existing automotive leaders whose competence lies in established ones. Attracting talent will be more difficult as the core of automotive research and engineering migrates to software-driven innovation hubs, such as Silicon Valley, Tel Aviv, or Bangalore. And acquiring actionable data will become increasingly critical for the design and operation of systems, drivetrains, safety features, and more. The most difficult challenges may be cybersecurity and emerging regulatory oversight. In the United States, for example, the National Highway Traffic Safety Administration (NHTSA) recently announced that it may make vehicle-to-vehicle communications mandatory.[11] Among other implications, this move would call into question whether and to what extent OEMs can protect their driver-generated data and keep them proprietary.

Rethinking ownership

Technology and connectivity pose the question of whether it's necessary to own an automobile. Car sharing is a prominent example: the consumer pays to use vehicles only as needed and forgoes the responsibilities—and benefits—of individual ownership. Car-sharing services, which allow people to make a reservation at the tap of a personal mobile device, are expected to grow significantly in the next two years, with dramatic increases in the number of users and in revenues.[12] These developments also defy the

[10] See Ewan Duncan and Ron Ritter, "Next frontiers for lean," *McKinsey Quarterly*, February 2014, on mckinsey.com.

[11] See National Highway Traffic Safety Administration 49 CFR Part 571, "Federal Motor Vehicle Safety Standards: Vehicle-to-Vehicle (V2V) Communications," August 2014, gpo.gov.

[12] See Andreas Cornet, Arnt-Philipp Hein, Detlev Mohr, Florian Weig, and Benno Zerlin, "Mobility of the future: Opportunities for automotive OEMs," February 2012, available for download on mckinsey.com.

very notion of a car as a personal, autonomous machine. Already, "millennials" (the 18–34 demographic) appear to place less importance on car ownership than previous generations do. They are more open to sharing cars and to the rapidly growing number of "mobility services," such as Uber and Lyft.

Yet increased car sharing does not necessarily translate into fewer car sales. Our analysis suggests that as it becomes more common, both car usage and wear and tear will rise in turn. The average distance driven per person probably will not decrease; in fact, it may creep up. We would expect a broad car-ownership regime to include a variety of vehicle types, at both ends of the spectrum: not only more utilitarian, almost "vandal-proof" fleet cars for shared rides but also higher-performance "fun" cars for those who still enjoy being behind the wheel for a Sunday drive. Often, the same drivers will be in both segments—just as, for example, a consumer may purchase fast food for some meals but still enjoy a Michelin-starred restaurant for special occasions. In an era of megacities and congested urban areas, personal-mobility services will help transportation become more flexible.

Autonomous vehicles and the soul of the car

Currently, human error contributes to about 90 percent of all accidents,[13] but autonomous vehicles programmed not to crash are on the horizon. To be sure, some technological issues remain, emissions issues will linger, and regulators are sure to have a say. Furthermore, combining autonomous and nonautonomous vehicles in a single traffic mix will be a significant challenge. The most difficult time is likely to be the transition period, while both kinds of cars learn to share the road before self-driving ones predominate. ("Self-drive only" lanes and dedicated roadways might be the first step.) The technology, though, is no longer science fiction.

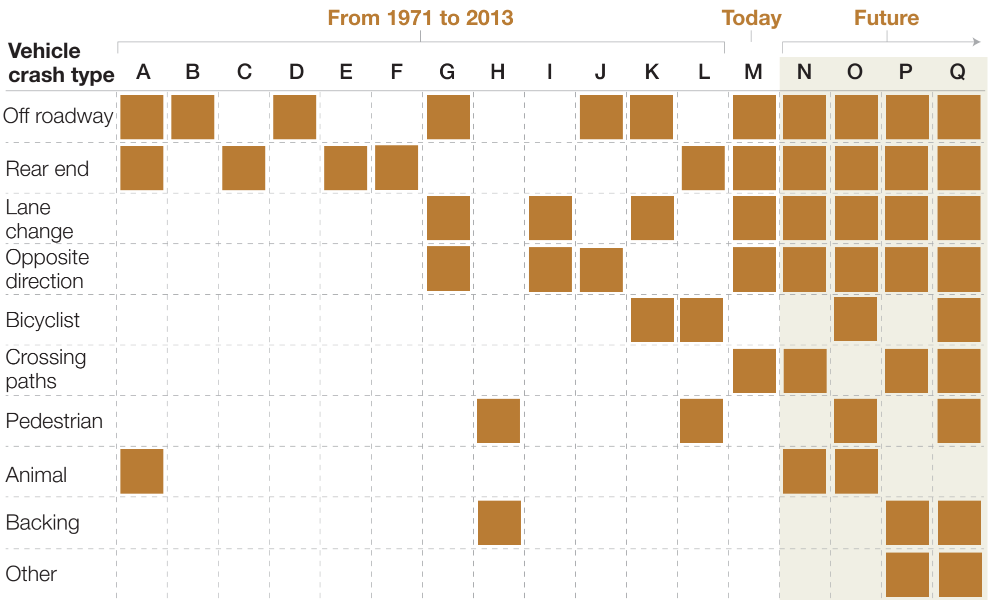
The possible benefits, by contrast, read like fantasy. If we imagine cars programmed to avoid a crash—indeed, programmed *never* to crash—we envision radical change (Exhibit 2). Passengers, responsible only for choosing the destination, would have the

[13] See "Human error as a cause of vehicle crashes," blog entry by Bryant Walker Smith, Center for Internet and Society at Stanford Law School, December 18, 2013, cyberlaw.stanford.edu.

Exhibit 2

Adoption of safety-related technology has grown dramatically, addressing more types of vehicle crashes.

Collision-avoidance safety technologies relevant to crash type



A. Antilock brakes
B. Traction control
C. 3rd brake light
D. Electronic stability control
E. Forward collision warning
F. Adaptive cruise control
G. Lane-departure warning
H. Park assist and back-over prevention
I. Adaptive headlights
J. Lane-departure prevention
K. Blind-spot detection
L. Forward-collision avoidance
M. Fatigue warning
N. Evasive maneuvers
O. Exit-to-exit highway driving[1]
P. Vehicle-to-vehicle (V2V) communication
Q. Vehicle-to-infrastructure (V2I)[2] communication

[1]Systems programmed to make smart decisions about navigating interstate on- and off-ramps.
[2]For example, communication between vehicle and traffic light.

Source: McKinsey analysis

freedom to do what they please in a vehicle. Disabled, elderly, and visually impaired people would enjoy much greater mobility. Throughput on roads and highways would be continually optimized, easing congestion and shortening commuting times.

And that would be only the beginning. Crash-free vehicles mean no traffic police, no ticketing, no alcohol-impaired driving. Freed from safety considerations such as crumple zones, bumpers, and air bags, OEMs could significantly simplify the production of cars, which would become considerably lighter and therefore less expensive to

buy and run. Related industries, such as automobile insurance, could be affected as well. While car insurance would of course still be necessary for incidents such as catastrophe, theft, and vandalism, insurance claims related to highway accidents (admittedly a small portion of the total) might nearly disappear. Automobiles could also last longer as collisions stop happening and built-in sensors facilitate the creation of parts on demand.

But what about the soul of the car: its ability to provide autonomy and a sense of self-directed freedom? Google's prototype autonomous vehicle has no steering wheel, brake pedal, or accelerator. The vision of a connected car, in fact, challenges even the most essential concepts of personal car ownership and control. When a rider need only speak a destination, what becomes of the driving experience—indeed, why even purchase a car at all? Manufacturers may continue to refine the feel of the ride and to enhance cabin infotainment. Still, there's probably a limit to how "special" a cabin can be or even how special consumers would want it to be.

In other words, if a ubiquitous fleet of on-demand vehicles provided drivers with the transportation they need, would it also provide them with the feelings of independence that have attracted drivers for more than 100 years and continue to make cars popular in new markets? While the timing and impact of the forces we've described remain fluid, they seem likely to transform the automotive industry and perhaps alter our very concept of what an automobile is. But we also believe that people will still look to their cars as a means of self-expression, with some very human elements. Tomorrow's winning OEMs will still manage to capture the public's imagination, much as Ford and its Mustang did on the fairgrounds of New York half a century ago. o

The authors wish to thank Patrick Hertzke, Nicolai Müller, and Paul Wilbur for their contributions to this article.

Paul Gao is a director in McKinsey's Hong Kong office, **Russell Hensley** is a principal in the Detroit office, and **Andreas Zielke** is a director in the Berlin office.

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To learn how the hotel company Starwood is meeting the challenge of the new digital landscape, see “Redefining service innovation at Starwood,” on page 63.

Illustration by Greg Mably

Service innovation in a digital world

Tony D'Emidio, David Dorton, and Ewan Duncan

New digital upstarts are threatening the bottom lines, growth prospects, and even business models of traditional service providers. It's time for incumbents to innovate—or be left behind.

A growing number of companies are finding their service businesses under threat. The culprits are members of a new wave of digital upstarts that capitalize on changes in technology, customer behavior, and the availability of data to create innovative, customer-friendly alternatives to the services incumbents offer. Indeed, the sorts of digital disruptions that began in retailing with the likes of Amazon, two decades ago, are fast coming to an industry near you—if they haven't already. Examples include Uber and Zipcar in transportation, Airbnb in hotels and hospitality, AngelList in venture capital, and Castlight Health and Healthgrades in healthcare. Attackers such as these may be small now, but they represent a growing challenge to traditional companies.

The attackers also highlight an uncomfortable truth: large companies rarely put as much sustained effort and management attention into transforming services as they do with products. Imagine the reaction of a time traveler from 50 or even 20 years ago upon visiting a contemporary hospital. The medical devices, tools, and products available to physicians would be largely unrecognizable, but the service experience, in many cases, would be largely the same. The service inertia big companies often suffer is understandably hard to shake. Change is difficult with a large base of legacy assets optimized for a certain way of working, as well as a large, distributed

workforce steeped in the status quo. The incremental approach many companies take to improving services doesn't help; processes that grind out small, steady cost reductions rarely deliver breakthroughs.

Nonetheless, some incumbents are fighting back successfully. These companies are learning from the attackers while mobilizing their own strengths—including scale, superior resources, and access to customers—to redefine service offerings, harness digital technology, and improve the customer experience. Some are lowering their costs as well. While few organizations have mastered the new environment, we can already see that winning approaches will combine three elements:

1. a focus on service innovation matching the intensity and attention that product companies bring to R&D

2. the ability to personalize the customer experience and to help customers do things themselves

3. the will to simplify (and in some cases automate) the way services are delivered

To pull all this off, companies must find more collaborative ways of working to ensure that they remain focused on their customers, not their own internal processes. A closer look at how the environment is changing and what leading companies are doing about it should stir the imaginations of a wide range of organizations struggling to adapt to a more digital and competitive world.

The new service landscape

The nature of services and the pace of change have shifted dramatically in recent years, and mastering the traditional aspects of service delivery will no longer be enough. To seize the opportunities, companies must learn to tap the potential for service innovation made possible by four evolving trends.[1]

[1] In addition, artificial intelligence and robotics represent intriguing developments that appear poised to make their way from manufacturing to services. For more, see "Robots mean business: A conversation with Rodney Brooks," on mckinsey.com.

Higher customer expectations. More than ever, consumers demand greater involvement, customization, personalization, and mobility from services—with immediate results. When they see cutting-edge service innovations in one industry, they expect to find them in others as well; witness the spread of self-service kiosks from airline check-ins to the retailing and hospitality industries. As industry boundaries increasingly blur for customers, companies must look for new ideas beyond their immediate rivals.

The rise of the mobile Internet. About 1.5 billion smartphones are currently in use worldwide and more than 100 billion apps were downloaded in 2013, up from 64 billion in 2012.[2] The resulting mobile and self-service possibilities are transforming service delivery. Uber's disruption of the taxi business is just one prominent example. Advances in digital payments are increasingly spurring mobile commerce, with far-reaching implications in financial services and retailing. Remote access and monitoring in healthcare are also potential game changers made possible by increased connectivity. The proliferation of smart devices unlocks growth opportunities, reduces the cost to develop services, and dramatically lowers barriers to entry.

Big data and advanced analytics. Companies such as Amazon and Harrah's are known for using customer data to personalize and tailor their services. Continued advances in analytic capabilities allow companies to draw insights from massive, previously untapped sources, leading to new service possibilities. SATMAP, for example, is a software solution that uses advanced analytics to improve service in call centers. It helps companies match callers to service agents with appropriate personalities, resulting in higher rates of customer satisfaction and service-to-sales conversion.

The Internet of Things. Pervasive machine-to-machine (M2M) connectivity[3] is already facilitating real-time service delivery in a number of B2B applications, such as the sensors GE uses in aircraft engines to monitor performance and improve the efficiency of maintenance. In the B2C space, Nest (recently acquired by Google) uses M2M connectivity to link its smart thermostats to other home

[2] For more, see ***Forecast: Mobile App Stores, Worldwide, 2013 Update***, Gartner, September 2013, gartner.com.

[3] Embedding sensors and actuators in machines and other physical objects to bring them into the connected world.

devices, including washing machines and personal-fitness bands, thus positioning the company as the network hub in a digitally connected home. The prevalence of connected devices opens up possibilities for proactive, even "touchless" service, as well as new commercial models quite unlike the traditional fee-for-service one.

Three imperatives

The benefits of mastering these shifts will be significant. Services, which currently represent about 65 percent of global GDP, are expected to account for about three-quarters of global growth over the coming decade. Companies that evolve quickly will better position themselves to capture this growth, while those clinging to traditional models will face growing pressure from digital attackers. To meet the challenges, forward-looking incumbents are pursuing three imperatives.

1. Institutionalize service innovation

Services, like products, have a shelf life. After all, customer demand evolves, service expectations change, and technological advances constantly bring new possibilities. Services, therefore, should be periodically examined and refreshed, just as products are. Many companies think of R&D as exclusively for product development.[4] Yet when they dedicate resources and management attention to developing and refining their service offerings systematically, they can make significant improvements.

For example, a large retailer facing pressure from online attackers and incumbents created a cross-functional R&D lab that focuses on overhauling the retailer's in-store customer experience and improving employee satisfaction. The lab takes an end-to-end approach, looking at every aspect of store operations, from customer checkout to storage-room processes. One of the lab's early efforts involved using advanced analytics to optimize the tasks of employees and thus to help stores improve their services and efficiency.

[4] To be sure, some companies have long understood the importance of an institutionalized approach to service innovation. In the McDonald's innovation center, for example, the company develops prototypes and simulates new service procedures in fully functioning mock restaurants housed in a suburban Chicago warehouse. For more, see "Innovation with a side of fries," *Crain's Chicago Business*, June 12, 2006, chicagobusiness.com.

The lab brings its cross-functional experience to tailor the rollout of new ideas so that they are more likely to stick—for example, by releasing them to stores in small batches that are easier for store managers to handle. These and other innovations significantly raised customer satisfaction, while helping the retailer to enhance store operations and refresh store formats much more quickly than it had before. The moves also generated significant labor savings and increased employee satisfaction.

Similarly, a large provider of commercial and residential services was struggling in the face of increasing customer expectations, customer dissatisfaction, and churn rates. To respond, company executives created a permanent in-house innovation team staffed with colleagues from different parts of the business, including customer care, scheduling and dispatch, finance, and marketing.

The team works its way through the service offerings of the company's different business units on a three-month rotating cycle, troubleshooting problems and working with the businesses to spot opportunities. The rotations ensure that every business process can be examined regularly. To bring in fresh thinking and maintain momentum, team members are rotated periodically. By sending them back to their former jobs, the company solicits and spreads new service thinking throughout the organization.

This approach has led to practical and powerful ideas. For example, when the team examined the relationship between customer satisfaction and the scheduling of field services, it discovered that many customers were less concerned with the actual date of service than with getting a date rapidly. This insight allowed the company to optimize its scheduling for maximum efficiency, often by scheduling the service calls for a few days *later* than it might have otherwise. Nonetheless, customer-satisfaction scores have improved markedly because the uncertainty—and anxiety—around the scheduling process has been removed.

More recently, the team has been testing a mobile workflow app to help field technicians in densely populated urban areas balance their workloads in real time. The app acts as a sort of clearinghouse for service calls: when technicians realize that they may be late for the next visit, they can trade it to a nearby technician who has just

finished a job early. While still in the pilot stage, this approach is intriguing because it promises to improve customer satisfaction further still, while requiring no additional centralized resources—the service techs manage the process themselves.

2. Personalize the customer experience

Companies have always sought to understand customers better to tailor services to their needs. Traditionally, this has meant focusing on customer segments or groups. While that wisdom still holds, the advent of massive new datasets and the spread of mobile devices mean that services can now be personalized cost effectively to a much higher degree.

