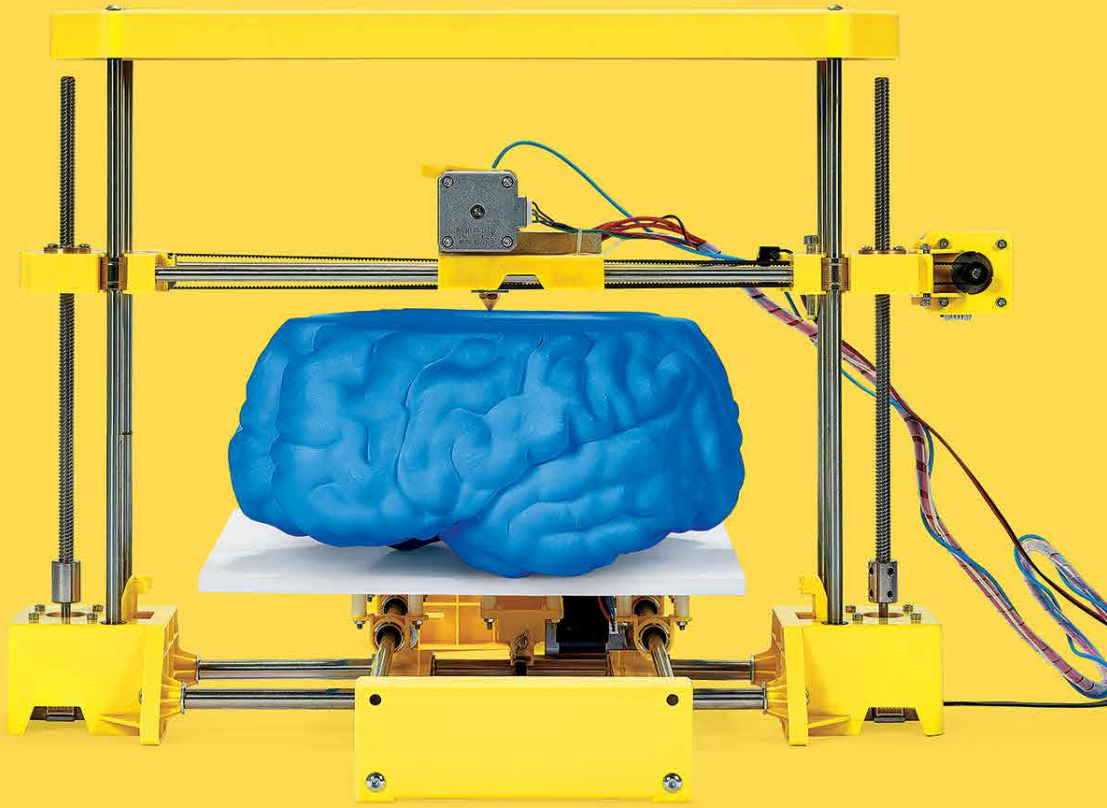


2017 Number 4

# McKinsey Quarterly



## Artificial intelligence takes shape

AI is poised to transform the  
workplace and the economy

Copyright © 2017  
McKinsey & Company.  
All rights reserved.

Published since 1964  
by McKinsey & Company,  
55 East 52nd Street,  
New York, New York 10022.

*McKinsey Quarterly* meets  
the Forest Stewardship  
Council (FSC) chain-of-  
custody standards.

The paper used in the  
*Quarterly* is certified as being  
produced in an environ-  
mentally responsible, socially  
beneficial, and economi-  
cally viable way.

Printed in the United States  
of America.

# McKinsey Quarterly

## THIS QUARTER

Six years ago, economist W. Brian Arthur suggested in the pages of the *Quarterly* that we were witnessing the birth of a “second economy” comprising digital business processes that continuously communicate with one another. Since then, the second economy has been busy generating, storing, and analyzing more and more data—and we’ve been learning how to make better sense of it. The resulting advances in algorithms, language processing, vision recognition, and the like are, in Arthur’s view, giving rise to something new: an “external intelligence” that represents a source of truly autonomous, intelligent action.

Arthur’s analysis of the implications, entitled “Where is technology taking the economy?,” helps anchor this issue of the *Quarterly*, which shines a spotlight on artificial intelligence (AI). Arthur focuses on the economic (and political) impact of external intelligence and concludes that distribution—or, as he puts it, “how people get a share in what is produced”—is growing in importance. McKinsey Global Institute chair James Manyika and Matthew Taylor, chief executive of the Royal Society of Arts and author of the recent *Taylor review of modern working practices*, extend the discussion as they explore ways to avoid what Taylor calls “technological determinism” in our approach to AI, as well as to create “better” work.

As machines get smarter, humans must keep learning. Since 2016, McKinsey has been convening the Consortium for Advancing Adult Learning & Development (CAALD), a group of learning authorities whose members include researchers, corporate and nonprofit leaders, and McKinsey experts. At a recent summit in Boston, the group examined what artificial intelligence

means for learning. You can explore the discussion in “Getting ready for the future of work” and “Learning innovation in the digital age.” And don’t miss the open letter to leaders penned by two CAALD members, Harvard Business School professor Amy Edmondson and Bror Saxberg of the Chan Zuckerberg Initiative, which focuses on the importance of “Putting lifelong learning on the CEO agenda.”

The advance of AI has profound implications for the life of organizations, including their health, which is the subject of another package of features in this issue. Senior partner Chris Gagnon, who leads OrgSolutions, McKinsey’s center for improving organizational culture, and his colleagues unveil striking new research: when companies work on their health, they can achieve rapid, measurable improvements both in organizational well-being and in business performance; healthy organizations are more likely to orient themselves toward the long term; and companies in the midst of a rapid transformation effort boost the odds of sustaining their gains when they simultaneously address organizational health.

Health has many meanings, of course; it encompasses the efforts of individuals and organizations to stay physically well, which we explore in “Wellness at work: The promise and pitfalls.” And organizational health is heavily influenced by the actions of leaders, to whom Stanford professor Bob Sutton addresses the question: “Are you the source of workplace dysfunction?” In the brave new world we’re entering, leaders who avoid the hazards described by Sutton, and create meaning for employees coping with potentially disorienting change, will be more important than ever. [Q](#)



**Allen P. Webb**

Editor in chief, Seattle office  
McKinsey & Company

# Features



---

## HOW TECHNOLOGY IS RESHAPING THE WORKPLACE AND THE ECONOMY

### 32 Where is technology taking the economy?

We are creating an intelligence that is external to humans and housed in the virtual economy. This is bringing us into a new economic era—a distributive one—where different rules apply.

*W. Brian Arthur*

### 44 Rethinking the workplace: Flexibility, fairness, and enlightened automation

People aren't powerless in the face of new technologies; the future of work is up to us, say McKinsey Global Institute chairman James Manyika and Royal Society of Arts chief executive Matthew Taylor.