A large credit-card provider, for example, partners with retailers to create personalized, real-time discounts for products and services through a mobile app. The app generates offers by matching customers' locations (determined from their smartphones) to products and services that should appeal to them given their purchasing habits and preferences. The credit-card company also works with social-media players to draw on the preferences of participating customers, using "likes" and other markers to refine its offers. The initiative helps the company to strengthen its relationships with merchants and serve them better, while also staying relevant to younger, digitally savvy customers.

Some incumbents go further by giving consumers even more control over services (see "Redefining service innovation at Starwood," on page 63). Disney recently implemented a new service that uses wristbands with radio-frequency identification (RFID) chips to give patrons more control over their visits to the company's theme parks and resorts. These MagicBands act as hotel-room keys, allow visitors to enter the park and purchase merchandise, and enable guests to schedule reservations for rides. When customers volunteer additional information, the experience can be personalized further. For example, the bands help costumed Disney characters to greet guests by name when encountering them or to extend personal birthday greetings.[5]

[5] For more, see Sarah Sekula, "Disney gets personal with new MyMagic+ system," *USA Today*, February 25, 2014, usatoday.com.

3. Simplify service delivery

Digital attackers tend to thrive on simplicity. Many adeptly combine new technology with process improvements to make services straightforward and more pleasing. Meanwhile, big incumbents, burdened by legacy IT systems and entrenched processes that have evolved over time, often struggle to keep things simple. Still, incumbents can bring more simplicity to their service operations by looking at the world the way their customers do.

Consider the experience of the healthcare distributor that faced increased pressure on margins and rising customer expectations. On closer examination, executives realized that unnecessary complexity was a factor. For example, each of the internal groups involved in providing the service used its own metric to gauge success. By optimizing their own contribution, they inadvertently overlooked the downstream effect on other internal groups and thus the overall effect on customers.

In response, the company dramatically simplified the metrics it used to measure success, choosing error-free orders as a target ensuring that it would stay focused on customers and not its own internal workings.[6] The company also gave the front line additional decision-making authority, which helped employees resolve—and prevent—more customer-service problems. Together, these moves helped increase the proportion of error-free orders by nearly one-third.

Meanwhile, the company's call centers began serving as the single point of contact for customer problems. (Previously, salespeople had played this role, believing that solving problems themselves strengthened relationships.) While the change represented a mind-set shift for the salespeople, it was one they were willing to make, since it boosted sales.

A large European bank combined technology with an effort to simplify its services, to improve the mortgage-application process. The company formed a team of project managers, mortgage

[6] For more about optimizing services from the customer's point of view, see Alex Rawson, Ewan Duncan, and Conor Jones, "The truth about customer experience," *Harvard Business Review*, September 2013, hbr.org.

specialists, and software developers who redesigned the process from end to end, eliminating unnecessary handoffs and simplifying the customer experience—all while keeping the process compatible with the company's legacy IT systems. The resulting web solution has proved popular with customers, reducing approval times to 15 minutes, from several days. Moreover, the bank's analysis suggests that the quality of loan decisions has improved—even as costs associated with the process have been reduced, on average, by 75 percent per mortgage.

The new services landscape is unlocking innovation opportunities in nearly every industry. Yet for many companies, managing day-to-day operations is all-consuming. Even the most forward-looking incumbents find that implementing an innovation mind-set can be daunting. Institutionalizing service innovation, for example, requires more than setting up a new R&D lab; the lab's efforts must be hardwired into the company's services strategy, investment cycles, sales, and operations. Similarly, personalizing the customer experience is about not only mining data and applying the latest analytic techniques but also marrying those capabilities with insights from service representatives, third parties, and customers.

And the quest for simplicity is rarely simple—especially as the pace of innovation and customization continues to grow. Companies that excel on these dimensions, while keeping the customer at the center of everything they do, will be best positioned to survive the mounting pressure from attackers and master the new services environment.

The authors wish to thank Travis Fagan and Keith Gilson for their contributions to this article.

Tony D'Emidio is an associate principal in McKinsey's Washington, DC, office; **David Dorton** is a director in the Atlanta office; and **Ewan Duncan** is a director in the Seattle office.

Redefining service innovation at Starwood

Mark R. Vondrasek

The head of the hotel company's loyalty program, Mark Vondrasek, describes its approach to technology, guest loyalty, and disruptive new competitors.

Guest loyalty has always been important to Starwood, but a few years back we began to get far more granular in how we approached it as we studied the profitability of our guests in side-by-side comparisons. We found, for example, that the top 2 percent generated 30 percent of our organization's profits—an incredibly high concentration. We also learned that the "platinum" members of our loyalty program—Starwood Preferred Guest (SPG)—are many, many times more profitable than guests who aren't SPG members. Analyzing the data was eye opening, and really pushed us to reexamine how we think about loyalty and benefits.

We had a lot of "splitter" behavior, for example: guests who worked hard to reach a critical milestone of, say, 50 or 75 nights with us to attain SPG program status for the year but would then try to achieve a similar level of recognition with a competitor. This behavior touches on a classic challenge with loyalty programs: a little bit of animosity can build up between the program and the guests because we're essentially resetting their "barometer of value" every year. Guests can feel like Sisyphus: "As long as you roll that rock up the hill and clear certain hurdles, we'll extend benefits to you. But come January 1st, you're starting over."

This led us to modify our program to add "stretch" benefits, so that no matter what program status a guest has reached there's always a carrot—for instance, the ability to reach lifetime platinum or gold

status. Now, if you miss a target by a handful of nights, we absolutely consider your prior-year contribution. These changes were successful, and led to exactly the sorts of results we hoped for. But a bigger lesson was that we heard what our guests were really saying to us, which was: "The way most loyalty programs do things is upside-down compared with the way we think about loyalty in our own lives. It's got to be more reciprocal." This also helped push us beyond our traditional views of customer segmentation and loyalty.

A changing landscape

Our guests' expectations about service and what constitutes a good experience have increased considerably in recent years. Mobile technology has a lot to do with that. People use their phones for everything—the devices connect to some of the most personal aspects of our lives. With that comes a heightened expectation about what companies like ours should be able to do. We look for ways to turn these expectations into opportunities—for example, by adding functionality to the SPG app so that guests can bypass the line at check-in and use their mobile phones or Apple Watches as a room key. It's not technology for technology's sake, but rather to solve a true pain point.

The changing environment has also brought disruptive new competitors—most notably, the shared-economy companies like Airbnb. In part, I view them as the latest example of a group of companies that has always existed to get between us and our guests.

These shared-economy companies are a powerful motivator because they didn't even exist a few years ago. I have great respect for them. They've gone from zero to scale very quickly. For us, this drives home the importance of agility and the ability to pivot and be quick. The days of five-year plans are over—now it's "what are we doing in the next five months?" The reason we created an SPG app for Google Glass, for example, wasn't that we suddenly expected to get 20 percent of our bookings through it. We just wanted to partner and move nimbly so that if wearable technology takes off, we will know how to be relevant, present, and first in that space.

Ultimately, the new competitors validate our strategy of personalization and of truly understanding our guests so well that they don't want to unplug from the infrastructure we've built for them. I want to make the SPG app the place where you let me know when you're getting off the plane, when you're running late and you really want a Diet Coke and a Cobb salad waiting in your room, and when you want us to open the business center early or leave the fitness center open late. Those kinds of advantages will help us not just weather this latest foray into disruption but also thrive in it.

Listen and learn

A lot of our technology initiatives and bets come straight out of insights we've taken from guests, who are constantly challenging us to understand their unique needs each time they travel. Ironically, a key way we do so is fairly retro and nontechnological—our "ambassador" program, which gives our most valuable guests a single point of contact. Ambassadors are specially trained associates in our contact centers who handle all of a guest's travel needs and provide a human connection to our organization.

They also provide an important feedback loop. Ambassadors have an incentive to catalog and bring forward the ideas and opportunities that bubble up through their conversations with guests. They meet together twice a month in peer groups to talk and share experiences. From these meetings, it can be pretty easy for us to spot pain points and start piecing together opportunities.

For example, one thing the ambassadors heard was "I don't understand. I travel from the United States to Europe, and my flight gets in at 7:30 AM. If I'm so important to you, why do I have to wait until 3 PM to check in?" Feedback such as this ultimately led to a benefit called YOUR24, which lets guests name their own check-in time for any trip. As simple as that sounds, it's a big differentiator for folks who travel internationally. By personalizing the service, we establish closer relationships with our guests and make it less likely they'll go elsewhere.

The program also benefits our contact-center employees. One thing we had struggled with before was the “pyramid effect”: if you were talented on the phones and wanted to progress, you pretty much had to become your supervisor. Now, we have new opportunities for these employees. We’ve even created paths from the ambassador program to sales roles in our various properties—something that didn’t exist five years ago. As a result of all this, turnover in our contact centers went down and employee satisfaction went up.

Another thing we heard from guests was how frustrating it is when they get a new program benefit and it’s inconsistent from region to region or property to property. So we’re as focused on improving the tools, infrastructure, and applications we use to provide these benefits as we are on improving the benefits themselves. We’re also very careful about placing fewer, bigger bets that connect end to end—and then rolling them out hard. Long gone are the days of “throw 100 darts and hope that 5 will stick.”

The power of partnership

Strategic partnerships are another way we’re working hard to cement loyalty. It’s really about creating “stickiness” across an entire spectrum of needs. We’ve heard guests say, for example, “I don’t just get dropped out of the sky and into your lobby.” That observation led to the creation of our program with Delta Airlines. Crossover Rewards, which we launched 18 months ago, creates ties between Delta’s loyalty program and ours and also involves benefits sharing. We recognize Delta frequent flyers in our hotels with certain benefits, and the airline does the same for our priority guests. The potential advantages are large. For our part, we have seen significant incremental revenues in our North American hotels from the program’s first year.

I think partnerships such as this will be increasingly important and that big, like-minded companies can create powerful synergies when they come together. Moreover, I believe the triangular relationships these partnerships create will be harder for others—including the shared-economy players—to emulate.

Of course, synergies happen with small companies, too. For example, one of our properties in Cupertino, California, recently worked with a Silicon Valley start-up to introduce a robotic butler that provides room service.[1] Now, do I think that robots are going to take over hotels in the next few years? No. But does something that's fun and a little "technology forward" work in Cupertino? Yes. At the end of the day, when new technologies emerge—and we can use them to delight our guests—we're going to be first. We're going to play in those spaces. We're going to learn.

And can you imagine telling your wife or husband, "You'll never guess what delivered my toothpaste last night"?

[1] See John Markoff, "'Beep,' says the bellhop," *New York Times*, August 11, 2014, nytimes.com.

Mark R. Vondrasek is senior vice president of distribution, loyalty, and partnership marketing at Starwood Hotels & Resorts. This commentary is adapted from an interview with **Tony D'Emidio,** an associate principal in McKinsey's Washington, DC, office; **Travis Fagan,** a director in the Dallas office; and **Thomas Fleming,** a former member of McKinsey Publishing.

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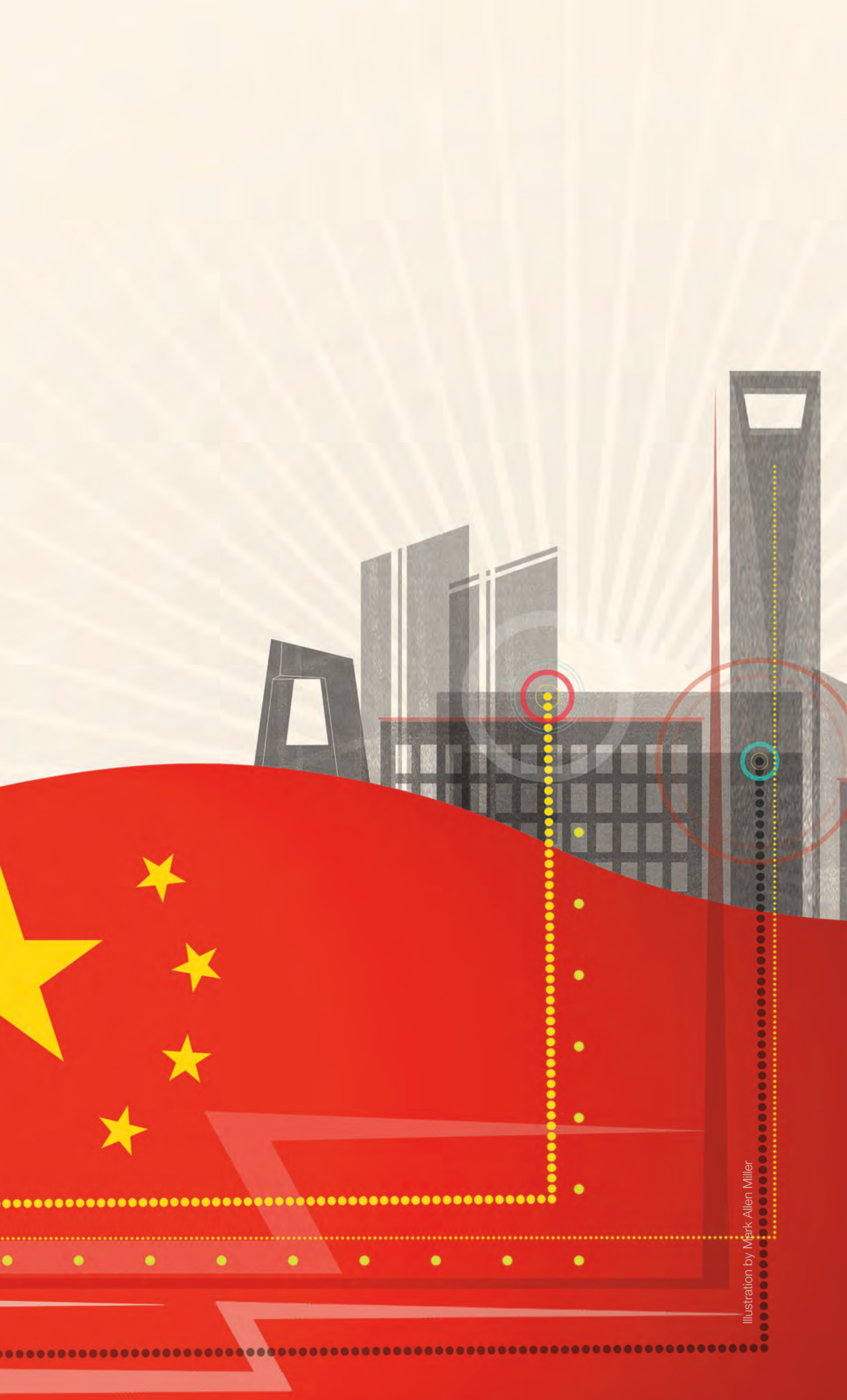


Illustration by Mark Allen Miller

China's rising Internet wave: Wired companies

Yougang Chen, Jeongmin Seong, and Jonathan Woetzel

After a massive rise in Internet use by consumers, adoption by Chinese companies is catching up with that of the developed world.

Until recently, China's Internet economy was consumer driven. The country leads the world in the number of Internet users, and Chinese enterprises deploy sophisticated e-commerce strategies. The same companies, though, have lagged behind the United States and other developed nations in using the Internet to run key aspects of their businesses (Exhibit 1).

That's changing. China's companies are quickly climbing the adoption curve. Their increased digital engagement will not only give the economy a new burst of momentum but also change the nature of growth. China sorely needs a new leg of expansion because the industrial growth of recent years—driven by heavy capital expenditures
in manufacturing—will be difficult to sustain. The Internet, by contrast, should foster new economic activity rooted in productivity, innovation, and higher consumption.

For global companies counting on China for continued growth, the new Internet wave will change the nature of competition: it will enable the most efficient Chinese companies to grow more quickly, shine more transparency on business and consumer markets, and create conditions for a better allocation of capital.

A new McKinsey Global Institute report looks broadly at the coming transformation.[1] Our research shows that Chinese companies are investing heavily in the building blocks of the Internet economy: cloud computing, wireless communications, new digital platforms, big data analytics, and more. Across six sectors (Exhibit 2), which accounted for 25 percent of Chinese economic activity in 2013, we find that increased Internet adoption could add 60 billion to 1.2 trillion renminbi (about $10 billion to $190 billion) in GDP to individual sectors by 2025. About one-third of these gains will come from the creation of entirely new markets, the remainder from productivity gains across the value chain. When we scale up this level of growth across all sectors of the economy, we find that Internet adoption could add 4 trillion to 14 trillion renminbi to GDP by 2025. The Internet is also expected to contribute 7 to 22 percent of total GDP growth from 2013 to 2025.[2]

As the new technologies cascade through markets, less productive business models will cede ground to more innovative ones. Companies will realize broad productivity gains in operations by automating processes, streamlining product development, and digitally reinforcing their supply chains. Similar improvements will take shape in marketing and distribution as sales organizations deploy the Internet to expand their reach and enrich customer interactions. Consumers and businesses alike will benefit from lower prices and transaction costs, as well as better goods and services. And in a significant shift, a more wired world will allow China's entrepreneurs and small and midsize businesses—often handicapped by lower productivity—to scale up rapidly at lower cost.

Five implications

More specifically, our exploration of how Chinese enterprises are integrating the Internet into their processes suggests five implications for competition and market dynamics:

[1] For the full McKinsey Global Institute report, see *China's digital transformation: The Internet's impact on productivity and growth*, July 2014, on mckinsey.com.

[2] Our estimates are based on high and low levels of corporate adoption.

Exhibit 1

China's Internet has been more consumer than enterprise driven.

2013		China		United States
Consumers				
Internet usage	Users	632 million[1]		277 million
	Penetration	46%		87%
E-tailing	Market size	**$295 billion**	vs	**$270 billion**
	Share of retailing	7–8%		6%
Largest e-commerce platform		**Taobao** (including Tmall)[2]		**eBay**
	Items	**800 million**	vs	**550 million**
	Active buyers	231 million		128 million
Suppliers				
Enterprise cloud-adoption rate		**21%**[3]	vs	**55–63%**[4]
Internet-adoption rate among small-to-midsize enterprises (SMEs)[5]		**20–25%**	vs	**72–85%**

1 As of July 2014.
2 In addition to its consumer-to-consumer (C2C) marketplace, Taobao owns a business-to-consumer (B2C) platform known as Tmall.
3 McKinsey China CIO survey, 2012.
4 Rates vary depending on types of cloud-computing solutions.
5 Positive survey responses for Internet use in procurement, sales, and marketing.

Source: CNNIC; International Data Corporation; iResearch; Kable Global ICT; National Small Business Association; Pew Research Center; Strategy Analytics; US Census Bureau; McKinsey Global Institute analysis

1. A burst of digitally driven productivity

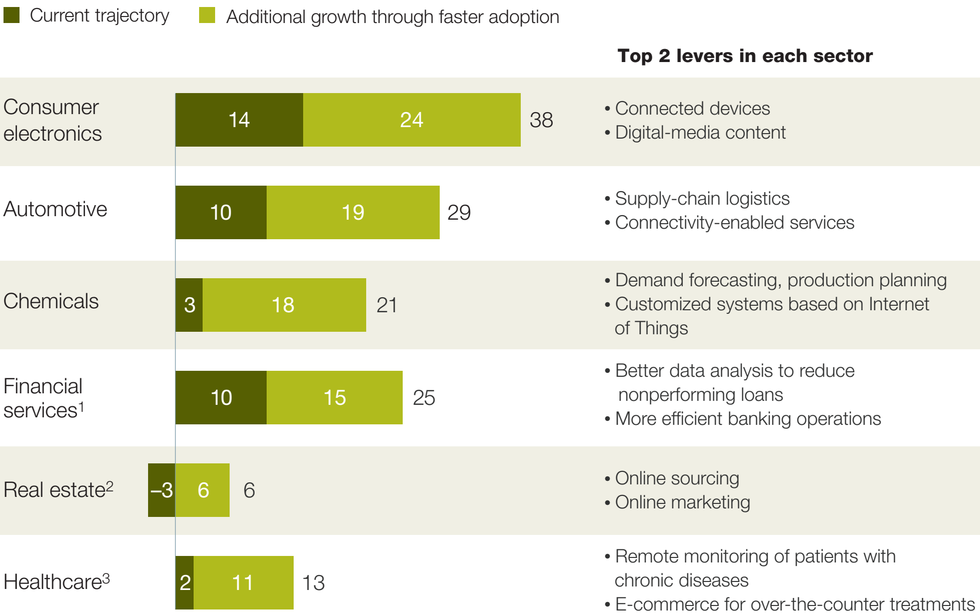
China's industrial expansion will probably slow down from its levels during the past decade, and companies are struggling with excess capacity. Many are looking to the Internet for a new set of tools to engineer productivity improvements. In the automotive sector, one example is Anji Logistics, a subsidiary of SAIC Motor. Using sensors and communications capabilities—the Internet of Things—the company manages logistics for automakers and other OEMs, helping them optimize inventory levels and transport routes.

Our findings, in fact, indicate that supply-chain and operations improvements will be the most potent contributor to Internet-led value gains in autos.

China's chemical industry, while still in the relatively early stages of Internet use, is exploring ways to employ big data on inventory levels and shipments to improve forecasting and product planning. In China's dynamic real-estate sector, online markets operated by players such as Anjuke and SouFun are streamlining information-search and transaction processes, thus shaving commissions and bringing down prices for customers. Healthcare providers are implementing remote patient monitoring to stretch their footprints to underserved patient populations while substantially saving costs for patients with chronic disease.

Exhibit 2

The adoption of new Internet applications may have a substantial economic impact in key sectors of China's economy.



[1] Does not include the effects of more efficient capital allocation on the rest of the economy.
[2] Reflects either a potential drop of –3 caused by Internet-related shifts in demand for commercial real estate or a potential additional growth of +6.
[3] Refers to reduced healthcare expenditures.

Source: McKinsey Global Institute analysis

2. Greater access to financing and lower risk

An underdeveloped financial infrastructure has constrained some areas of China’s economy. The growing use of Internet platforms, combined with increased data and analytics capabilities, means that China’s financial institutions can allocate their scarce resources more effectively and expand the economy’s base of borrowers and investors.

One of China’s most significant gaps is in lending to small and midsize enterprises. Data about a growing number of companies and new analytics tools are giving banks better ways to target risk, thereby lowering the incidence of nonperforming loans and increasing the confidence of lenders. Digitally mediated transactions, meanwhile, are reducing lending costs—another benefit for smaller business borrowers.

A parallel trend is unfolding in consumer lending. Digitization allows banks and other credit suppliers to monitor huge numbers of transactions and to evaluate the risks posed by borrowers more effectively while expanding loans. Regulators are authorizing pilot programs in online lending by newly formed private players. Technology companies such as Alibaba and Tencent are using access to massive amounts of data to lower lending risks and expand the horizons of consumer credit. Our research suggests that better risk management could create the greatest amount of additional value in China’s financial services.

Securities firms, insurers, and banks are building mobile and online channels to distribute new and more specialized products to a long tail of investors. Online discount brokers, for example, are using Internet platforms to lower commissions on investment products. This development has given rise to popular products such as Yu’ebao (created by Alipay), a money-market fund that lets consumers easily move excess savings to accounts bearing higher interest. Online mortgage lending is taking hold as well, expanding the base of home buyers.

3. A growing base of consumers and richer interactions

Social technologies and new digital platforms ease the way for richer interactions with customers and allow companies to meet demand from a more diverse range of buyers, often in new or hard-to-reach markets. Jiangsu Sanfangxiang and Shandong Chambroad, early

movers among China's domestic chemical manufacturers, are using e-commerce platforms to cut administrative and transaction costs and to provide a base for closer collaboration with their customers. Following the pattern in the B2C realm, China's B2B players are using Internet technologies to expand their markets from large cities to smaller ones. Chemical manufacturers in the agricultural sector are sizing up the potential for big data to help farmers monitor crop conditions in real time, allowing these companies to customize their offerings of products to increase farm yields.

Automakers, meanwhile, are finding that popular vehicle-shopping sites, such as Autohome and BitAuto (Yiche.com), help them to identify and inform likely car buyers. That is proving to be an important tool for increasing conversion rates among undecided shoppers. Chinese car buyers, like those in the West, are demanding systems offering GPS, maintenance alerts, and diagnostics that not only improve the customer experience but also offer robust data to manufacturers for improving products and marketing efforts. In addition, Internet sites are sparking China's online used-car markets, where companies like Cheyipai and Youxinpai are bridging the information gap and helping dealerships source quality used cars.

Across consumer markets, companies are using China's established social and search sites, such as Baidu, to mine data on ever-changing tastes and customer preferences. Their ability to expand delivery through mobile channels is growing as well. In real estate, China's big residential-property developer Vanke has experimented with location-based advertising, using Tencent's advertising platform, Guangdiantong, to build awareness among potential buyers. Vanke has also partnered with online marketplace Taobao to offer promotional coupons to purchasers. In healthcare, advanced communication technologies permit China's first-tier hospitals, via regional health-information networks, to extend high-quality treatment to underused lower-tier hospitals by linking patients to medical specialists.

4. Lower barriers to innovation

The Internet blazes new pathways to innovative products, services, and business models. Digitally enabled innovation will add a new dimension to the efforts of Chinese companies, large and small, to compete as they climb the learning curve.

In consumer electronics, companies are gaining familiarity with open-source processes that can transform R&D. These processes widen access to innovative designs that can differentiate products and get them to market faster. Mobile-device maker Xiaomi has built a community of fans, known as *mi fen* (a play on words that means rice flour and is short for Xiaomi fan), who provide feedback and recommendations for smartphone designs, consumer-friendly features, and other improvements. Computer maker Lenovo held a *chuang ke*[3] competition where 50,000 participants contributed close to 100,000 product ideas.[4] Some participants even developed their products with funds raised on crowdsourcing platforms. Volkswagen's China operations, meanwhile, launched the People's Car Project to develop new concepts. To shape product innovations, chemical manufacturers are starting to share information with suppliers and customers, hoping to enlist their expertise.

As Internet capabilities are integrated with a growing number of products, new business models are arising. China's fast-moving Internet-TV market is a case in point. Because Chinese consumers are highly price sensitive, vendors often make little money from hardware. Instead, they are looking for ways to use digital platforms to create "multisided" markets where revenue streams flow from services such as media content and advertisements. LeTV, for instance, provides its Internet-TV set-top-box hardware for free but charges 490 renminbi for a 12-month subscription. This model has sparked new collaborations between China's TV manufacturers and content providers seeking to bundle services with hardware offerings. Some companies are swiftly turning to successful new models pioneered beyond China's borders. Following the trend in Western cities where popular smartphone apps have revolutionized taxi services, residents of China's major urban areas now use Didi and Kuaidi to summon the nearest available cab.

5. New competition as the Internet empowers entrepreneurs and small businesses

Internet technologies lower entry barriers across sectors, giving unexpected competitive power to new players, from online insurers

[3] A combination of two Chinese characters: *chuang* indicates turning ideas into reality; *ke* means groups of people gathered for the same purpose.

[4] Tao Jing Jie, "Promoting technology innovation: Lenovo *chuang ke* competition launched," *CNET News*, January 19, 2014, cnetnews.com.cn.

without field agents to mobile-service providers with capital-light models. This new competition may render the business models of some established players obsolete, weeding out companies that can't adapt. In China, businesses with fewer than 1,000 employees contribute 70 percent of GDP.[5] Yet for the most part, they lag behind bigger players in productivity. Going digital will neutralize some of the disadvantages these enterprises face, by helping them manage supply chains more effectively, cement customer loyalty, lower transaction costs, and achieve wider distribution.

One example of the trend is appliance maker Xiaogou. Originally lacking the scale or capabilities to build up a network of brick-and-mortar distributors, Xiaogou shifted to the exclusive use of online platforms for marketing and distribution. We expect that a growing number of smaller Chinese enterprises will eventually become "micromultinationals" by operating from new platforms, particularly as the number of digitally savvy Chinese entrepreneurs continues to grow.

Managing in the new environment

Since the Chinese market lies at the heart of growth strategies for many global companies, senior executives must ready them to compete on the new terrain. Four principles will help define their response.

Zero in on the customer. Given the size and rapid growth of China's consumer market, companies have often prospered by focusing on large-scale production and mass-market channels. Looking forward, customer needs will become increasingly fragmented. To meet this challenge, companies have to widen their choice of suppliers, glean the more detailed customer insights available from better information, and ultimately produce a broader and more complex portfolio of products targeted to what consumers really want.

Consider the competitors you don't know yet. The Internet has unleashed a new era of intense competition, and companies will need to be fast and flexible to stay ahead. Competition can emerge

[5] *Report on the nationwide development of small and micro businesses*, State Administration for Industry & Commerce of the People's Republic of China, 2014, saic.gov.cn.

rapidly from unexpected corners, and as barriers between sectors become blurred, start-ups based on digital models will gain momentum. Leaders will need to commit resources to the digital transformation to maintain their position. Although the cost of these efforts will strain companies in the short term, they will open the way for long-term benefits.

Retool operations for a digital age. Agility is the key word. Across the new Chinese landscape, Internet capabilities will require much more than a focus on customer-facing operations. A new operating strategy will integrate Internet technologies into back-office functions, production processes, and supply chains, to achieve new efficiencies. CIOs and other technology specialists will need to change their mind-set about big data, adopt multichannel models, and champion operational improvements.

Drill down on your organizational capabilities. Across China, companies are facing talent shortages for highly specialized roles in big data analytics, particularly in sectors such as finance, where changes are coming fast. Meantime, labor-intensive industries will need to attract more knowledge workers as digital technologies become "wrappers" for many goods and services. Outside hiring to attract new talent will be needed, but companies must also be creative about developing their talent pipelines, exploring industry collaboration to create skills in short supply in China, and seeking out partnerships with universities.

The open-ended characteristics of Internet technologies will challenge traditional business models that keep value-chain activities in-house. The next phase of change will tax the capabilities of companies in China, and executives should be open to collaborative ecosystems involving partnerships with upstream suppliers, downstream vendors, and consumers. China's increasingly wired landscape, in short, is changing the face of business there and challenging the strategies even of companies that have prospered through earlier waves of tumultuous growth.

Yougang Chen is a principal in McKinsey's Hong Kong office; **Jeongmin Seong** is a senior fellow of the McKinsey Global Institute, where **Jonathan Woetzel** is a director.

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Illustration by Sophia Martineck

For new McKinsey research on the key behaviors companies should encourage to develop successful leaders, see “Decoding leadership: What really matters,” on page 88.

From bottom to top: Turning around the top team

A case study of change at Philips illustrates the importance of the "soft stuff."

When Pieter Nota joined Philips, four years ago, to run the Dutch technology group's Consumer Lifestyle sector, he found a business in poor shape. The market shares of several important products were falling in the wake of harsh trading conditions and a lack of earlier investment. Sales of the company's televisions were declining alarmingly following a brief spike ahead of the 2010 FIFA World Cup. More fundamentally, an overcentralized and functionally led organizational structure was proving ill suited to the task of managing the two formerly separate companies (small domestic appliances and consumer electronics) first brought together under the Consumer Lifestyle umbrella, in 2008.

The story of the unit's subsequent turnaround, from Philips's problem child to part of a group that recently announced its tenth consecutive quarter of strong revenue and profit growth, is one of astute portfolio divestment and renewal, clear strategic choices, more disciplined operations, and a rigorous focus on performance management. Underlying and driving the recovery, however, has been a less visible, but no less important, improvement in the effectiveness of the Consumer Lifestyle sector's top team—that handful of senior executives who provide the energy, inspiration, and vision for any enterprise. As the accompanying exhibit illustrates, the results of successive surveys carried out from May 2011 to May 2014 demonstrate a remarkable rise in team-effectiveness scores rating alignment on strategic direction, the quality of execution, and the ability to change.

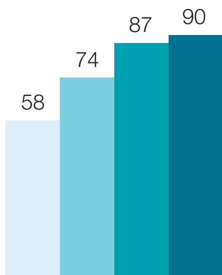
Exhibit

How Philips Consumer Lifestyle's top-team ratings improved

% of respondents citing agree or strongly agree[1]

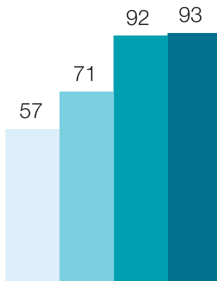
May 2011 | November 2011 | March 2013 | May 2014

Alignment to direction



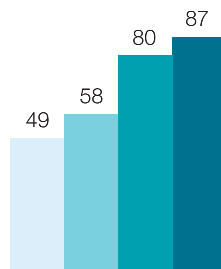
Does the team share a view on where to lead the organization and how to lead it there?

Quality of execution



Is the team effectively designed, and does it have high-quality interactions that drive superior performance?

Ability to renew



Is the team able to sustain its energy and does it have the capacity and ability to adapt to change?

[1]Scores in the first survey (May 2011) were among the lowest of any company surveyed; scores in the most recent survey (May 2014) were among the highest. Questions noted here are a synthesis of more detailed survey questions.

Source: Four surveys of Philips Consumer Lifestyle's top team

This summer, Pieter Nota sat down with McKinsey partners Udo Kopka and Michiel Kruyt to discuss the journey and the lessons he and his team have learned along the way.