### 56 Putting lifelong learning on the CEO agenda

In an open letter to business leaders, a Harvard Business School professor and a learning engineer at the Chan Zuckerberg Initiative present an emphatic case to make learning a corporate priority.

*Amy Edmondson and Bror Saxberg*



### 62 Getting ready for the future of work

Artificial intelligence is poised to disrupt the workplace. What will the company of the future look like—and how will people keep up? These weighty questions recently occupied the experts who comprise the Consortium for Advancing Adult Learning & Development (CAALD).



### 69 Learning innovation in the digital age

As the workplace changes, so must education and training. Exciting experiments are under way—but are they enough? Read more reflections from a recent CAALD summit.

# Features

---

## THE HEALTH IMPERATIVE FOR ORGANIZATIONS, INDIVIDUALS, AND LEADERS



### 77 **Organizational health: A fast track to performance improvement**

Working on health works. It's good for your people and for your bottom line.

*Chris Gagnon, Elizabeth John, and Rob Theunissen*

---



### 88 **The yin and yang of organizational health**

Sustained performance over the long term and successful transformation in the near term require many of the same ingredients.

*Lili Duan, Rajesh Krishnan, and Brooke Weddle*

---



### 96 **Wellness at work: The promise and pitfalls**

It takes more than a discounted health-club membership to move the needle on employee well-being.

---



### 102 **Memo to the CEO: Are you the source of workplace dysfunction?**

Rudeness and bullying are rife, says Stanford professor Bob Sutton. Wise leaders figure out how to fix their teams and organizations; and they start by taking a long look in the mirror.

*Robert I. Sutton*

---



---

### 112 **Safe enough to try: An interview with Zappos CEO Tony Hsieh**

Organizations are more likely to innovate and thrive when they unleash the potential of individuals and the power of self-organizing teams, says the online retailer's CEO.

---

# Leading Edge

8

## **Democratizing diversity**

The general manager of people and culture at Australia's Origin Energy explains why it's important to go beyond top-down objectives and targets.

*Ruth Allen*

12

## **How the semiconductor industry is taking charge of its transformation**

Three snapshots demonstrate areas of change and opportunity.

17

## **Putting the right price on customer interactions**

Consumers are willing to pay more for choice in their interactions, yet most companies remain perplexed about which ones their customers really want—and how much to charge for them.

*Niklas Barwitz, Boris Körs, and Sirus Ramezani*

---

## **Industry Dynamics**

### **Insights from selected sectors**

22

#### **Fighting portfolio complexity in consumer goods**

*Rogério Hirose, Davinder Sodhi, and Alexander Thiel*

24

#### **A new map for strategic growth in banking**

*Miklos Dietz, Attila Kincses, and Zoltán Pataki*

26

#### **Applying stress tests beyond banking**

*Sven Heiligtag, Susanne Maurenbrecher, and Niklas Niemann*

---

## **China Pulse**

### **Snapshots of China's digital economy**

29

#### **China's electric-vehicle market plugs in**

*Patrick Hertzke, Nicolai Müller, and Stephanie Schenk*

---

# Closing View

123

## **Creating an innovation culture**

Corning's Silicon Valley technology chief shares how to stay creative over the long haul, drawing on 40 years of experience.

*Dr. Waquih Ishak*

---

# Extra Point

128

## **Seven factors that encourage leaders to act like jerks**

# McKinsey Quarterly

## **McKinsey Quarterly editors**

Frank Comes, *Executive editor*  
Lang Davison, *Executive editor*  
Tim Dickson, *Deputy editor in chief*  
Drew Holzfeind, *Assistant managing editor*  
Holly Lawson, *Associate editor*  
David Schwartz, *Senior editor*  
Allen P. Webb, *Editor in chief*

## **Contributing editors**

Mike Borruso, Eileen Hannigan,  
Cait Murphy, Mark Staples

## **Design and data visualization**

Elliott Cravitz, *Design director*  
Richard Johnson, *Senior editor, data visualization*  
Maya Kaplun, *Designer*  
Mary Reddy, *Senior editor, data visualization*

## **Editorial production**

Elizabeth Brown, Heather Byer, Roger Draper,  
Gwyn Herbein, Susan Moore, Katya Petriwsky,  
John C. Sanchez, Dana Sand, Katie Turner,  
Sneha Vats, Belinda Yu

## **Web operations**

Jeff Blender, *Web producer*  
Andrew Cha, *Web producer*  
Philip Mathew, *Web producer*  
David Peak, *Editorial assistant*

## **Distribution**

Devin A. Brown, *Social media and syndication*  
Debra Petritsch, *Logistics*

## **McKinsey Quarterly China**

Glenn Leibowitz, *Editor*  
Lin Lin, *Managing editor*

## **To change your mailing address**

### **McKinsey clients and other recipients**

[mckinsey\\_quarterly@mckinsey.com](mailto:mckinsey_quarterly@mckinsey.com)

### **McKinsey alumni**

[alumni\\_relations@mckinsey.com](mailto:alumni_relations@mckinsey.com)

## **To provide feedback or submit content proposals**

[info@support.mckinsey.com](mailto:info@support.mckinsey.com)

## **To request permission to republish an article**

[reprints@mckinsey.com](mailto:reprints@mckinsey.com)

---

## **DIGITAL OFFERINGS**

### **Websites**

[McKinsey.com/quarterly](http://McKinsey.com/quarterly)  
[McKinsey.com/featured-insights](http://McKinsey.com/featured-insights)  
[McKinseyChina.com/insights-publications](http://McKinseyChina.com/insights-publications)

### **Follow us on Twitter**

[@McKQuarterly](https://twitter.com/McKQuarterly)

### **Connect with us on LinkedIn**

[linkedin.com/company/mckinsey-&-company](http://linkedin.com/company/mckinsey-&-company)