The *Quarterly*: ***As an outsider to Philips, how did you determine what the most serious issues were?***

Pieter Nota: One of the first things I did when I joined, in late 2010, was to write an open letter to about 700 people—basically, the group we call the Consumer Lifestyle leadership and a layer below them. I invited them to tell me what they thought was working well in the business and what wasn't. This gave me a pretty good idea of what was cooking and a lot of useful insights: the sense that

two of our biggest businesses, small domestic appliances and consumer electronics, were not functioning well together; the frustration with the lack of investment and innovation, particularly in domestic appliances; and empowerment issues in the sales organizations. All that came out of this exercise.

The *Quarterly*: *What were your initial actions as the new CEO?*

Pieter Nota: Consumer Lifestyle was the biggest of Philips's three businesses at the time, and it was not performing well. The business environment was flat, and we were challenged on both sales and profits. It became clear quite quickly that we might have to divest the TV business. Given TV's central place in the group's history, this was pretty drastic. The emotional response was how I imagine it would be if Unilever were to suggest getting out of detergents.

The *Quarterly*: *How did you find morale in the top team—and in the organization more widely?*

Pieter Nota: I inherited a large and diverse top team of 15 people, representing various businesses, geographies, and functions, with team members from Europe, the United States, and Asia. Morale was pretty low. For example, the two very distinct businesses in Consumer Lifestyle—consumer electronics and small domestic appliances—each had very different rules of the road. There was a lot of tension and friction, since we were structured to manage them as one business. Financial performance was poor, and there had been a reluctance to invest during the financial crisis of 2008. Nor did it help when, in mid-2011, we had to issue a profit warning for the TV business, a unit we retained until late 2012, when a majority stake was sold to TPV Technology.

For all these reasons, the team was insecure and couldn't understand why things were going so badly. The top-team survey we did in May 2011, in preparation for our first off-site meeting, exposed some of the
challenges—it showed how misaligned we were on the direction of the business, the poor quality of our discussions, the lack of trust, the lack of confidence in our ability to implement strategy, and the perception that we were ineffective at making change happen.

The *Quarterly*: *How and when did you go about starting to rebuild the team?*

Pieter Nota: In retrospect, I think our first big off-site meeting—in May 2011, at Huizen, in the Netherlands—was significant. This is where we put the issues on the table. Two things remain clearly etched in my memory. One is a no-holds-barred conversation on team loyalty, which emphasized the importance of our values, our core purpose, and the essential notion of trust. The second is the introduction of some critical new thinking on how to improve the quality of our operations and implementation capabilities.

On the first, I knew that I did not have all my team members on board and that this needed to be addressed. Even after my predecessor had gone, some who had been in his very close circle were continuing to have conversations with him. During the opening of the off-site meeting, this topic had already come up. We ended up spending three hours talking about the past, clearing the air, and gaining a better understanding of each other. At the end, everyone got to the point where they could decide whether they wanted to be in or not. That was a pivotal moment.

The other discussion was aimed at breaking down the silos that had developed between central marketing and product development, on the one hand, and the regional market units, on the other. We wanted to move from a functional organization to an organization built around customer-focused business-market combinations.

These were to become the performance units in which the central business folks—marketing and product development—and the regional market folks would plan and deliver results as a team. They were to be jointly responsible for the results, so they could no longer point fingers at each other if they failed to carry out the plan.

In this way, we created more transparency and accountability around the performance of individual business-market-combination units and improved resourcing decisions across them. We pioneered this idea in Consumer Lifestyle as part of the company's wider Accelerate! transformation program—the program launched in 2011 by Frans van Houten, the group's CEO, to unlock the full value of Philips. There are now roughly 150 business-market combinations in Consumer Lifestyle at Philips, and they are the vital conduit through which we allocate our resources, drive the business, and run granular performance management.

The *Quarterly*: *How receptive was the team—and the organization—to these new ideas?*

Pieter Nota: In mid-2011, this was all still new. People didn't understand it, and the team members' first reaction was to say I did not trust them and wanted to micromanage the business. It was a year before we really started implementing business-market combinations effectively and before the market and business folks on the team started to gel. Once the members of my team began to act as role models for this new form of collaborative accountability, the idea started to trickle down to the rest of the organization as well.

The *Quarterly*: *Given the dissension in your top ranks, many CEOs might have fired half the team. Why didn't you do that?*

Pieter Nota: I take the view that structure follows strategy, so for me it was important, first off, to know where we were going with the businesses before changing the team. That said, I did take early action on a few team members who could not let go of the past. Once the new strategy became clear, I made some specific appointments in the team to support the new direction. For example, I moved the headquarters of our Domestic Appliances businesses from Amsterdam to Shanghai—China was our biggest growth region—and appointed an Asian leader. In the time I have been with Consumer Lifestyle, the

size of the team has fallen from 15 to 12, but on the whole I'd characterize what's happened as evolution and not a big bang. It is always important to have a balance between old hands with domain expertise and new people.

The *Quarterly*: *It seems that by the time of the second survey—a year into your tenure—things were starting to improve. Why?*

Pieter Nota: We were starting to gain more team cohesion. And our strategic alignment was improving. In this respect, the strategy paper we prepared for our Capital Markets Day, in September 2011, was another turning point because it showed explicitly the transformation route from a consumer-electronics business toward a personal-health and well-being business. It showed that the audio/video business was a separate animal and made people realize that we would probably exit this activity as well as TV. In the end, we completed this portfolio shift in early 2013.

What was equally clear from the second survey, though, was that the business-market-combination initiative wasn't gaining enough traction. People still didn't know clearly enough what the implications were at the operating level. Nor were we yet sufficiently willing to have the sorts of tough conversations that would allow us to make the necessary trade-offs and hold each other accountable with the help of increased transparency through business-market combinations.

That said, we managed to put in a decent financial performance in Q4 of 2011, admittedly from a low base—something reflected in what was then a rare positive reference to Consumer Lifestyle results in the subsequent Philips earnings press release. I remember noticing at this time that people were starting to recover their pride and fighting spirit.

The *Quarterly*: *Can you remember the moment when you realized you were making real progress on the business-market combinations?*

Pieter Nota: I can remember a moment—in the second team off-site meeting, at Amsterdam, in November 2011—when the "us versus

Pieter Nota

Vital statistics
Born in 1964, in the Netherlands

Education
Graduated with a degree in business administration from Erasmus University, Rotterdam

Career highlights

Philips (2010–present)
Chief executive officer, Philips Consumer Lifestyle
Member of the Executive Committee

Beiersdorf (2005–10)
Chief marketing and innovation officer
Member of the Executive Board

Unilever (1990–2005)
Various executive positions in marketing, sales, and general management in Germany, the Netherlands, Poland, and the United Kingdom

them" mentality that had characterized team discussions between marketing and the business units really started to change. During the day, we spoke about new ways of collaborating. Over dinner, a business leader's side comment to the head of the China unit about its performance sparked a huge gloves-off debate, which, though stormy, led to a better understanding of both sides' positions and needs. After a few more conversations, the two leaders initiated a major end-to-end transformation project in China from which we are still benefiting today and which has proved to be a model for Philips overall.

From that point onward, we started to have much more hard-nosed performance and collaboration discussions, where people were really challenged in direct language but where tensions would be dissipated by humor. We called these "courageous conversations" to make them easier to start, and we still explicitly make time for them in our face-to-face meetings. That session in Amsterdam

and its sequels turned a lot of negative energy into positive energy and taught us to address difference and conflict in a quick and constructive manner, thus enabling the business-market-combination model to work.

The *Quarterly*: *When did the emphasis really change from thinking about the short term to the long term?*

Pieter Nota: If you look at the results, it is clear that in the period before and around the first two surveys, we were putting the basics of strategy and team collaboration in place. After that, we concentrated on turning those basics into habits and on making our execution more disciplined. Throughout 2012, in addition, a lot of management time and attention was given to innovation and the championing of new products. I think people started to notice, at this stage, that we cared about the innovation pipeline, particularly in kitchen appliances, and that we weren't just speaking at a high level about structures and processes.

In our March 2013 team off-site, for instance, we spent a lot of time on blue-sky thinking, coming up with an exciting vision for Consumer Lifestyle. We then ended the day with a very powerful exercise in which we brainstormed "the ten excuses we would use two years from now for not having made the aspiration a reality." We addressed each one and made it clear that we would not be allowing ourselves to use these excuses in the future. It was a great combination of dreaming and realism.

The *Quarterly*: *Looking ahead, where does Consumer Lifestyle's top team need to improve?*

Pieter Nota: Instead of divesting businesses, such as TV and audio/video, the challenge now is to show that we can build new categories for Philips. The most important areas for future improvement are our capabilities, particularly digital capabilities, and our ability to reallocate resources dynamically. It's hard to take resources away from one area and deploy them elsewhere, particularly with a strong team. Everyone tends to treat the past as an entitlement. But with the right trust between teams and a willingness to reward those who drive higher profits and sales growth, you can get significant top- and bottom-line improvements with resource reallocation.

The *Quarterly*: *To what extent do you think the turnaround was the result of a clearer strategy and operating model, and to what extent has better leadership been responsible?*

Pieter Nota: It's true that our Accelerate! program and the design of the whole business-market-combination approach was a prerequisite for improved performance. But without a better team dynamic and the sort of courageous conversations I've talked about, our turnaround wouldn't have been as fast. One doesn't go without the other. The team is critical, and you have to ground people in the new reality and remove those who are wedded to the past. The whole experience of the last four years has confirmed what I thought at the outset—that team leadership and general management are about 70 to 80 percent of the battle, with domain expertise accounting for the rest. This experience has proved to me that the soft stuff is what really makes the hard stuff happen.

This interview was conducted by **Udo Kopka,** a director in McKinsey's Hamburg office, and **Michiel Kruyt,** a principal in the Amsterdam office.

Decoding leadership: What really matters

Claudio Feser, Fernanda Mayol, and Ramesh Srinivasan

New research suggests that the secret to developing effective leaders is to encourage four types of behavior.

Telling CEOs these days that leadership drives performance is a bit like saying that oxygen is necessary to breathe. Over 90 percent of CEOs are already planning to increase investment in leadership development because they see it as the single most important human-capital issue their organizations face.[1] And they're right to do so: earlier McKinsey research has consistently shown that good leadership is a critical part of organizational health, which is an important driver of shareholder returns.[2]

A big, unresolved issue is what sort of leadership behavior organizations should encourage. Is leadership so contextual that it defies standard definitions or development approaches?[3] Should companies now concentrate their efforts on priorities such as role modeling, making decisions quickly, defining visions, and shaping leaders who are good at adapting? Should they stress the virtues

[1] *The State of Human Capital 2012—False Summit: Why the Human Capital Function Still Has Far to Go*, a joint report from The Conference Board and McKinsey, October 2012, mckinsey.com.

[2] See Aaron De Smet, Bill Schaninger, and Matthew Smith, "The hidden value of organizational health—and how to capture it," *McKinsey Quarterly*, April 2014, on mckinsey.com.

[3] See Ralph M. Stogdill, "Personal factors associated with leadership: A survey of the literature," *Journal of Psychology: Interdisciplinary and Applied*, 1948, Volume 25, Issue 1, pp. 35–71. Also, for more on our work with Egon Zehnder, notably the contrast between organizations growing organically and those growing through acquisition, see Katharina Hermann, Asmus Komm, and Sven Smit, "Do you have the right leaders for your growth strategies?," *McKinsey Quarterly*, July 2011, on mckinsey.com.

of enthusiastic communication? In the absence of any academic or practitioner consensus on the answers, leadership-development programs address an extraordinary range of issues, which may help explain why only 43 percent of CEOs are confident that their training investments will bear fruit.

Our most recent research, however, suggests that a small subset of leadership skills closely correlates with leadership success, particularly among frontline leaders. Using our own practical experience and searching the relevant academic literature, we came up with a comprehensive list of 20 distinct leadership traits. Next, we surveyed 189,000 people in 81 diverse organizations[4] around the world to assess how frequently certain kinds of leadership behavior are applied within their organizations. Finally, we divided the sample into organizations whose leadership performance was strong (the top quartile of leadership effectiveness as measured by McKinsey's Organizational Health Index) and those that were weak (bottom quartile).

What we found was that leaders in organizations with high-quality leadership teams typically displayed 4 of the 20 possible types of behavior; these 4, indeed, explained 89 percent of the variance between strong and weak organizations in terms of leadership effectiveness (exhibit).

- Solving problems effectively. The process that precedes decision making is problem solving, when information is gathered, analyzed, and considered. This is deceptively difficult to get right, yet it is a key input into decision making for major issues (such as M&A) as well as daily ones (such as how to handle a team dispute).

- Operating with a strong results orientation. Leadership is about not only developing and communicating a vision and setting objectives but also following through to achieve results. Leaders with a strong results orientation tend to emphasize the importance of efficiency and productivity and to prioritize the highest-value work.

[4] The 81 organizations are diverse in geography (for instance, Asia, Europe, Latin America, and North America), industry (agriculture, consulting, energy, government, insurance, mining, and real estate), and size (from about 7,500 employees to 300,000).

- Seeking different perspectives. This trait is conspicuous in managers who monitor trends affecting organizations, grasp changes in the environment, encourage employees to contribute ideas that could improve performance, accurately differentiate between important and unimportant issues, and give the appropriate weight to stakeholder concerns. Leaders who do well on this dimension typically base their decisions on sound analysis and avoid the many biases to which decisions are prone.

Exhibit

Four kinds of behavior account for 89 percent of leadership effectiveness.

Top kinds of leadership behavior[1]

1. **Be supportive**
2. Champion desired change
3. Clarify objectives, rewards, and consequences
4. Communicate prolifically and enthusiastically
5. Develop others
6. Develop and share a collective mission
7. Differentiate among followers
8. Facilitate group collaboration
9. Foster mutual respect
10. Give praise
11. Keep group organized and on task
12. Make quality decisions
13. Motivate and bring out best in others
14. Offer a critical perspective
15. **Operate with strong results orientation**
16. Recover positively from failures
17. Remain composed and confident in uncertainty
18. Role model organizational values
19. **Seek different perspectives**
20. **Solve problems effectively**

[1]Based on a survey of 81 organizations that are diverse in geography (eg, Asia, Europe, Latin America, and North America), industry (eg, agriculture, consulting, energy, government, insurance, mining, and real estate), and size (from ~7,500 to 300,000 employees).

Source: McKinsey's Organizational Health Index

- Supporting others. Leaders who are supportive understand and sense how other people feel. By showing authenticity and a sincere interest in those around them, they build trust and inspire and help colleagues to overcome challenges. They intervene in group work to promote organizational efficiency, allaying unwarranted fears about external threats and preventing the energy of employees from dissipating into internal conflict.

We're not saying that the centuries-old debate about what distinguishes great leaders is over or that context is unimportant. Experience shows that different business situations often require different styles of leadership. We do believe, however, that our research points to a kind of core leadership behavior that will be relevant to most companies today, notably on the front line. For organizations investing in the development of their future leaders, prioritizing these four areas is a good place to start.

The authors wish to thank Michael Bazigos, Nate Boaz, Aaron De Smet, Lili Duan, Chris Gagnon, Bill Schaninger, and Ekaterina Titova for their contributions to this article.

Claudio Feser is a director in McKinsey's Zürich office, **Fernanda Mayol** is an associate principal in the Rio de Janeiro office, and **Ramesh Srinivasan** is a director in the New York office.

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Illustration by Bill Butcher

Confronting corruption

Ravi Venkatesan

Policies, controls, and culture must all work together to withstand the inevitable pressures when they arise.

Consider these real-life situations faced by executives in global corporations.

- A local political leader has demanded a payment to help settle a labor dispute that he has engineered; he implies that if you refuse, the outcome could be unpredictable and bad for business. Eventually, he mellows and agrees to accept a check payable to a school for poor children that he runs. Should you pay?

- A routine audit by the tax authorities has developed into a wider investigation. After two months, they have found no evidence of tax evasion but their demands for information are increasing and proving a distraction to the company's employees. Tax evasion is a criminal offense in this country but the inspector offers a solution: if you hire a tax accountant or consultant of their choice for $100,000, the investigation will be wound down. What should you do?

- Your company is due a substantial tax refund from the local government of one of the countries where you operate. This amount is now 11 months overdue. The global CFO is under pressure to write off the amount, but such a write-down will wipe out your annual profit; employees will have to forgo their bonuses for no fault of theirs. It is becoming clear that without a payoff, this refund will not happen in a reasonable time. The demand is quite modest considering the magnitude of the refund. Most local firms and several multinational companies have quietly paid up. What should you do?

Many of the world's most admired and well-managed firms—all of them with codes of conduct, written policies, and seemingly tight controls—have grappled with these sorts of dilemmas for years. But recent media reports highlight how the risks of succumbing to bribery and fraud are intensifying. Two factors are driving this.

The first is companies' greater exposure to growth opportunities in emerging markets with a history of corruption. The second is the rising backlash against corporate wrongdoing in many developed and developing markets. In China, for example, Xi Jinping's government seems increasingly determined to change the long-standing culture of graft and backhanders; in India, an important new law has been enacted to curb corrupt politicians, ministers, and bureaucrats. In Turkey, protesters against corruption have taken to the streets, and in Brazil senior political figures have been jailed. Concurrently, governments in countries such as the United States, Germany, and the United Kingdom are strengthening and enforcing their own anti-corruption and antibribery laws more vigorously, notably the US Foreign Corrupt Practices Act (FCPA) and the UK Bribery Act. These efforts make companies increasingly liable not just for the conduct of their employees but also for the actions of their intermediaries, such as consultants, agents, and joint-venture partners.

These developments potentially raise the odds of success for leaders seeking to build multinational organizations that consistently adhere to high ethical standards—and make the present a good moment to take a fresh look at the question of corruption. My perspective on this issue has been shaped over 20 years as a senior executive in South Asia at US multinationals (Cummins and Microsoft) and by experiences as a board member at a variety of companies, including Volvo and Infosys. My conclusion from this range of experiences is that the hardest issues for ethical multinationals, regardless of their country of origin, are rarely the big-ticket scandals and scams that make headlines. Rather, it's the subtler but more pervasive forms of fraud and corruption, such as pressures for payments on routine transactions, that often pose the biggest challenge. These quiet killers of ethical business practices are what really make it difficult for executives to do business profitably while doing the right thing. Although much of my experience is rooted in India, I believe the observations and lessons I learned also apply to many other markets.

To illustrate what I mean, I describe here four broad categories of corruption and fraud that executives are likely to come across—and include some tactical ideas on how to deal with them. I conclude by arguing that companies should protect themselves against the risks by going beyond policies and controls and building a culture of ethics and compliance. In this way, healthy organizations will give themselves the best chance of avoiding difficult situations in the first place rather than having to deal with them when they happen.

A taxonomy of corruption

Corruption and fraud are broad terms that span a wide variety of situations. To help people up and down the line understand the pressures they are likely to face, I have found it useful to parse corruption and fraud into four categories: bribes, speed money, extortion, and employee fraud.

Bribes

Global companies routinely get into trouble when managers make payments to, say, win a business contract, gain regulatory approval of a product, reduce their taxes, or avoid customs duties. Multinational companies are forbidden to pay bribes both by the local laws of the countries in which they operate and by laws in their "home" jurisdiction. All such laws prohibit managers from offering anything of value to a government official, political party, or party official with the intent to influence that person or to secure an improper advantage in obtaining or retaining business.

This sounds cut and dried, but in practice managers seldom make payments directly. Instead, the payments usually involve creative practices such as using agents or dealers to make payments, tapping unaccounted pools of cash, or slush funds, sponsoring foreign travel, providing extravagant gifts or entertainment, and making charitable contributions to nongovernmental organizations recommended by government officials and politicians.

Over time, a company that is uncompromising in its ethics develops a reputation that serves as the best shield against bribery. Indeed, I would contend that in the consumer (B2C) and industrial (B2B) sectors of most countries, companies can function without paying

bribes. When it does occur, it often simply reflects a leadership choice or a lapse in leadership.

Looking for plausible deniability is a short-term strategy at best. Consider, for example, the many multinational companies with channel-driven business models that route sales through distributors, dealers, and other value-added resellers. On the face of it, this business model offers a natural firewall against corruption. In my experience, though, principled foreign companies are loath to condone bribery by their channel partners, and sooner or later, the ethics of a multinational and a local partner are liable to collide.

Speed money, or 'grease payments'

A far bigger problem for companies is the demand for small payments to facilitate routine transactions and services. The distinction between bribes and speed money is simple: a bribe is a payment to a public official (or someone in authority in the private sector) for doing something he or she should not do; speed money is a payment for doing something he or she should do, faster.

Many companies encounter demands for speed money, especially from government officials but also increasingly from employees in the private sector. There are often circumstances when companies must make a facilitation payment or suffer inordinate delays—in clearing shipments, getting permits or licenses, or registering land deals, for example. As a well-known Asian businessperson puts it, "From the time a businessman thinks of starting a venture, every step is paved with red tape and demands for grease payments. The system makes it impossible for people to function legally. There is no time limit to issue a license or renew a permit. If I do not pay my way through, the authorities can make me wait indefinitely before processing my application. It's simply more efficient to pay."

Paying speed money is illegal in many countries, including India and the United Kingdom, although it is permissible in certain circumstances under the US FCPA. Almost no one will officially admit to paying speed money, but the uncomfortable reality is that there may be no alternative for a business that needs to keep operating. Although no substitute for legal review of any such payments, it can be helpful to consider whether or not the transaction involved is a routine, nondiscretionary action and if the

company is seeking an improper benefit. The agency or intermediary the company uses should be reputable and provide a value-added service. Every payment to such an agency should be approved by legal experts at global headquarters and accounted for explicitly. From the perspective of the multinational, nothing should be "under the table" and left out of its business documentation.

Extortion

Crooked politicians and bureaucrats in certain developing countries, where the rule of law is tenuous, sometimes seek to extract money by making credible threats against a business or even the lives of its executives. Inexperienced companies usually find it easier to pay up than to run the risk of being held hostage. The short case study of the local politician who threatened to escalate a labor problem unless he was paid off—as outlined at the beginning of this article—is not untypical. His reputation and past actions suggested that the threat was real. Such situations are defining moments. There are no easy or right answers since there are multiple considerations, including employee safety. While country managers need judgment and courage, they should not try to deal with the problem alone and should always discuss the matter with their global CEO and general counsel. In such situations, a powerful local network and an effective advisory board can be a help. Bear in mind too that extortionists are usually solo rogue actors without institutional backing: it is often possible to call their bluff, which, in my experience, helps a company cultivate a reputation for honesty and acts as further protection against future demands.

Employee fraud

Increasingly, the biggest corruption threat facing companies is not bribe payments or speed money but the risk that their own employees may be on the take. Several recent surveys[1] on global fraud have highlighted this problem, drawing attention to the involvement of senior executives of multinational companies in emerging markets. Causes include the rising pressures to deliver improved financial performance; the temptation is there to cook the books, stuff the channel with inventory, and make side agreements with customers and partners. Greed is also driving more

[1] *2013/2014 Global Fraud Report*, Kroll, fraud.kroll.com.

management fraud: kickbacks from vendors and advertising agencies, commissions on real-estate transactions or machinery purchases, deposits in overseas bank accounts on successful acquisitions or sales of companies. These transactions are becoming routine in some places, and they are difficult to combat without the right organizational culture.

Inoculating the organization

Many years of experience running diverse businesses in South Asia make me optimistic that companies can operate ethically in emerging or any other markets. While greedy politicians and venal public officials are convenient scapegoats, corruption is a two-way street; succumbing to it is a leadership choice. Companies must therefore build their own internal competence and develop a robust culture to withstand the inevitable pressures when they arise. Here are four principles to keep in mind.

Don’t ignore the basics

Companies need to ensure that basic controls are in place on a range of issues. For example, too few foreign companies pay adequate attention to compliance, mainly because businesses usually allocate budgets for audits and compliance reviews in proportion to revenues, and individual emerging markets often still contribute relatively little to revenues. This is a mistake: India might account for 1 percent of global sales and China 5 percent—but their contribution to overall compliance risk might be much higher.

Many other basics also get overlooked. According to Ernst & Young’s most recent fraud survey, only 35 percent of companies have taken action against employees, and one-fifth of respondents stated that their companies did not have policies in place or they were unaware of an existing one.[2] In another survey, conducted by Kroll, less than one-third of respondents said their foreign employees, vendors, and managers were trained to be both familiar and compliant with the UK Bribery Act and the US FCPA.[3] Cultural and geographic

[2] *Overcoming compliance fatigue: Reinforcing the commitment to ethical growth*, 13th Global Survey, Ernst & Young, 2014, ey.com.

[3] *2011/2012 Global Fraud Report,* Kroll, fraud.kroll.com.

distance can further lead to overdependence on local management to the point of abdication. Other fundamental questions are: Has the company instituted a formal code of conduct that every employee has to recertify annually? Is there mandatory training on compliance, with appropriate rules and regulations for customer-facing employees? What is the preapproval process for discounts, gifts, travel, entertainment expenditures, and charitable contributions? How is the company's code of conduct communicated to customers, dealers, and partners? Do customers know the entertainment and travel reimbursement policies of the company? How does the company deal with a problem? Is investigation swift and punishment decisive and fair?

Invest in the key functions

Many companies manage head count very tightly and underinvest in staffing compliance functions such as finance, internal audit, and legal. That's penny-wise and pound-foolish, given the relatively low cost of head count in developing countries. The finance and administration unit is usually the primary contact with bureaucracy, and it's critical to have a strong team, with managers who understand local laws and regulations, possess the skills to work with government officials, and can get things done without paying bribes. Being lax or saving costs by taking shortcuts will inevitably expose companies to exploitation by the unscrupulous. The reputational damage and distraction to a business of dodging taxes can be many times higher than the magnitude of the apparent evasion.

Leadership matters

Clear policies, procedures with approval processes and stringent controls, and regular internal audits of high-risk areas are all necessary measures—but what really matters is strong local leadership in the matter of compliance. "In hierarchical cultures, bribery and corruption depend largely on the tone from the top," declares one leading fraud expert. Global companies should therefore hold their country CEOs accountable for compliance with their policies and codes of conduct, as well as with the laws of their "host" country. There should be zero tolerance. Too many companies focus too much on hitting the numbers, with insufficient discussion of the character of leaders during the appraisal process.

It’s the small things—such as segregating personal phone calls, only charging appropriate business expenses, and avoiding the personal use of company assets—that often matter. A sense of entitlement in small things is often a predictor of bigger problems. In many cases, employees are aware of suspicious conduct long before it is officially discovered, but they won’t blow the whistle if they don’t feel top management is serious about punishing wrongdoers. Leaders can demonstrate their seriousness in myriad ways: paying attention to simple steps such as conducting rigorous reference checks during the hiring process, for example. These may take a little extra work in unfamiliar markets but can provide invaluable insight. In retrospect, I could have avoided many mistakes by better and more personal due diligence. For instance, after we terminated a senior executive for “channel stuffing” one year after hiring him, a distributor told us that the executive had a reputation in the industry for indulging in that practice.

Be prepared to tough it out

Success is perfectly possible in emerging markets without making compromises, but there are real consequences and real costs for those who uphold ethical behavior, especially in the short term. Some business may be lost, budgets may be missed, approvals may take more time, and officials may respond angrily. Local managers can come under pressure from senior managers at headquarters willing to turn a blind eye. When fraud is discovered, they feign ignorance and respond with shock and dismay; middle managers and frontline employees are made the scapegoats. Global leaders should publicly support antibribery laws, speaking out against corrupt practices in their industry and explicitly acknowledging any loss of business that results from adherence to ethical principles. CEOs must ensure that every employee in every part of the world is utterly clear about what conduct is acceptable and what is not.

They should follow the example of the head of one Indian IT company, who said recently: “We ask our people to persist and prevail, not to take shortcuts. The message is simple: we will work alongside you. We will not hold it against you if a project gets delayed or we lose

money; we will do what is right, not what is convenient. Over time, people will know what is acceptable here and what's not. Social memory is many times more effective than a bunch of policies."

Globalization today provides companies with lucrative new opportunities in markets where they may encounter new risks relating to bribery, grease payments, extortion, and employee fraud. To combat the threat to their reputation—and ultimately to their bottom line—CEOs must make dealing with corruption a core employee and organizational competence. This requires a relentless focus on compliance, a commitment from senior leaders to ethical behavior, and a determination to tough it out when these high standards appear to carry a short-term cost.

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Ravi Venkatesan is a former chairman of Microsoft India and Cummins India. He sits on the boards of the Rockefeller Foundation, Infosys, and Strand Life Sciences and is the cofounder and chairman of Social Venture Partners, India—a network of engaged leaders attempting to address complex social issues through venture philanthropy. He is also the author of *Conquering the Chaos: Win in India, Win Everywhere* (Harvard Business Review Press, 2013).

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Tackling **gender diversity**

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Since 2007, McKinsey's *Women Matter* series has analyzed gender diversity in top management and gained insights into ways to improve it.[1] Progress in most countries has been slow—for example, our research finds that the percentage of female executive-committee members ranges from 1 to 20 percent across countries. But we've also observed real progress. Fostering women in leadership is increasingly on the corporate agenda, and the impact of gender diversity on corporate performance is more understood. Moreover, we see common patterns in the progress of individual companies. These include commitment from senior executives (men and women alike) to develop women into more effective leaders and ensure that support elements are in place, particularly a culture of inclusiveness.

In this special package, we explore the way those patterns are playing out in varied organizational and geographic settings. In Australia, for example, a group of prominent male CEOs is pushing boundaries in their own organizations—and in society more broadly—through a series of bold business initiatives. Read their stories here. Gender diversity is also gaining traction in the Gulf States, as McKinsey's Tari Ellis, Chiara Marcati, and Julia M. Sperling describe in their summary of the latest *Women Matter* research. Accompanying the research is an interview with Huda Al-Ghoson, Saudi Aramco's most senior female executive, who recounts her formative experiences and describes the oil giant's approach to bolstering the ranks of talented women.

As efforts proliferate around the world, the difference between stalling and moving forward often starts with having difficult conversations. In "Fostering women leaders: A fitness test for your top team," Lareina Yee offers practical suggestions for stimulating that dialogue and moving to action: increasing leadership opportunities for women, driving positive cultural change, and challenging the mind-sets, behavior, and unconscious biases that hold women back. Finally, if corporate cultures must change, what about popular culture and how are they related? Geena Davis, founder of the Geena Davis Institute on Gender and Media, argues that the current media depictions of women skew our perceptions and place a psychological ceiling on girls. She urges companies to be thoughtful in their messaging and root out bias internally, creating an environment where women are equally visible—showing today's girls that they can become tomorrow's leaders.

[1] For more about the research, visit mckinsey.com/features/women_matter.

Sandrine Devillard is a director in McKinsey's Paris office.

Championing gender equality in Australia

Elizabeth Broderick, Elmer Funke Küpper, Ian Narev, and David Thodey

An innovative organization is redefining the role of men in the promotion of gender equality—and improving the environment for women leaders.

Everyone's business

Elizabeth Broderick

For a long time, I was firmly of the view that increasing the number of women leaders was a matter of women's activism and women working together. Yet while women's activism remains critical to making progress, if you look at the levers of power in nations and in organizations, they rest in the hands of men. And to continue to rely on women alone to disrupt the status quo is really an illogical approach. I realized that unless we worked with the men in power—and helped them move from being merely interested in this subject to taking action—we wouldn't see the transformative change we need.

This is not about men speaking for women or "saving" them. This is about men standing up beside women and saying, "The promotion of gender equality in Australia, and the world, is everyone's business." It should not sit on the shoulders of women alone. It's about men accepting responsibility to create change.

So we started the group, the Male Champions of Change, by identifying a dozen powerful men in some of Australia's most prominent organizations. I picked up the phone and rang them.

The group formed from there, ultimately reaching 25, its current size.[1] From the beginning, we were quite strict about participation in meetings and told the men they couldn't send delegates. My rule was: "This is you I'm inviting, not your organization."

The first couple of meetings were a bit awkward, as the tendency—human nature, really—was for people to talk about all the good things they were doing. Relatively quickly, though, the tone of the discussion became much more authentic and honest. "This is hard," several admitted. "In fact, it's the hardest thing I do as a CEO. I don't know what the answers are; I'm trying everything but nothing seems to be working." They all recognized that no one had the answers, but at the same time everyone agreed these were leadership issues that started with them, and that collectively, we could change things.

Actions, not talk

The group meets in person once a quarter (more often in smaller, topic-focused "action groups"), and is a source of rich discussion, particularly at the intersection of disciplines or sectors. Putting the Chief of Army beside the head of a bank, for example, results in thought-provoking conversations about job flexibility and leadership. The fact that these men would not ordinarily come together is part of the group's appeal, and I've seen a great openness to learning and curiosity.