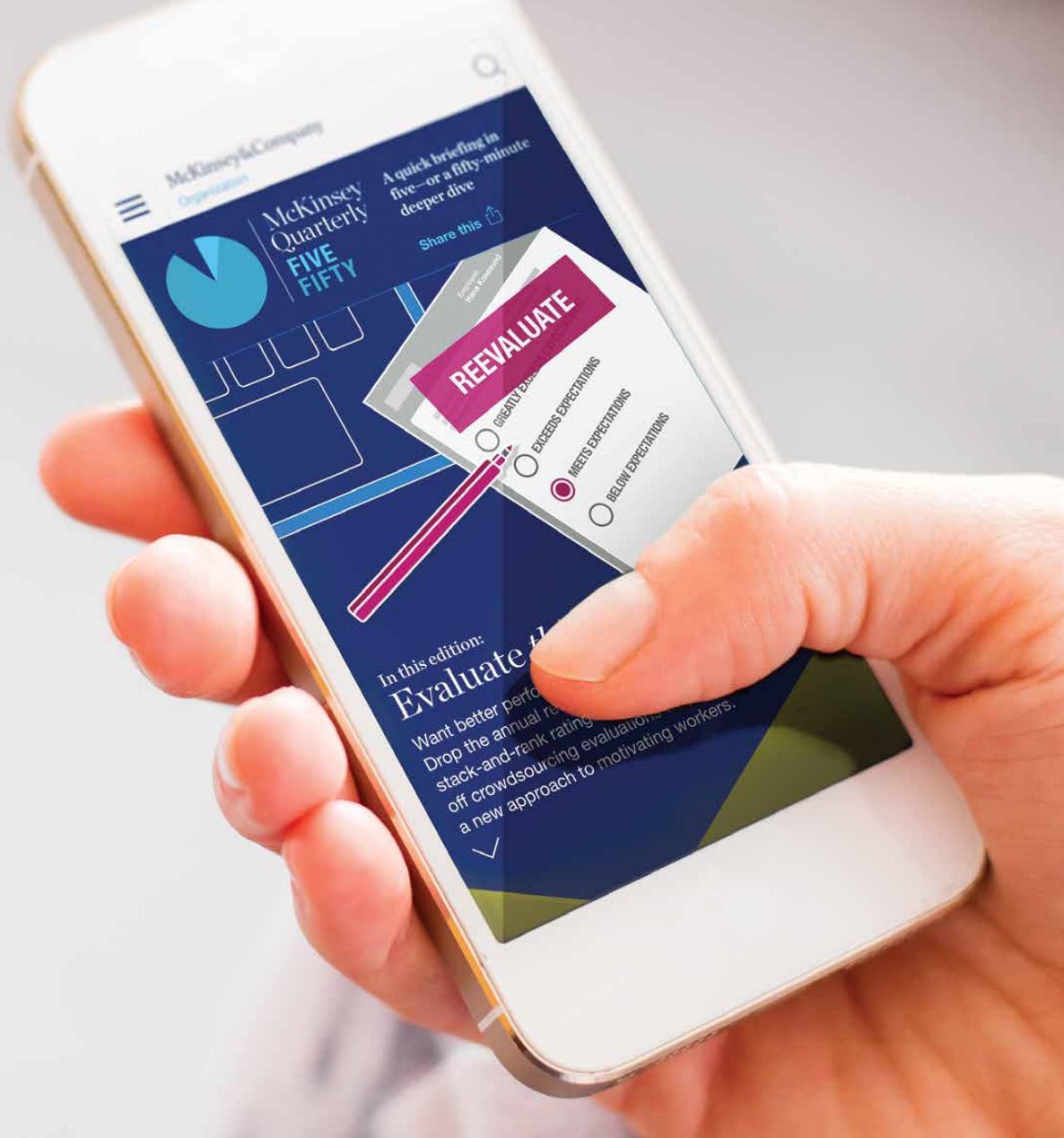
### **Join the McKinsey Quarterly community on Facebook**

[facebook.com/mckinseyquarterly](http://facebook.com/mckinseyquarterly)

### **Watch us on YouTube**

[youtube.com/mckinsey](http://youtube.com/mckinsey)





## Read the *McKinsey Quarterly Five Fifty*.

In a world increasingly flooded with management content, our weekly digital briefing cuts through the noise to save you valuable time.

Each edition connects the management issues of the day with cutting-edge McKinsey research, offering two ways to get your fill. Read a five-minute digest, or take a fifty-minute deeper dive into the underlying content.

Available at [McKinsey.com/Quarterly/The-Five-Fifty](https://McKinsey.com/Quarterly/The-Five-Fifty) and in the McKinsey Insights app.

Sign up for weekly email alerts from the *Five Fifty* on McKinsey.com.



McKinsey  
Quarterly  
**FIVE  
FIFTY**

Your weekly dose of smart

# Leading Edge

Research, trends, and emerging thinking

- 8 Democratizing diversity
  - 12 How the semiconductor industry is taking charge of its transformation
  - 17 Putting the right price on customer interactions
- Industry Dynamics:**
- 22 Fighting portfolio complexity in consumer goods
  - 24 A new map for strategic growth in banking
- China Pulse:**
- 26 Applying stress tests beyond banking
  - 29 China's electric-vehicle market plugs in

## DEMOCRATIZING DIVERSITY

The general manager of people and culture at Australia's Origin Energy explains why it's important to go beyond top-down objectives and targets.

by Ruth Allen

Origin Energy, Australia's leading electricity and gas supplier, boasts a range of operations covering exploration, power generation, and energy retailing. Two and a half years ago, the company embarked on a bold new mission to advance diversity and inclusion. Here, Ruth Allen, general manager of people and culture at Origin, shares the pain and gains of the journey so far.

Most businesses have top-down public objectives, or targets, on diversity. They are really important, and we've got three. They commit us to equal pay, to equitable job turnover between men and women, and to equal female representation at senior levels. We have made progress on all three and we continue to focus on them every day. However, we are still a long way from where we want to be.

In March 2015, one of my roles at Origin was general manager of HR for the Integrated Gas (IG) business unit. The

CEO of IG was passionate about wanting to speed up progress on diversity and inclusion and came to me for advice. As I saw it at the time, we were clear at the top of the organization about what we thought we could do to promote greater gender diversity; what we didn't have were the views of our people about what issues mattered to them and how *they* thought we could make our business unit more diverse and inclusive.

Using a crowdsourcing approach, we wrote an open invitation to the 2,000 people in IG, inviting them (regardless of rank or seniority) to use their voice and ideas to help us achieve real change.

We insisted that those who put up their hand apply in writing—that's because we wanted to make sure they were really serious and we didn't want anyone using the opportunity as a way to get access to senior people without actually doing any work. We ended up with an initial

volunteer group of about 55 (of which 50 attended the first session and 45 worked for the full 12-month commitment). It included everyone from gas-plant operators from New Zealand to cost controllers, engineers, community liaisons from our regional communities, and indigenous cultural-heritage monitors.

We borrowed from organizational-development theory—notably some of the methods of the Tavistock and Grubb Institutes in Britain aimed at minimizing structures, getting authority out of the way, and allowing human systems to take discussion in new and exciting directions. Members of this Diversity Collaborative, as we call it, chose five themes that mattered to them and that they believed we could make real progress on—gender diversity, regional diversity and inclusion (a lot of our sites in Queensland are outside the cities), indigenous relations, flexibility, and culture—and divided themselves into five subgroups. They met in quarterly workshops to explore the issues from their vantage points, particularly any impediments inhibiting them in their specific roles. One of the groups came to every monthly meeting of the IG leadership team to tell us what they had been discussing and how they thought we should address any problems. These groups assumed the leadership role on diversity, often challenging beliefs and practices they felt were limiting and demonstrating how these were at the root of the problem.

### Stretching the thinking

The power of the collaborative is that it has allowed us to look at our culture in a way that we could never have done otherwise.

We created a mechanism by which people could raise the cultural-issues barriers to diversity and inclusion that were previously undiscussable, be heard, and then be authorized to make changes. So, for example, we heard for the first time about the needs of pregnant women at remote sites and were able to rejig roles and rosters accordingly. We heard about the struggles of young mothers and became the first mining or gas company in Australia to have breastfeeding facilities at all our regional sites. We became aware of the unintended biases that occurred in our recruitment practices.

So the collaborative stretched our thinking, unlocked issues that had remained hidden, and removed significant barriers to diversity. It's also helped spawn two important company-wide initiatives: first, our All Roles Flex program (which offers some form of job flexibility to all employees, men and women, in every role at Origin), and second, the dismantlement of some of the residential camps we operate for our workers, a move that has had a positive reputational impact beyond diversity.

- **Job flexibility.** All Roles Flex emerged from discussions in the flexibility subgroup, encouraged by Liz Broderick, Australia's former sex discrimination commissioner and a guest at one of the quarterly workshops. We were struggling with the practical challenge of how to make flexibility real, but Liz urged us to adopt a radical and inclusive solution that involves all employees. As a result, we have examined every role—from maintenance and safety managers to people flying helicopters to offshore platforms—and

tried to find formal or informal ways to make jobs flexible in ways that work for the business as well as the individuals. All sorts of people are taking advantage, from women with young families to men who want the time to study for extra qualifications. A recent straw poll of 500 of our people established that 80 percent of them are either working flexibly or having conversations with their managers about flexibility. Feedback suggests this is becoming one of our key cultural strengths.

- **Location choice.** The second important initiative came out of discussions in the regional-diversity group. These talks revealed that many employees who fly in and fly out to their gas-fields roles would, if given the choice, prefer to relocate and live in local communities with their families rather than stay for short periods on their own in one of the residential camps we run near operations. A key issue for these people was covering the cost of relocating. Previously, we only paid relocation expenses if the company initiated such a move; now we support individuals who ask to relocate, provided that makes sense for all sides. The benefits are already clear, not just in more contented employees who wanted to move. As a gas explorer and producer, our license to operate comes from the communities around our sites and the landowners and farmers on whose land we explore for new energy sources. Integrating Origin people into towns and villages, where they spend money and provide other support by, say, going to charity nights and other events, is much more welcome to communities than our






housing, feeding, and entertaining our workers in their own separate residential units. The diversity and inclusion initiative was not the only factor, but it has helped us think about relocation more deeply. We are now in the process of closing two of our camps and moving people back into local towns.


### **A diversity playbook**

I wouldn't pretend for a minute that we've cracked the diversity challenge yet—women, for example, still represent only 24 percent of the workforce in the Integrated Gas division, and we're committed long-term to our three public targets right across Origin. But we've learned some valuable lessons so far (exhibit).

- **Don't ignore structure.** Most importantly, I think, is having a mix of what I call art *and* science. For all the power of the bottom-up energy from the collaborative, we have struggled at times to implement the ideas. From the outset, each group was sponsored by a member of the Integrated Gas leadership team, and we provided a process coach to help with group dynamics. But ultimately you need more structure around an initiative like this. So we established the “nerve center,” a place where our volunteers could go to refine their ideas and acquire the skills and techniques to help implement them.
- **Look outside.** Bringing in experts like Liz Broderick and other speakers has been a critical part of driving inspiration. It stops you from being too insular and provides case studies and other examples of what good diversity looks like in other organizations.

## Diversity lessons from Australia's Origin Energy

	<b>Don't ignore structure</b>	Establish a "nerve center," a place to refine ideas and facilitate implementation
	<b>Look outside</b>	Bring in experts and diversity pioneers to discuss their experience
	<b>Reap the wider benefits</b>	An accompanying emphasis on flexibility, for example, may change the performance culture
	<b>Manage the frustrations</b>	Managers may need support in adjusting to a flexible workforce
	<b>It's gender first</b>	If you don't crack that, you won't crack the rest—an increase in female recruits is no good without a climate in which people can be heard

- **Reap the wider benefits.** The benefits of the initiative can go beyond diversity and influence group culture. The emphasis on flexibility, for instance, has made us more performance-oriented, with the focus now on quality of output regardless of the way people work, not the number of hours they put in.
- **Manage the frustrations.** The relationship between managers and the workforce has changed for the better. But flexible working potentially poses a threat to leaders who instinctively want to tell employees what to work on and who worry that they are losing their power if people are not physically present. You have to keep pushing to make sure that the collaborative has space to develop its views and for its voice to be heard. More junior people can need a lot of support.
- **It's gender first.** The focus on gender diversity has to be relentless, and I know from speaking to others that if we don't crack that, we won't crack the rest. At the end of the day, you can force the numbers and increase female recruits, but you have got to have a culture that is ready for them, a climate in which people can speak up and be heard. 

**Ruth Allen** is the general manager of people and culture at Origin Energy.

Copyright © 2017 McKinsey & Company. All rights reserved.

# HOW THE SEMICONDUCTOR INDUSTRY IS TAKING CHARGE OF ITS TRANSFORMATION

Three snapshots demonstrate areas of change and opportunity.

Semiconductors are the unsung heroes of technology, providing high-speed processing power for computers, flat-screen displays, smartphones, and other electronic devices.

But while semiconductor revenues are hitting record levels, recent geographic and product shifts are upending long-standing business plans. Moreover, R&D budgets are rising by about 6 percent

annually because of new technological and business challenges, such as increased complexity in coding, testing, and verification.

Three developments in the semiconductor industry—the evolving demand for automotive chips, the availability of new productivity tools, and the growth of China as a revenue source—provide opportunities to increase performance.