Besides allowing for the sharing of stories, the face-to-face meetings are critical, I think, in empowering the Male Champions to be bolder.[2] Disrupting the status quo requires courageous leadership. For example, David Thodey's initiative to make all roles flexible at Telstra is very bold. By treating flexibility as the starting point, and not the exception, he's changing the whole nature of the conversation. Similarly, the group took the lead on gender reporting, and because

[1] The Male Champions of Change receives pro bono support from McKinsey & Company. For more about the group, including its latest report, *Accelerating the advancement of women's leadership: Listening, Learning, Leading*, visit humanrights.gov.au/male-champions-change.

[2] Behind the individual Male Champions is an organization designed to support their efforts. For example, we have a funded Secretariat, headed by a senior leader who has the credibility to work with the Champions and other stakeholders. Furthermore, each Champion designates an implementation leader in their organization to directly drive change.

of the efforts of Elmer Funke Küpper, head of the Australian Securities Exchange and one of our Male Champions, a new reporting regime was adopted for publicly listed companies in Australia.

Recently, we've started looking further down the supply chain—at the idea that the group could ensure that its supply-chain partners also care about gender equality. This effort has huge potential because of the massive collective buying power of the group.

The Male Champions also demonstrate strong and visible leadership outside their organizations. They speak at more than 1,000 events a year and they recognize that women's voices are often poorly represented. The practical action they have all taken is a "panel pledge" to ask a simple question of conference organizers: "What are you doing to ensure gender balance at your event?" Some have declined events if women speakers aren't well represented. Sometimes, they can make a lesson of it. For example, one of our members, Martin Parkinson, Australia's secretary to the Treasury, was listed as a speaker at a large conference on global growth opportunities. He realized beforehand that there were very few women speakers on the agenda, and prompted the organizers to do something about it. When little was done, he opened his talk that day by identifying himself as a Male Champion of Change, highlighting his disappointment at the lack of gender balance, and spoke to the importance of the visibility of women in important national discussions. *Then* he delivered his speech. He received huge applause.

With that said, we certainly don't view ourselves as the solution—just an arrow in the quiver. It's not about the Male Champions doing everything. It's about them leading by example, and it's about every one of us reaching out to the men in our lives, and giving them some practical examples about what they can do to move this agenda forward. Each of the Male Champions has a story to tell. Here are just three of them.

Elizabeth Broderick is the sex discrimination commissioner of the Australian Human Rights Commission.

All roles flex

David Thodey

One endeavor I worked on with Ian Narev, CEO of the Commonwealth Bank of Australia, was about job flexibility. I strongly believe that to get true gender balance in a large company, or a society, you need the right culture. And job flexibility has always been a cultural challenge for many companies, because as you go through your life as an employee, your needs change but the company's response doesn't. You go to your manager and see if you can work out a different arrangement and typically the answer is, "You're a key member of the team and I really like you a lot, but gee, I really need you here for these hours."

So at Telstra we said: "No, this isn't a manager's decision. Every role can be done flexibly and that's the starting point." In fact, a manager has to be able to demonstrate that a job can't be done flexibly, not the other way round. In 2013, we piloted the approach, "All Roles Flex," in one of our larger business units, with about 9,000 people. After it was successful there, we brought the other business units onboard earlier this year. We wanted to stop tinkering around the edges of this issue and do something disruptive that would send a clear message.

We've been delighted at how people have stepped up and how creative they are in making this work. While it's still early on, our engagement scores have increased four percentage points in relation to flexibility, with 84 percent of our people saying they have the flexibility they need in their roles. That still leaves 16 percent, but it's heading in the right direction. We have also seen a strong increase in our ability to bring women into Telstra at mid-to-senior levels, just by inviting applicants to talk to us about flexible work. And the stories we hear about the policy are encouraging. For example, we have a talented employee with a disability that gives her trouble in crowded environments. Coming into work each day at the regular time on a full tram was very stressful. Now, she's moved her day slightly and her whole world has changed.

David Thodey is the CEO of Telstra.

Recognizing unconscious bias

Ian Narev

One area we've discussed is unconscious bias—a topic we've thought a lot about at the Commonwealth Bank of Australia (CBA). In general, companies have gotten to the point, luckily, where it's rare to find outright misogynists, homophobes, and racists. But that's not a very high bar! The problem we struggled with at CBA was more subtle: If a manager wasn't getting good outcomes on gender targets—but like most people, wasn't a misogynist—then the message we were effectively sending was, "You're probably OK." And that's not OK.

The bias training we gave to our top 2,000 people gave them permission to say: "I can be a good human being but recognize that I still unconsciously make judgments that may favor certain groups in promotions." It was a big first step and has helped us improve our hiring processes, particularly when it comes to the classic "just like me" bias in hiring decisions.

I like focusing on processes because it helps us get past any "warm and fuzzy" elements of diversity and into action levers. For example, we discovered that we had an anachronistic process that classified women on maternity leave as "over quota, unattached," which, among other things, essentially meant they couldn't keep their cell phones or laptops. This policy may not have been initiated by anyone still at the bank, but it had gone unexamined and was preventing us from staying in contact with parents on leave—which would have allowed us to work with them to create more flexible return options. Fixing it was easy; spotting it was harder.

Ian Narev, an alumnus of McKinsey's New York and New Zealand offices, is the managing director and CEO of the Commonwealth Bank of Australia.

Read the full version of this article on mckinsey.com.

Governance guidelines

Elmer Funke Küpper

Once a year we look at our forward agenda to see what we should work on. The work then progresses in smaller groups. For example, we did some work on target setting with Martin Parkinson, secretary to the Treasury. We wanted to see where the number of women dropped off in our organizations and what could be done to shine a light on this.

What we saw will be familiar to many companies: the numbers are usually strong at the lower levels of the organization and in the talent pipeline, and they're OK or improving at the board level because you can recruit for that. It is in the senior-management layers in-between where there are challenges. At these levels, the numbers drop sharply, which suggests the career-progression processes are not working the way they should. So we proposed to the Male Champions that we should publicly report, and set targets, down to four layers in our organizations to put real focus on career progression. The feedback from the group led us to modify the proposal so that companies could differentiate by job type and not just by layers. Several of the Champions took the lead and adopted the new way of reporting and target setting.

From there, we approached the Corporate Governance Council of the Australian Securities Exchange, which sets the governance principles for the 2,000 public companies in the country. We asked the Council to adopt the reporting approach from the Male Champions. The governance principles work on an "if not, why not?" basis—companies do not have to follow the guidelines but they have to explain why they don't. In our experience, large companies tend to comply. After about 12 months, the Council decided to update its guidelines based on our suggestions. They came into effect on July 1 of this year.

Elmer Funke Küpper, an alumnus of McKinsey's Amsterdam office, is the managing director and CEO of the Australian Securities Exchange.

This commentary is adapted from interviews conducted by **Natalie Davis,** a principal in McKinsey's Sydney office; **Angus Dawson,** a director in the Sydney office; and **Thomas Fleming,** a former member of McKinsey Publishing.

Promoting gender diversity in the Gulf

Tari Ellis, Chiara Marcati, and Julia M. Sperling

Companies in the region increasingly recognize the potential of women leaders to enhance organizational effectiveness.

Despite being significantly underrepresented in C-suites and corporate boards across the Gulf Cooperation Council (GCC) states,[1] women are making strides. Indeed, a McKinsey research project[2] finds that gender diversity is gaining a place on the corporate agenda across the GCC as companies there increasingly recognize the potential of women leaders to enhance organizational effectiveness. A closer look at the region's evolving social attitudes toward women in leadership—and the significant challenges that remain—underscore how corporate and government action could help create environments where women leaders more fully contribute their knowledge, skills, and expertise. Such outcomes would benefit not only the women involved but their organizations and national economies as well.

[1] The GCC states are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[2] The project included a survey of over 550 male and female middle and senior managers from public-, private-, and social-sector organizations in the GCC. In addition, we conducted in-depth interviews with a predominantly female group of over 50 senior leaders there, including a large share of board and C-suite leaders, as well as senior government officials. The effort was part of McKinsey's ongoing *Women Matter* research, which has previously examined the impact of increasing gender diversity in Asia, Europe, and Latin America. For more, see the full report, *GCC Women in Leadership—from the first to the norm*, July 2014, on mckinsey.com.

Women on the agenda

Over the past ten years or so, several dozen women in the GCC have advanced to senior leadership positions in the region's companies, government bodies, and nongovernmental organizations (NGOs). In most cases, they were the first women to fill these roles, and many remain the only women near the top of their organizations. This dearth of women in leadership is reflected in data from the GCC Board Directors Institute (BDI) showing that women hold less than 1 percent of executive-committee and board positions in the GCC—figures that are among the lowest in the world.

Nonetheless, our research suggests that there is momentum for change. Nearly two-thirds of survey respondents indicated that the topic of women in leadership was on their organizations' strategic agendas. Among these companies, 41 percent of respondents said that the issue had appeared on their agendas over the past ten years (Exhibit 1). To be sure, significant regional differences remain: in the United Arab Emirates, for example, more than 85 percent of respondents said that the topic was on the corporate agenda, but in Saudi Arabia, the region's largest labor market, less than half did. What's more, the region's women were, on balance, more optimistic about the pace of change: 74 percent of them said that women in leadership would "absolutely" be increasingly important on their organizations' strategic agendas over the next five years, versus just 51 percent of the men.

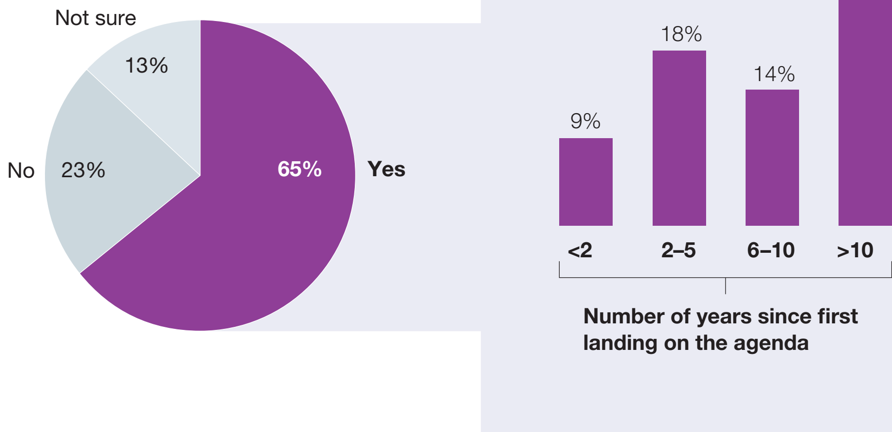
The power of diversity

Our survey respondents were broadly positive in assessing perceptions about the business impact of gender diversity: about 60 percent said that having more women in leadership positions was a "very important" driver of organizational effectiveness, and an additional 23 percent said it was "somewhat important." Nonetheless, women appeared more convinced of the link than men were: 80 percent of the women we surveyed said it was "very important," versus 53 percent of the men. This is notable, since encouragement by men (for instance, in the form of mentorship) is a significant factor affecting women's ability to reach top

Exhibit 1

A steadily growing number of organizations in Gulf Cooperation Council states are prioritizing gender diversity.

% of GCC[1] respondents, n = 555



[1] Gulf Cooperation Council states: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.
[2] Figures do not sum to 100%, because of rounding.
Source: McKinsey *Women Matter* GCC survey, 2014

management—an observation true of any region. Indeed, our McKinsey colleagues have observed similar (though lesser) disparities in mind-sets between men and women in research on other regions as well.[3]

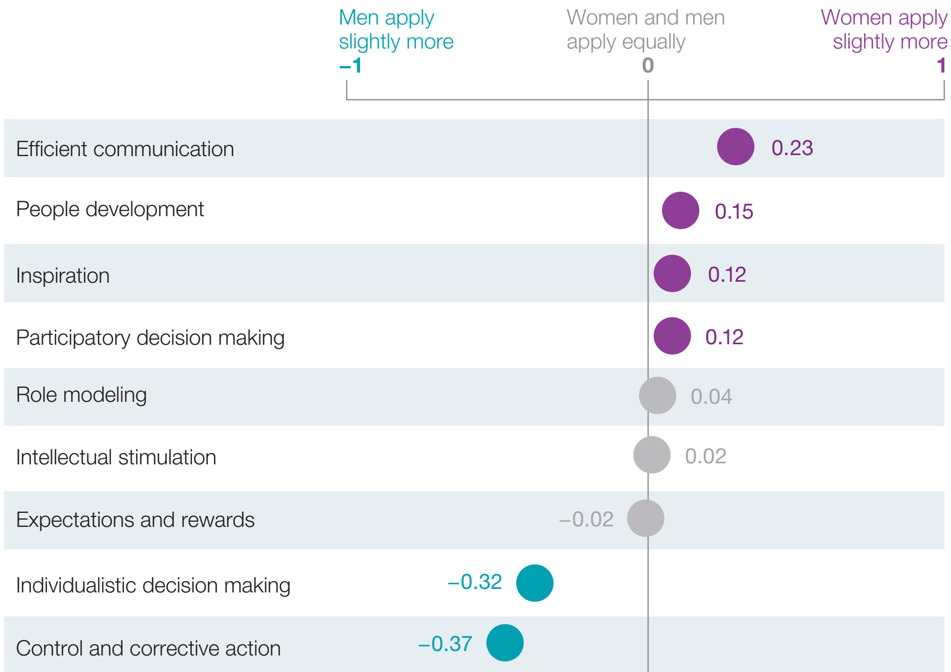
One way companies benefit from gender diversity is a more balanced mix of leadership strengths. Previous McKinsey research has identified several kinds of leadership behavior that correlate strongly with organizational effectiveness. Women leaders in the GCC, respondents indicated, exhibit these as often as their male counterparts do—and in some cases slightly more (Exhibit 2). In fact,

[3] Sandrine Devillard, Sandra Sancier-Sultan, and Charlotte Werner, "Why gender diversity at the top remains a challenge," *McKinsey Quarterly*, April 2014, mckinsey.com.

Exhibit 2

In the Gulf Cooperation Council states, women exhibit leadership behavior correlated with organizational effectiveness at least as often as their male counterparts do.

Degree to which women and men apply each of nine kinds of behavior correlated with organizational effectiveness, average of GCC[1] respondents, n = 555[2]



[1] Gulf Cooperation Council states: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[2] The sample in our research allowed us to draw the conclusion with a marginal statistical error of <5% and with a confidence level (1-alpha, type 1 error) of 95%.

Source: McKinsey *Women Matter* GCC survey, 2014

women in the GCC scored higher than men on three of the four kinds of behavior (inspiration, people development, and efficient communication) that global leaders in a previous *Women Matter* survey[4] chose most often as showing "a significant gap between current prevalence and future needs."

[4] *Women Matter 2: Female leadership, a competitive edge for the future*, October 2008, mckinsey.com.

Companies (in the GCC and elsewhere) also benefit from increased gender diversity through the mix of ideas that women bring to discussions. In addition, our survey found that in the GCC the presence of women leaders prompts a greater sense of formality in company meetings—most likely because there are fewer occasions for mixed-gender interactions there than in other regions and participants behave more formally when they do occur. Interestingly, the majority of leaders we talked to—men and women alike—felt that the added formality led to more task-focused and efficient discussions.

In addition to the current benefits of having more women leaders, our interviews revealed important future benefits. For example, many of the leaders we interviewed highlighted the potential impact of involving more women in developing products and services for which women are the key demographic. This is particularly significant in the GCC, since market-research capabilities aren't yet consistently developed there, and the social environments of women and men are relatively separate.

Finally, increasing the number of women in leadership would improve the region's low rate of labor participation for women (32 percent in the GCC, versus 51 percent in the European Union, in 2012, according to the World Bank). It would also bolster the labor participation of GCC nationals, an important political goal for countries in the region.

Big barriers remain

Despite unmistakable signs of progress, our research highlighted big challenges too. The biggest one our respondents cited—the double burden women face in balancing work and domestic responsibilities—will be familiar to professional women around the world. Similarly, many respondents in the GCC, like their counterparts elsewhere, decried the "anytime, anywhere" performance model as particularly challenging for women.

Intangible traditions and biases were rated as powerful constraints, as well—including family and social expectations that women will not work. Access to networking environments is also a problem, for

cultural and social norms in GCC states make it hard for men and women to socialize outside of professional environments. For example, women do not attend or participate in *majlis* or *diwaniya*,[5] culturally important social gatherings where men informally exchange information and expand their networks.

Highly tangible barriers play a role in the region, too—most notably, the shortage of pro-family policies and of infrastructure (Exhibit 3). In Saudi Arabia, in particular, local companies are requested to build separate working areas and support spaces for female employees. Although there is some ambiguity about what is actually required by law, many local executives we've spoken with believe that the requirements extend even to relatively costly infrastructure, such as separate entrances and elevator banks.