## CHANGING IN TANDEM: OPPORTUNITIES IN THE AUTOMOTIVE SECTOR

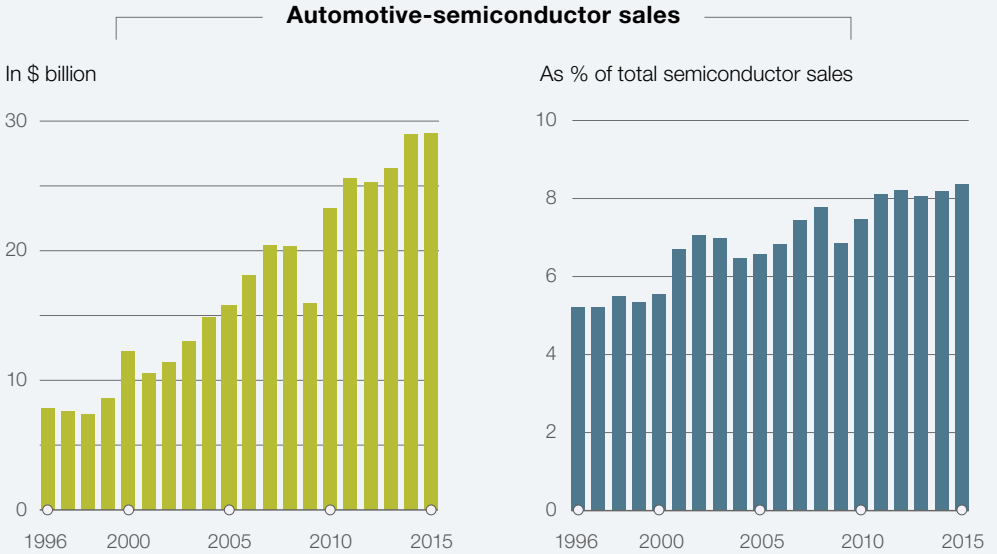
If you walked into an electronics convention today, you might see hundreds of exhibits from automotive OEMs. Their displays typically focus on new car features that rely on sophisticated electronics, such as mapping applications and automatic-braking systems. This emphasis on innovation has helped increase revenues for automotive semiconductors from about \$7 billion in 1996 to almost \$30 billion in 2015 (Exhibit 1). Automotive chips now account for about 8 percent of total semiconductor sales, and current

projections suggest that they will see about 6 percent annual growth through 2020—higher than the 3 to 4 percent growth predicted for the sector as a whole. That would put yearly revenues from automotive semiconductors in the \$39 billion to \$42 billion range.

The new electronic systems are shifting demand for semiconductors among the major application segments—body,<sup>1</sup> safety, driver information, powertrain, and chassis. For instance, the safety

Exhibit 1

**The automotive market represents a large and growing portion of semiconductor sales.**



Source: IHS; McKinsey analysis

segment only accounted for 17 percent of total demand in 2015, but this figure will rise to 24 percent by 2020, since OEMs are now developing more applications in this area. Similarly, the growth of electronic vehicles is shifting demand among device segments (such as memory, micro-components, logic, and optical and sensors).

Although all semiconductor companies are tracking these trends, the highest performers will go a step further by identifying emerging pockets of growth within each segment. Take safety again. Most growth in this burgeoning segment will come from collision-warning systems, which will account for \$4.1 billion in sales, far surpassing other segments. The best semiconductor companies will also begin

considering strategic questions now, including tactics for differentiating their offerings, addressing opportunities and challenges within the Chinese market, and collaborating with automotive OEMs or tier-one suppliers.

<sup>1</sup> Semiconductors that control lights, windows, temperature, security, and other applications.

**Stefan Burghardt** is a specialist in McKinsey's Munich office, where **Florian Weig** is a senior partner; **Seunghyuk Choi** is an associate partner in the Seoul office.

➔ For the full article, see "Mobility trends: What's ahead for automotive semiconductors," on [McKinsey.com](https://www.mckinsey.com).

# HOW ADVANCED ANALYTICS CAN IMPROVE TEAM PERFORMANCE

Like their peers in other industries, many semiconductor companies have embarked on ambitious programs to decrease costs and boost productivity using better data and analytics. Most of their efforts have focused on streamlining basic engineering tasks, such as chip design or analyzing component failure. But with costs continuing to rise, semiconductor companies are applying advanced data analytics to engineering management, with the goal of deriving fresh insights that will improve decision making.

This new analytical approach, which we term “*Moneyball* for engineers,” relies

on pattern recognition and machine learning to uncover counterintuitive management insights, typically delivering productivity gains of 20 percent or more for engineering groups.<sup>2</sup> Data from our analyses identified five staffing parameters—including some overlooked measures—that had the greatest impact on team performance in engineering management: team size, team-member fragmentation, collaboration history, individual experience, and geographic footprint (Exhibit 2). Semiconductor managers can transform their engineering groups by taking a new look at these parameters when assembling teams. In addition to providing a competitive

Exhibit 2

**Data analysis offered unexpected insights into team performance of semiconductor engineers.**

## 5 factors with **greater-than-expected** impact on team performance

### Team size

Bigger is not better: 6–8 engineers on a project team typically yielded the best results.

### Focused fragmentation

Working on multiple projects simultaneously increases productivity to a point. The optimal number varies: 3 for mechanical engineers, 7+ for firmware engineers.

### Individual experience

It's the most important personal attribute in high-skill workplaces.

### Footprint

Multiple geographic locations can make teams less productive: adding 1 new site can decrease productivity by up to 10%.

### Collaboration

Strong group dynamics help. Having team members who worked well together in the past can raise productivity by 7–10%.



edge, the new team structures should also help employees gain greater satisfaction from their jobs.

---

<sup>2</sup> *Moneyball* refers to Michael Lewis's book *Moneyball: The Art of Winning an Unfair Game* (W. W. Norton & Company, May 2003), which describes how baseball manager Billy Beane transformed the Oakland Athletics into a powerhouse by gathering less commonly used

performance data, and using sophisticated statistical analysis to identify and recruit potential stars at a lower cost.

**Eoin Leydon** is an associate partner in McKinsey's London office; **Ernest Liu** is an associate partner in the Taipei office, where **Bill Wiseman** is a senior partner.



For the full article, see "[Moneyball for engineers: What the semiconductor industry can learn from sports,](#)" on [McKinsey.com](#).

## CHINA: THE NEW GLOBAL—LOCAL CHALLENGE FOR MULTINATIONALS

China has become an important center of R&D and global product development for many OEMs. Between 2007 and 2015, overall R&D spending in the country rose more than fourfold—the greatest increase among major regions in the world. Both locally owned product-design centers and those owned by multinational corporations (MNCs) contributed to this high growth.

In an effort to better understand the market, we recently surveyed 80 executives at Chinese design centers about their current operations and future aspirations. Survey respondents cited many forces behind China's product-development surge, but one stands out: the greater talent pool within the country (Exhibit 3). With more skilled engineers and technological staff, Chinese product-design centers can create more innovative products for export, rather than simply developing low-cost offerings for the local market.

As Chinese design centers focus on innovation, their total demand for compo-

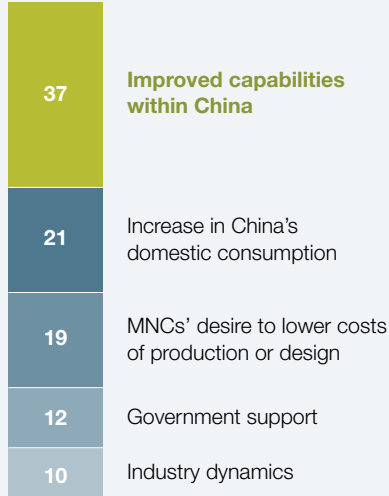
nents, including semiconductors, will increase from \$350 billion in 2016 to \$500 billion by 2020. But the path for capturing growth may be more difficult for multinational suppliers. Many of our survey respondents believe that the Chinese government will provide new incentives, including subsidies, for companies to create products that can be considered Chinese in origin. This shift could prompt multinational OEMs with significant Chinese sales volumes to increase purchases of semiconductors and other components from Chinese-owned suppliers (Exhibit 4). OEMs headquartered in China might also source more components locally. Such changes are both an opportunity and a threat to global chipmakers.

To thrive in this environment, multinational semiconductor companies should consider increasing local investment in China while also striving to maintain their global business. Options for local investment include partnerships with Chinese investors or semiconductor

Exhibit 3

**China’s design strength is drawing more R&D investment.**

**Top reasons industries are increasing product-development and design work in China,**  
 % (respondents allocated 100 points)<sup>1</sup>

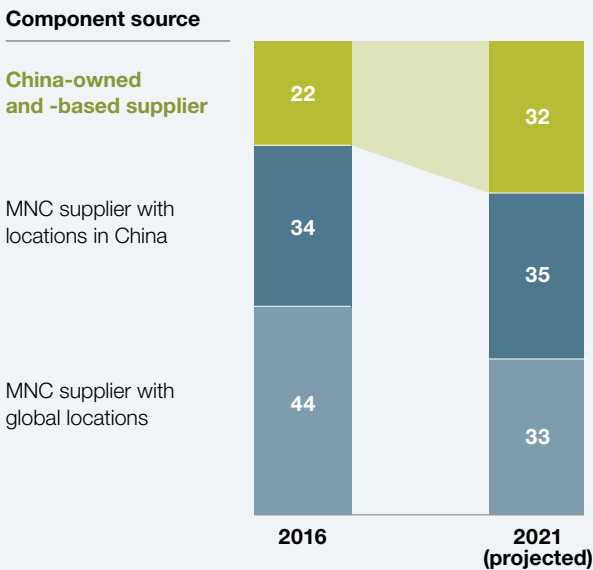


<sup>1</sup> Data reflect responses from locally owned design centers and those owned by multinational corporations; figures do not sum to 100%, because of rounding.

Exhibit 4


**Government policy may encourage MNC-owned design centers to increase their use of local component suppliers.**

**Share of spending by MNC-owned design centers on core components,**  
 % (respondents allocated 100 points)



Source for exhibits 3 and 4: McKinsey survey of 80 R&D and product-development executives at OEM design centers in China, 2016

vendors, as well as greater customization of products, pricing, and business arrangements for the Chinese market. As multinationals increase their local presence, they may need to restructure their global operating models by moving more decision-making authority to China. The shift to a new model may be challenging, however, since it requires a thorough understanding of China's available

leadership talent, regulatory issues, and intellectual-property environment. 

**Thierry Chesnais** is an associate partner in McKinsey's Hong Kong office, and **Christopher Thomas** is a partner in the Beijing office.



For the full article, see "How semiconductor companies can win in China's new product-development landscape," on [McKinsey.com](https://www.mckinsey.com).

Copyright © 2017 McKinsey & Company. All rights reserved.

## PUTTING THE RIGHT PRICE ON CUSTOMER INTERACTIONS

Consumers are willing to pay more for choice in their interactions, yet most companies remain perplexed about which ones their customers really want—and how much to charge for them.

*by Niklas Barwitz, Boris Körs, and Sirus Ramezani*

How can companies best engage with their customers to offer them new experiences, along with add-ons to existing products or services they have already paid for?

The quality of these interactions has become an article of faith in an age when consumers are pickier and have higher expectations than ever. Businesses have responded with "omnichannel" strategies to open new paths to them and have jumped at opportunities to launch mobile apps, video consultations, chat boxes, and the like.

Few companies, however, are grappling with the implications of this proliferation—

not least the attendant investment and operating costs. It's not easy to manage and integrate these varied and complex interactions in a way that makes them feel seamless to customers. Nor is it straightforward to work out how many interaction choices a consumer really wants or needs. More critically, though, the burning issue for a CEO, a CFO, or a marketing executive is whether the new forms of engagement add value. Do they create enough pricing power or additional demand to cover costs?

To better understand some of the issues, we recently collected data from the German and Swiss health-insurance

industries, which have introduced a wide range of interaction options and are now grappling with the challenges of providing them at lower cost. Our analysis could be a good starting point for companies in other industries and geographies to explore the types of interaction platforms that make the most sense for them.

**Insights**

Data derived from 2,000 health-insurance customers allowed us to model key factors that influence the choice of coverage, particularly interaction choices in plans. A conjoint analysis allowed us to distill the relative importance of these choices and gave us a basis for uncovering consumers’

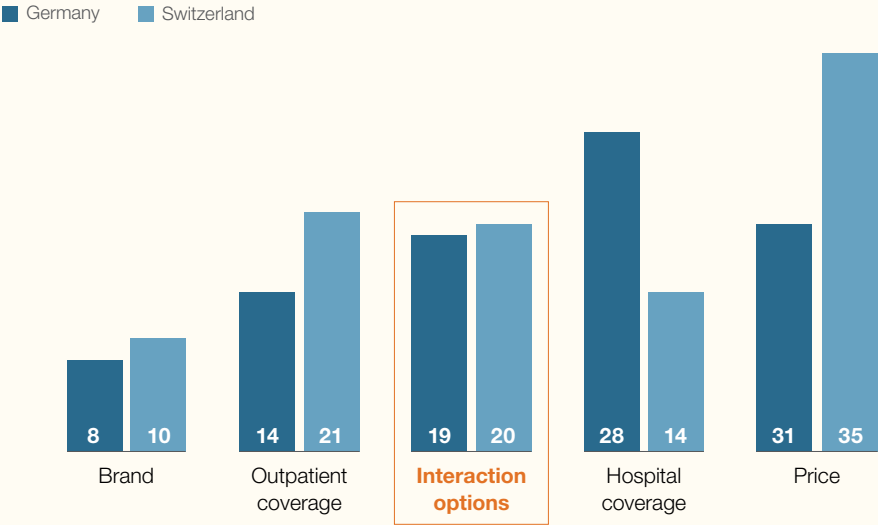
willingness to pay for each of them.<sup>1</sup> The findings generated insights for strategy, pricing, and market share.

*Strategic value.* Our analysis showed that the interaction options available are very important to consumers choosing an insurer in the first place (Exhibit 1). They rank this factor higher than a firm’s brand and, in some cases, higher than or nearly as high as the available hospital and outpatient coverage, the core of what customers actually buy. Only the level of premiums figured more prominently. It’s interesting that interaction options were more of an issue for women, who often handle health insurance for their families, and for younger purchasers, who generally

Exhibit 1

**In our analysis, interaction choice was found to be more important to consumers than a company’s brand.**

**Relative importance of attributes to private-health-insurance customers,<sup>1</sup> %**



<sup>1</sup> Choice-based conjoint analysis of 1,000 respondents in Germany and 1,002 in Switzerland.

have less experience with insurers and tend to look for advice and support to supplement self-service offerings.