Implications for leaders

Making progress on gender diversity in the Gulf will require an integrated ecosystem: direction setting, training and mentorship programs, and supportive infrastructure and policies. All of these must be held together by a clear, visible, and consistent commitment from top management, without which any effort will fail.

Targeted leadership-development efforts that include formal mentorship and networking opportunities are one place to start. Given the limited opportunities for women leaders to network in the GCC, many currently rely on alternative channels, such as media coverage, to get a hearing for their ideas. While this is a source of strength worth preserving, corporate action must supplement it. Saudi Aramco, for example, takes a two-pronged approach to developing women leaders: their Women in Business program, which focuses on junior employees just starting their careers, and the Women in Leadership program, geared to the company's most senior women. (For more, see "Women leaders in the Gulf: The view from Saudi Aramco," on page 119.)

[5] *Majlis* (Arabic): place of sitting, council; *diwaniya* (Arabic): guesthouse, or a gathering held in one.

Exhibit 3

The Gulf Cooperation Council states face not only the challenges confronting the rest of the world but also unique ones of their own.

"Of the following options, what are the biggest barriers, if any, to increasing the number of local women in leadership positions at your organization?"

Barriers[1]	Gulf Cooperation Council (GCC) states,[2] % of respondents (■ Additional barriers identified in GCC research)	Difference in percentage points,[3] plus = cited more often in other countries, minus = cited less often: Asia	Europe	Latin America
"Double-burden" syndrome (women balancing work and domestic responsibilities)	29	+9	+21	+15
Lack of appropriate infrastructure (eg, transportation, women-only facilities in gender-separate environment)	28 ■	N/A	N/A	N/A
Lack of profamily public policies or support services (eg, child care)	26	+1	+16	–2
Family/social expectation that women will not work	22 ■	N/A	N/A	N/A
"Anytime, anywhere" performance model requiring unfailing availability and geographical mobility at all times	21	+3	+4	+18
There are no barriers	19	+3	+7	–8
Attitude toward women in the workplace (eg, assumptions about women's capabilities, commitment, or availability)	12 ■	N/A	N/A	N/A
Women's tendency to network less effectively than men	12	+1	+1	+5
Absence of female role models	8	–4	–3	+15

[1] Survey respondents were allowed to mark all the answers they deemed fit.
[2] Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates; n = 555.
[3] For Asia, n = 1,623; for Europe, 445; for Latin America, 547. Europe reflects C-level respondents only.

Source: McKinsey *Women Matter* surveys for GCC, Asia, Europe, and Latin America, latest available year

Structured leadership-building programs are vital. They should include training in overcoming biases, given the huge importance that personal and institutional biases play in thwarting women's leadership opportunities. Indeed, such training is needed for men and women alike. One stubborn bias we've observed in the GCC is quite prevalent among women: the idea that there are a fixed (and limited) number of spots available for women at the top. Reframing such mind-sets will be critical.

Finally, senior leaders must start building the sorts of institutional enabling mechanisms that will support long-term success. In Saudi Arabia, this can mean alternative working models or infrastructure investments to satisfy local laws. Elsewhere in the region, it means developing comprehensive, transparent company policies stipulating equal opportunities and compensation for men and women with equivalent qualifications and experience—as well as clear policies on appropriate behavior. Leading companies in the region are supplementing such policies with induction programs on how to interact appropriately with members of the opposite sex.

It's important to remember that progress begets progress and that—differing from other countries around the world—the GCC's starting point is a small generation of "first women" business and government leaders. That said, the aspirations voiced by many of the region's female leaders in our interviews will surely resonate with their counterparts around the world. In the words of one GCC executive, "We need to get more women at the top as a group, as a team. We need to make women in leadership sound uneventful and normal." Those are the right sentiments. Let such an environment flourish—in the GCC and beyond. ○

The authors would like to thank Michael Rennie, a director in McKinsey's Dubai office, for his contributions to the GCC Women in Leadership *research.*

Tari Ellis is a consultant in McKinsey's Dubai office, where **Chiara Marcati** is an associate principal and **Julia M. Sperling** is a principal.

Women leaders in the Gulf: The view from Saudi Aramco

Huda Al-Ghoson

The oil giant's most senior female executive recounts her experiences as a young leader at Saudi Aramco and describes its approach to developing talented women.

When I was a young woman growing up in Saudi Arabia, my family played a key role in helping me to get a university education and a job with Saudi Aramco. It was my mother who saw the local newspaper advertisement announcing that the company wanted to hire both males *and* females. This was very rare at the time and reflects Saudi Aramco's early commitment to women in business. When I joined the company, I was pleasantly surprised because it was hiring more and more women. At the time, however, they were still support personnel. Everybody accepted that—even us, "the girls." I was happy to have a job and eager to learn more every day.

Eventually, after getting an MBA in the United States, I found myself in charge of men as well as women, both locals and expats. This was still unusual and of course came with challenges. For example, in the early 1990s, when I was Aramco's supervisor of housing policy, a Saudi male asked to transfer out of my unit. He told my supervisor that if his family knew that his boss was a woman, it would ridicule his masculinity, and maybe he would be asked to divorce his wife. When my supervisor told me this, I said, "Absolutely, let the guy move out. I don't want to be responsible for a divorce."

In addition, at one point I supervised an expat American woman. She said that, number one, she would not work for another woman and,

number two, she would not work for a *local* woman; she thought the expatriates had come here to teach us, not to be managed by us. I told her I wouldn't force anybody to work for me but asked her to stay in my unit for three more months. She did and then withdrew her request to transfer out.

Over time, women became increasingly accepted in the workplace—and in leadership positions, too. Today we have more talented, capable, and ambitious educated women than ever. There are a lot of role models around the country, the region, and the world, and many people understand that women can handle a job as well as men. However, in Saudi Arabia, women, especially if they are married and have children, face a problem managing their personal and work lives. Here we still believe that raising children and running a household is a woman's job. The man does not share these responsibilities. That puts pressure on many women.

Developing the next generation

Saudi Aramco has long been a regional leader in hiring women. We hired our first in 1964. The environment was welcoming and supportive. But societal factors and limited educational opportunities meant that we did not attract or retain many women. Often, they were viewed as "short-timers."

Given our strategic goal to become the world's leading integrated energy and chemical company by 2020, we realized that we had to have the right talent. There is a huge shortage of qualified, skilled professionals in our industry. Yet we have a huge pool of untapped talent—women.

The number of women in Saudi Aramco had risen, but not quickly enough to meet our goals, so in 2010 we set up two initiatives to expand women's participation. One program, Women in Business, targets younger people starting their careers. The second, Women in Leadership, is for senior employees. In the former, we teach basic soft skills to build character, self-confidence, resilience, tolerance, flexibility, assertiveness, and awareness—how to succeed in a male-dominated business. Some of these women have never worked with men or interacted with them outside their families and don't know how to do so. When such women come to a more open, diverse company, some stumble and feel awkward. Very often, you are the

only woman in a room full of men. You find it difficult to speak up or do a presentation. And young women can be invisible: they do their work and share it with others, but if they don't speak up, their contribution may not be noticed.

So the Women in Business program aims to raise awareness and train women to speak up, to become visible. We want them to contribute in ways that everyone can see, to ask the boss for meetings where they can give their feedback and opinions, to document their contributions, and to manage their own careers. Women leaders in Aramco come to the program to discuss their experiences with participants and describe awkward situations they dealt with successfully. On the last day, we have a panel discussion. Several male and female leaders talk about these issues and answer questions about moving forward at work. Some 700 women have gone through the program.

After it ends, the participants custom-build a network of women in the company and select mentors. Women usually choose women, but they don't have to. I am grateful to my own mentors, who have all been men because no women were top leaders in the company. A male mentor focuses on career advice and how to network with other male leaders. He knows them better than I do because they meet in the same social circles, so he is more familiar with their personalities, mind-sets, and management styles. A female mentor may focus more on women's issues—how to deal with not feeling accepted, for example. The focus is mainly on how to act, behave, present yourself.

The other program, Women in Leadership—now in its third year—is for more senior women, both Saudis and expats. The junior women have many peers in the younger generation. They have their community, bonded through Twitter and Facebook. Not so for the senior people, who joined Aramco when it had fewer women and learned to meet the expectations of the company and society. Now they work to develop a leadership style that is both true to themselves and effective within a specific organizational context.

Women in Leadership combines self-awareness diagnostics, guided discussions, lectures, and interactive exercises. The program includes two forums. The first shows participants how to lead themselves by discovering their own leadership style and approach: where do you get your energy, who is in your network, what were

formative moments in your career, which strengths did you use to overcome obstacles. At the end of this two-and-a-half-day forum, the **women write a letter to *themselves*** about what they hope to explore in the gap between the two forums. Six weeks later, they open the letter and assess how they used that time. The second forum focuses on how to lead *others*—for example, negotiating with vendors or leading a team. About 60 women have gone through the program.

We are also expanding outreach programs in which we invite Saudi women still at school or university to hear inspirational speeches and build soft skills in areas such as communications. We offer scholarships to young women to pursue STEM studies at universities around the world, as well. This year, we have created a unit that manages all our women-in-the-workforce activities.

The company is making progress. A few years ago, we had only three or four women leaders. Today, the number is 84. Increasing the representation of women in technical fields is the biggest challenge, but we believe we will solve it in time. Meanwhile, our programs have been an inspiration for the rest of the Kingdom. We have been approached by companies, government agencies, and educational institutions to help them launch similar efforts. And after seeing the programs' benefits, our male employees are saying that the company should address *their* specific needs, too, and strengthen their leadership skills. We are improving the environment for everyone.

People in Saudi Arabia are realizing that creating opportunities for women won't affect our Islamic values. It won't demean us, nor will we fundamentally change our traditional ways. There is also the economic dimension. Everybody wants to maintain a high standard of living, and many families can't do that with one salary. Two incomes will help families to send their kids to good schools, get good medical care, maintain a good lifestyle, and prosper and grow. Ultimately, a successful woman is a happy woman, and that will be reflected in the way she cares for her children, her husband, her family, and herself. o

Huda Al-Ghoson is the executive director of employee relations and training at Saudi Aramco. This commentary is adapted from an interview conducted by **Thomas Fleming,** a former member of McKinsey Publishing, and **Julia M. Sperling,** a principal in the Dubai office.

Fostering women leaders: A fitness test for your top team

Lareina Yee

Posing five questions can help start a challenging management conversation.

The challenges are well known: women in business continue to face a formidable gender gap for senior-leadership positions.[1] Moreover, there are fewer and fewer women at each step along the path to the C-suite, although they represent a majority of entry-level employees at Fortune 500 companies and outnumber men in college-graduation rates.[2] Increasingly, the barriers too are well known: a mix of cultural factors, ingrained mind-sets, and stubborn forms of behavior, including a tendency to tap a much narrower band of women leaders than is possible given the available talent pool.

Much has been written about the nature of the challenges.[3] I want to focus on what companies can do to take action. In this article, I've distilled some forward-leaning practices into five questions that can serve as a fitness test for your top team. In my experience, an

[1] Women hold fewer than 15 percent of executive-officer positions in Fortune 500 companies. For more, see "Statistical overview of women in the workplace," Catalyst, March 3, 2014, catalyst.org.

[2] See Joseph Chamie, "Women more educated than men but still paid less," *YaleGlobal Online*, March 6, 2014, yaleglobal.yale.edu.

[3] For more on this topic from *McKinsey Quarterly*, see Sandrine Devillard, Sandra Sancier-Sultan, and Charlotte Werner, "Why gender diversity at the top remains a challenge," April 2014; Joanna Barsh, Sandra Nudelman, and Lareina Yee, "Lessons from the leading edge of gender diversity," April 2013; Joanna Barsh, Sandrine Devillard, and Jin Wang, "The global gender agenda," November 2012; and Joanna Barsh and Lareina Yee, "Changing companies' minds about women," September 2011, all available on mckinsey.com.

organization that is making progress on such issues tends to explore them in concert. At the very least, these questions can help generate the kinds of challenging conversations that executive teams around the world should be having. The stakes are too high not to have them. As I heard the CEO of a US healthcare company say recently, "The business case is simple: my company needs the best talent. Why would I handicap that by 50 percent?"

1. Where are the women in our talent pipeline?

Most senior executives know intuitively how many women do (or don't) hold top-leadership roles at their companies. But in the United States, surprisingly few of them keep precise track of how women do (or don't) move through their talent pipelines—from entry all the way up to the top-executive ranks.

A clear picture is important. Because such pipelines tend to be unique, "default" solutions, though well-intentioned, can miss the mark; for instance, ramping up a recruitment drive for women won't help an organization struggling to retain female vice presidents. In the US healthcare industry, women make up more than 75 percent of the entry labor force but hold fewer than one-third of the most senior positions.[4] Other organizations struggle with recruitment. In US high-tech companies, it is not unusual for women to make up just 30 percent of the entry ranks. One likely factor: the decline in the number of female computer-science college undergraduates. From 2000 to 2011, the proportion of women earning computer-science degrees in the United States sank from 28 percent of the total to 18 percent.[5]

How to gather pipeline information is no secret, and what to do with it shouldn't be either. Outcome metrics ought to be reviewed annually, and leading indicators (such as employee sentiment and promotion trends) should be examined during quarterly business reviews. All of these metrics must be considered elements of an ongoing management conversation.

[4] See "Women in U.S. healthcare," Catalyst, April 9, 2014, catalyst.org.

[5] See *Science and Engineering Indicators 2014*, National Science Foundation, 2014, nsf.gov.

Once the pipeline is visible, a related conversation should happen about the distribution of women's roles—in part to get a better sense of the career barriers they face. For example, in the United States, about two-thirds of women in Fortune 500 companies begin their careers in line (as opposed to support-staff) roles. Yet the figures at the top are reversed: roughly two-thirds of the women in the C-suite occupy human resources, marketing, or other support positions. Whether such patterns are a problem varies by organization; awareness is the first step toward understanding if they are.

A major consumer-goods company, for example, identified 500 pivotal roles across the organization. For each of them, it wants to have a succession plan five candidates deep (a "hit by a bus" plan). The company encourages the creation of diverse slates of candidates on these lists and tracks outcomes over time to ensure that it is making progress on its diversity goals, including the appointment of enough women to leadership roles. Interestingly, the effort is considered a talent initiative, not a women's initiative—a distinction that models gender-neutral behavior in promotion decisions.

Finally, companies should consider the benefits of transparency: the act of publicly sharing data on gender diversity sends staff and external parties alike a clear message that the status quo is insufficient. In recent months, several companies (including eBay, Facebook, Google, LinkedIn, and Yahoo!) have taken this step. By doing so, they have initiated a pragmatic conversation about what organizations can do to change.

2. What skills are we helping women build?

Many women's programs focus on convening, creating, and broadening networks. While these are important investments, they are insufficient. Companies should also instill the capabilities women need to thrive. Some of the most important are resilience, grit, and confidence.

Resilience is the capacity to recover quickly from difficulties—a form of toughness. Grit is resolve, courage, and strength of character. Confidence is a level of self-assurance arising from an appreciation of your own abilities or qualities. In business settings, resilience

allows us to get up after making a mistake or encountering a challenge, grit allows us to push through walls and rise above challenges, and confidence helps transform challenging experiences into greater self-assurance, not self-doubt.

In our 2012 interviews with 250 high-ranking women executives, we found that they thought the top attributes of their own success were resilience and grit, which ranked higher than more obvious factors, such as a "results orientation." We also heard moving stories about how perseverance through challenging circumstances can shape a woman's ability to lead. A former plant manager, for example, described the aftermath of an accident and her effort (in the middle of the night) to understand the circumstances in which it occurred, to ensure the workers' safety, and to communicate with the press. Years later, this woman—now a senior executive at the company—cites the experience as a turning point in her career because it gave her confidence at a moment of failure and crisis.

Academic work highlights the importance of determination, as well. The University of Pennsylvania's Angela Lee Duckworth found that among public-school students in Chicago, those with more grit were significantly more likely to graduate.[6] Similarly, research by Stanford's Carol Dweck finds that students are more successful when they are praised and recognized for their contributions, hard work, practice, and effort—in short, for a mind-set of growth. Such a mind-set is valuable in corporate environments too, for it suggests that women can shape (and reshape) their own advancement and success. The good news is that these capabilities are coachable and that educational innovation (online, video, and experiential learning, for example) ought to help. Leaders should encourage experimentation to accelerate progress.

3. Do we provide sponsors along with role models?

Intuitively, we know that seeing female role models makes a huge difference to younger women. Research confirms this intuition. For example, a 2012 study found that young Indian girls living in villages with a stronger representation of women in public leadership

[6] See Angela Lee Duckworth, "The key to success? Grit," TED, April 2013, ted.com.

roles were significantly more likely to see themselves as future leaders.[7] The Geena Davis Institute on Gender in Media also highlights the influence that visible female role models (or the lack of them) can have on the way girls perceive their future possibilities. (For more, see Geena Davis's essay, "Addressing unconscious bias," on page 130.)