(a service some companies have offered recently) added a degree of willingness to pay, but not much.

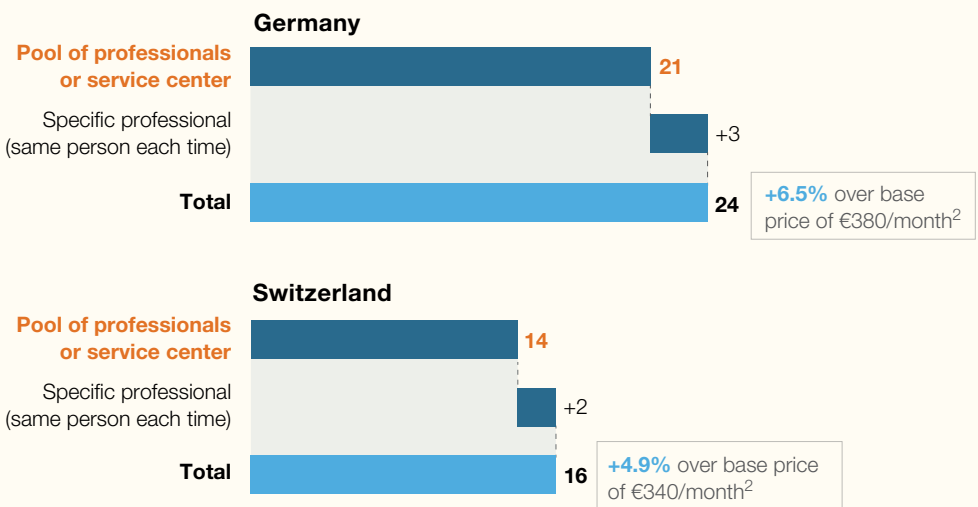
**Willingness to pay.** We found that consumers are generally more willing to pay higher premiums when companies offer more interaction choices. And, crucially, the higher premiums that customers said they would accept exceeded the cost of providing additional interaction options. As Exhibit 2 shows, consumers said they would pay an additional 14 to 21 euros a month to be able to speak with an identifiable professional at a service center rather, for example, than receiving only an anonymous response to an online query. A specific adviser for repeated contacts

We then investigated the value customers attach to traditional interactions (by phone or mail) and digital ones (via online portals, phone apps, or videos). We found that customers would pay considerably more for access to both—much more than for digital alone. In some cases (a simple address change, for example), they told us that they would certainly perceive digital interactions to be useful, but in others (questions, say, about a complex claim that was only partially reimbursed) they value having telephone access to an individual. Surprisingly, there was little interest

Exhibit 2

**Consumers were willing to pay more for assured access to a professional at a provider’s service center.**

**Median additional willingness to pay,<sup>1</sup> €**  
*(base price assumes interaction partner is anonymous)*



<sup>1</sup> Choice-based conjoint analysis of 1,000 respondents in Germany and 1,002 in Switzerland.

<sup>2</sup> Figures in chart are rounded; percentages are based on unrounded data.

in paying for face-to-face support at physical locations (Exhibit 3). Our analysis indicates that consumers don't want their insurers to spend money offering it.

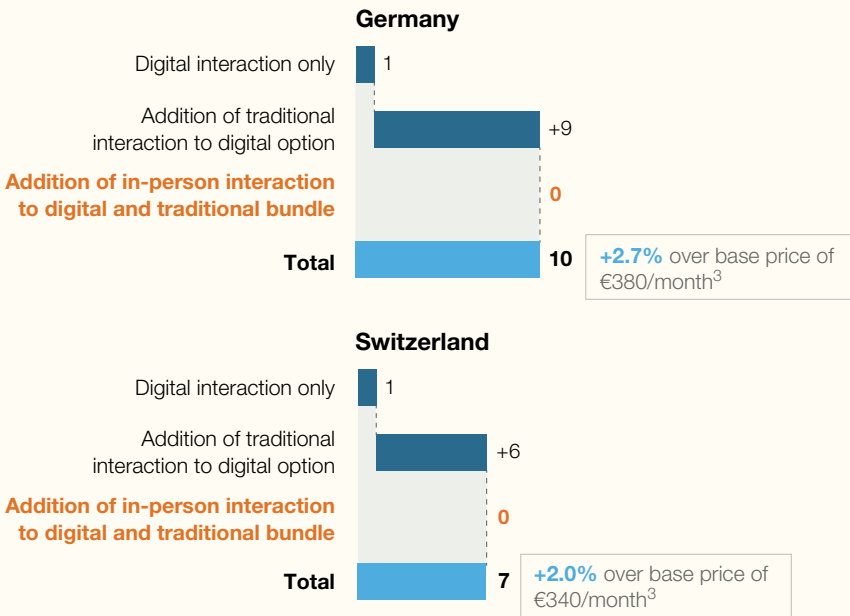
**Preference gains.** We modeled a market with four reference policies and looked at how preferences would change if consumers were presented with a broader choice of interactions within a given brand and with a fixed set of prices and coverage. When we added a professional interaction partner and a choice of both digital and traditional interactions to a basic, low-cost product with limited coverage, a

budget brand, and hitherto anonymous and traditional interactions only, the preference for such a product rose by 40 percent. When we added the choice of a personal interaction partner offline to a purely digital offering, the result was a preference gain of approximately 60 percent. A deeper analysis of the data found that customers of lower-cost products were more sensitive to price changes: charging for extra interactions increased the likelihood that they would switch to another offering. By contrast, customers of premium products were largely immune to price increases,

Exhibit 3

**Adding in-person interaction to digital and traditional options did not inspire an additional willingness to pay.**

**Median additional willingness to pay,<sup>1</sup> €**  
*(base price assumes interaction is traditional<sup>2</sup> only)*



<sup>1</sup> Choice-based conjoint analysis of 1,000 respondents in Germany and 1,002 in Switzerland.  
<sup>2</sup> Traditional interactions include phone or mail, while digital ones include online portal, mobile-phone app, or video.  
<sup>3</sup> Figures in chart are rounded; percentages are based on unrounded data.

indicating that additional profit opportunities may be available.

### Fine-tuning


Only a few insurers have attempted (in a limited way) to fine-tune interaction strategies, and it's too early to tell how successful they have been. But our own research—a modeling exercise, admittedly, but a rigorous one—can point the way for others. Here are some practical considerations for companies contemplating new investments in interactions.

*Reduce investments for in-person interactions.* Many companies still rely on live interactions at company-owned spaces to engage with customers. This is the most costly channel, but as noted earlier, our research on the German and Swiss markets suggests that customers, on average, don't value it. Redirecting spending to cutting-edge digital interactions or upgrading service centers, depending on your customer mix, might be a better bet.