To go further, companies should focus on sponsorship, including the creation of opportunities. In leading companies, formal sponsorship programs help fill the opportunity gap by encouraging women to set higher aspirations and by finding ways to open doors for them.[8] In our survey of female leaders, nearly 60 percent of them said that if they could relive their careers, they would have more sponsors.

Sponsorship is an area where men can play a huge role. In fact, it is one of the most basic commitments male leaders can make to help increase the number of talented women in their organizations. A simple question to ask men in senior roles is this: How many of you sponsor at least one woman? At the same time, of course, ask the women in leadership positions what they are doing to share their stories and to make themselves more visible role models for women throughout the ranks. Sponsorship programs with tangible goals can be highly effective. At eBay, for example, senior vice presidents and vice presidents set a goal of developing top-talent women by sponsoring five of them. Such efforts have helped the company more than double the number of women in leadership roles since 2010.[9]

4. Are we rooting out unconscious biases?

One of the biggest challenges exists squarely in the heads of employees: the unconscious biases that shadow women throughout their careers and can set them up for failure.[10] Held by men and women alike, these biases take many forms.

[7] Lori Beaman, Esther Duflo, Rohini Pande, and Petia Topalova, "Female leadership raises aspirations and educational attainment for girls: A policy experiment in India," *Science*, 2012, Volume 335, Number 6068, pp. 582–86.

[8] For more on sponsorship, see Sylvia Ann Hewlett, *Forget a Mentor, Find a Sponsor: The New Way to Fast-Track Your Career*, Boston, MA: Harvard Business School Press, 2013.

[9] For more about eBay's experiences, see Michelle Angier and Beth Axelrod, "Realizing the power of talented women," *McKinsey Quarterly*, September 2014, on mckinsey.com.

[10] For example, see Shelley Correll, *Minimizing the Motherhood Penalty: What Works, What Doesn't and Why?*, Harvard Business School "Gender and work: Challenging conventional wisdom" symposium, Boston, MA, March 1, 2013, hbs.edu.

Smart companies work hard to make unconscious biases more conscious and then to root them out so that they don't affect the culture in wide-ranging and unhelpful ways. Actions include training, surveys (to gain insights), and policy remedies that create a more level playing field. For example:

- Denise Russell Fleming, a vice president at BAE Systems, recently told the *Wall Street Journal* about work the company is doing to train managers and executives to overcome bias. The effort is designed to weed out even seemingly innocuous behavior, such as overlooking introverts during meetings, that can put women at a disadvantage.[11]

- To measure the progress of the eBay Women's Initiative Network, the company uses a survey that highlights areas of concern for all employees—such as promotions, hiring, challenging assignments, and the visibility of job opportunities. In addition to focusing on women in leadership, the company is working to improve its culture more broadly.

- When George Halvorson was chairman and CEO of Kaiser Permanente, he instituted a "rule of two" to encourage diversity and help avoid the "just like me" bias that's prevalent in many promotion decisions. For appointments at the VP level and above, Halvorson encouraged leaders to bring three candidates, and no more than two of them could have a similar demographic profile—for example, sex or race. (For more, see "Lessons from a veteran diversity advocate," an interview with George Halvorson, on mckinsey.com.)

- Last year, Google—where men make up 83 percent of all engineering employees and 70 percent of the total population—initiated diversity-training workshops based on academic research into unconscious bias. While reversing biases is difficult, there have been early success indicators in discussions about promotion and in improved awareness.[12]

[11] Joann S. Lublin, "Bringing hidden biases into the light: Big businesses teach staffers how 'unconscious bias' impacts decisions," *Wall Street Journal*, January 9, 2014, wsj.com.

[12] Farhad Manjoo, "Exposing hidden bias at Google," *New York Times*, September 24, 2014, nytimes.com.

5. How much are our policies helping?

Although the most stubborn barriers are inside the heads of employees, this isn't to say that companies have exhausted the potential of corporate policy to effect change. Child-leave policies are one area ripe for improvement: some US companies are raising the number of weeks for maternity leave, thus resembling international norms more closely.[13] Both Google and Yahoo! increased the number of days they allow for child leave. Other companies are more publicly encouraging men to take paternity leave—a move that helps chip away at prevalent gender norms about caregiving. Indeed, in one women's leadership workshop I attended, the highest-rated recommendation was to make paternity leave mandatory for men so that they could more fully take part in raising kids and reduce the perception that child care is a "women's issue." Such ideas are intriguing, as they suggest tangible ways a company's policies can affect the mind-sets of employees.

Part-time or other flexible work policies are a sore spot; they look great on paper, but few employees take advantage of them: McKinsey research has found that less than 1 percent of men or women did so at companies offering such options at the executive level. Clearly, policies that aren't much used are great opportunities for management discussions, and while these conversations can be uncomfortable, they can also lead to new ways of working. (For example, see "Championing gender equality in Australia," on page 105.)

Uncomfortable conversations are often necessary to identify the pragmatic actions that can improve a company's odds of developing women leaders. The good news is that the rewards—a stronger workforce that fully taps the available talent across the economy—are well worth it. The power to change and to keep moving forward lies in our hands.

[13] Denmark and Venezuela, for example, call for 18 weeks of paid maternity leave. The United States mandates up to 12 weeks of *unpaid* leave. For more, see Naj Ghosheh, *Working Conditions Laws Report 2012: A global review*, International Labour Office, 2013, ilo.org.

Lareina Yee is a principal in McKinsey's San Francisco office.

Addressing unconscious bias

Geena Davis

Does lopsided male representation in media skew our perceptions? Geena Davis believes it does and that corporations have a critical role in driving change.

Working on films that resonated with female audiences like *Thelma and Louise* and *A League of Their Own* heightened my awareness of how few opportunities women have to feel empowered coming out of a movie. But it wasn't until I had my first child that I noticed a similar problem in children's media, and its surprising link to the issues that plague us in adulthood.

When my daughter was a toddler, and I started watching little kids' TV shows and G-rated movies with her, I was thunderstruck by the stunning dearth of female characters. When I mentioned it to studio executives, they reassured me that the problem had already been fixed. I realized I wouldn't get anywhere without the numbers. So, I commissioned the largest study ever done on children's television and films—and founded my Institute on Gender in Media, to engage the industry directly through research and collaboration.

When we present the data to studios and content creators, their jaws are on the ground. In family films, the ratio of males to females is 3:1. Shockingly, the ratio of male to female characters has been exactly the same since *1946*. Of the characters with jobs, 81 percent are male. And even more baffling, women make up only 17 percent of characters in crowd scenes in these films.

In many segments of society—Fortune 500 boards, law partners, tenured professors, Congress—the percentage of women stalls out at around 17 percent. I don't think that's a coincidence. We all grew up watching vast amounts of media with the same ratio. What if we're conditioned to see 17 percent *as the norm*?

Media images have a profound effect on how we see the world and our role in it. Unfortunately, the more hours of television a girl watches, the fewer opportunities she thinks she has in life. That psychological ceiling, installed at an early age, continues to influence her decisions as an adult. If women are depicted as one-dimensional, stereotyped, hypersexualized, or simply not there at all, it sends a clear message: women are not as important as men. And that has an enormous impact on business and society.

We can't ignore the issue of unconscious bias. It's just in us, planted and reinforced by the media from a very young age. There was a recent study at Yale where scientists were given two versions of the same résumé for a job opening.[1] The résumés were identical—except for the candidate's first name. The "male" candidate was judged to be more talented and experienced; he was selected for the job more often, and at a higher salary. That's huge—and it happens all the time.

Corporations need to address unconscious bias, or it will flourish under the radar and undermine any reforms you undertake. Like the scientists in the Yale study, people just don't realize they have unconscious gender bias, so it's important to bring someone in to educate the company, top-down. There's also the external side of it: How are you attracting your customers? How are you presenting yourself, as an organization, to the world? There's a lot of unconscious negative messaging that can slip in. So examine all aspects of your business, and when making decisions, stop and think, "Have I looked at this with a gender lens? Do I have enough women on my team to have a dialogue that incorporates multiple perspectives?"

[1] Victoria L. Brescoli et al., "Science faculty's subtle gender biases favor male students," *PNAS*, Volume 109, Number 41, October 9, 2012, pnas.org.

Geena Davis is the founder and chair of the Geena Davis Institute on Gender in Media.

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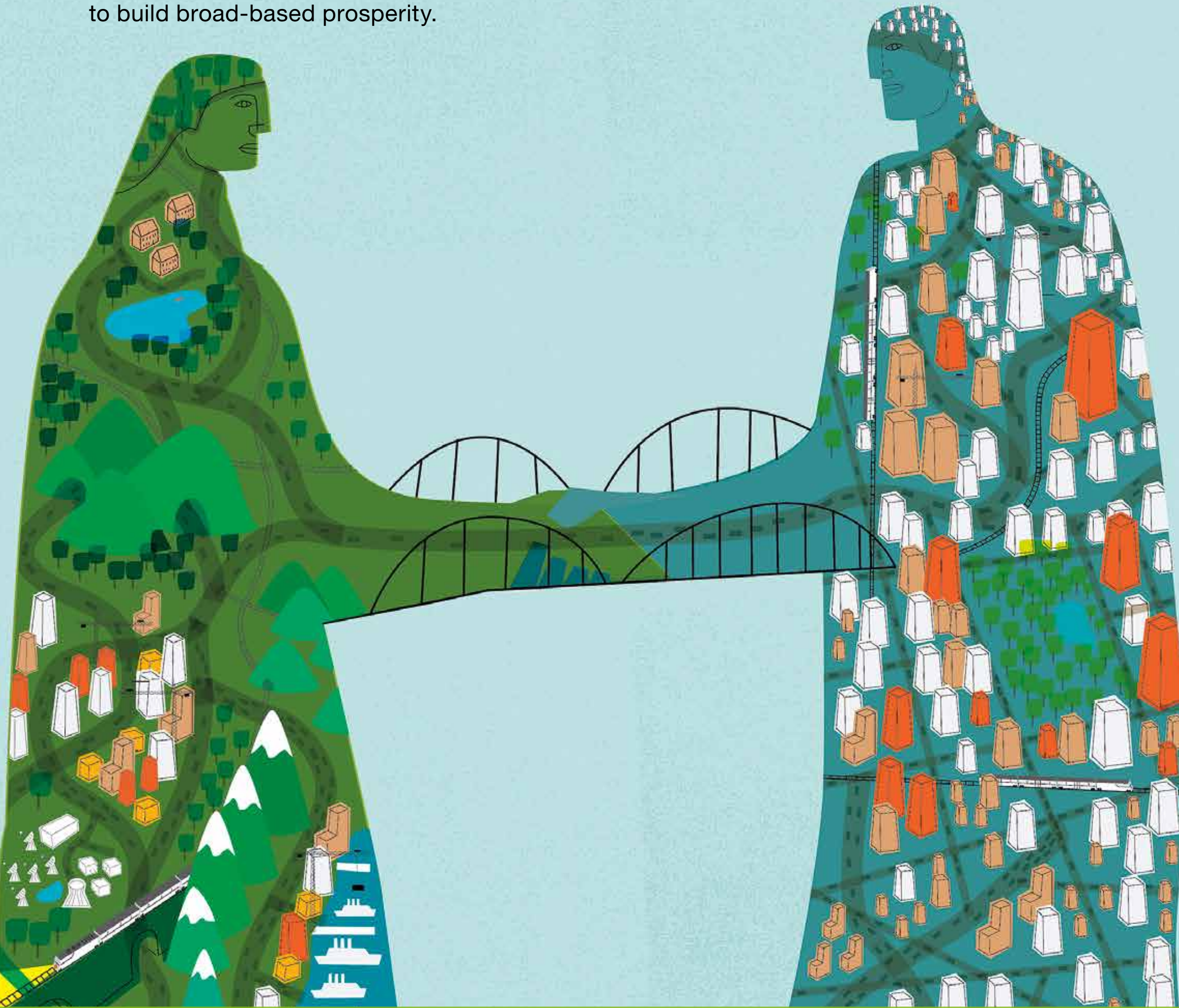
Extra Point

Taking care of business

At the close of our 50th anniversary year, we look back to 1964, when former IBM CEO Thomas Watson Jr. commented in the *Quarterly* on a challenge that's still vitally important today: harnessing the power of business and markets to build broad-based prosperity.



"When people insist on social betterment and justice they are not going to be dissuaded by cries of alarm at what they may be doing to the free enterprise system. . . . To keep faith in our business system . . . the best thing we can do is to make our system work so that everyone shares fairly in it."

—Thomas Watson Jr.

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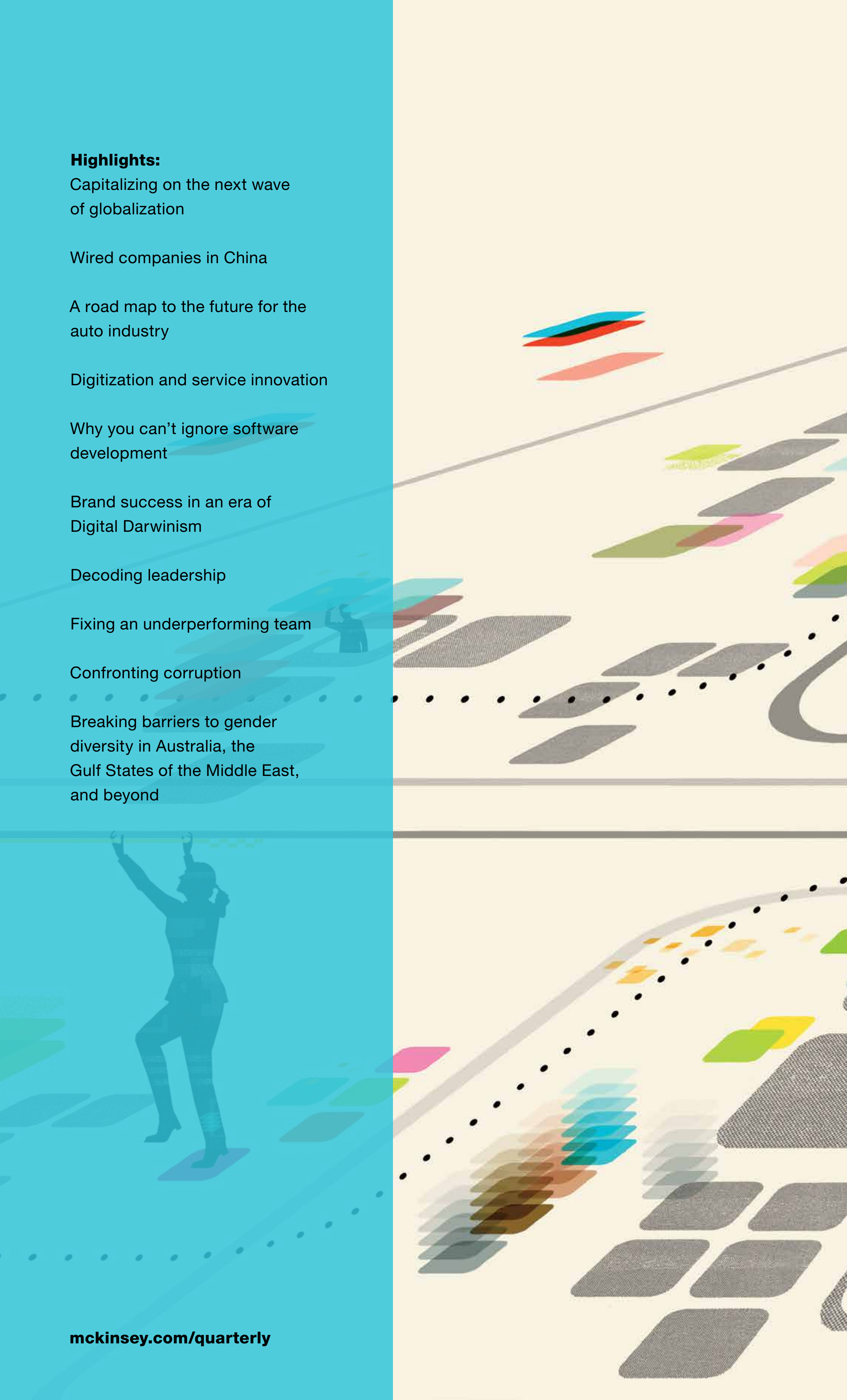

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Breaking barriers to gender diversity in Australia, the Gulf States of the Middle East, and beyond

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