*Revisit segments.* Most companies go to great lengths to differentiate their products and customer segments. Interactions provide another way to stretch the range of product and service offerings, distinguish them from those of competitors, and offer more chances to target and acquire your rivals' underserved customers. A digital-only product, for example, is likely to suit the digitally savvy.

*Standardize, but with care.* More granular, preference-based product configurations provide consumers with options tailored

to their needs. Modular products and menu-driven strategies have a big upside: increased revenues and customer loyalty, as well as lower costs. That said, companies need to set the dial carefully: too few options and you miss opportunities; too many and you confuse customers, spur adverse selection (such as attracting a preponderance of customers who want costly face-to-face interactions), and create unnecessary complexity that requires management time.

*Be willing to experiment.* In the digital era, it's true that customers expect a lot of services to be free. However, firms should be able to charge significant premiums by offering a large choice of interactions. Companies should be confident enough to charge for them explicitly, even in today's competitive environment. 

---

<sup>1</sup> Conjoint analysis is an effective tool for eliciting customers' willingness to pay, since it is based on decision choices among complete products rather than questions about the willingness to pay for additional features—the basis of most other methodologies. In multiple rounds, smart algorithms assess the participants' preference structures and use that information to estimate the relevance of product attributes and the willingness to pay for them. Our analysis used individual (risk-adjusted) price points for each participant and thus closely simulated actual buying situations. That helped us make precise estimates of the relative importance of interaction choices and what customers would be willing to pay for them.

**Niklas Barwitz** is a consultant in McKinsey's Zurich office, where **Sirus Ramezani** is a senior partner; **Boris Körs** is a partner in the Munich office.

# FIGHTING PORTFOLIO COMPLEXITY

Many consumer-packaged-goods companies are placing too many bets. Greater simplicity and agility increase the odds of higher performance.

*by Rogerio Hirose, Davinder Sodhi, and Alexander Thiel*

Allocating resources wisely is one of the most difficult tasks for executives. As the competition attacks their core markets ever more aggressively and growth becomes elusive, companies often respond by placing bets on a wide range of potential opportunities. This scatter-shot approach may be misguided.

Analysis of data from 53 consumer-packaged-goods (CPG) companies over the period between 2010 and 2014 showed that players typically manage hundreds or even thousands of business “cells”—specific combinations of products and geographies, such as facial moisturizers in South Korea or breakfast cereals in Germany. When we divided companies into quartiles based on revenue growth, the drawbacks of such complexity became apparent (exhibit). For while top players obtained about 75 percent of their revenue growth from only 13 percent of their business cells, companies in the bottom quartile required 33 percent of their cells to generate the same performance. Companies, it seems, can win big by concentrating their efforts on a small number of promising opportunities rather than dispersing their time and resources among many.

We also found that the highest-growth CPG companies reallocate their resources with greater agility than the rest, rapidly moving investments by both product category and geography as new opportunities emerge. These high performers achieved average annual revenue growth of 6 percent between 2007 and 2014, compared with 5 percent growth for companies that made only geographic shifts, and 4 percent growth for those that roughly maintained their traditional portfolio positions. To become more agile, companies should adapt their operational and organizational models. One way to do this is to decentralize decision making, giving individual country leaders the authority to reallocate resources or set growth targets. 

**Rogerio Hirose** is a partner in McKinsey's São Paulo office, **Davinder Sodhi** is a research specialist in the Gurgaon Knowledge Center, and **Alexander Thiel** is a partner in the Zurich office.



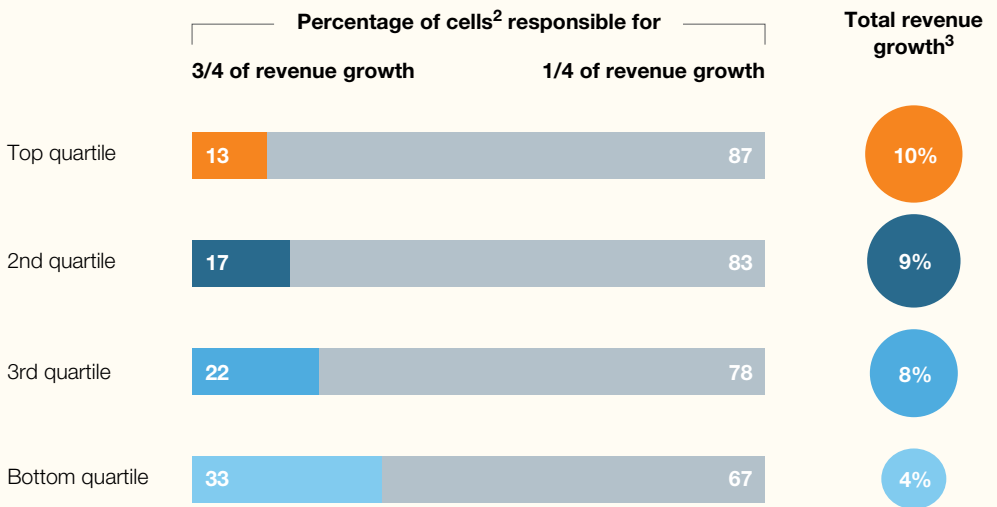
For the full article, see “How do winning consumer-goods companies capture growth?” on [McKinsey.com](https://www.mckinsey.com).



Exhibit

### Top-performing companies derive most of their revenue growth from a smaller percentage of cells.

2010–14 revenue growth patterns<sup>1</sup>



<sup>1</sup> Sample of 53 consumer-packaged-goods companies.

<sup>2</sup> Cells are specific combinations of products and geographies (eg, facial moisturizers in South Korea); number of cells in the companies studied range from hundreds to thousands.

<sup>3</sup> Excluding currency effects; figures are rounded.

Source: Euromonitor; McKinsey analysis

Copyright © 2017 McKinsey & Company. All rights reserved.

# A NEW MAP FOR STRATEGIC GROWTH IN BANKING

Portfolio strategists need to look beyond economic development when eyeing new investment.

*by Miklos Dietz, Attila Kincses, and Zoltán Pataki*

When bank strategists seek new growth or reevaluate their portfolios, the odds of success often look stronger in places where banking penetration is low and opportunities relatively abundant. But not always.

To get a better understanding, we looked at the ratio of banking revenues as a share of GDP across global markets, deducting banks' costs of risk.<sup>1</sup> As the exhibit shows, the old pattern of banking activity that is more entrenched in developed than developing markets no longer holds: penetration in China last year reached the same levels as in the United States; Brazil's ratio is higher than the United Kingdom; and some Eastern European nations are more "banked" than Western Europe. Economic development should be just the starting point for a growth discussion, as multiple factors—including capital-market depth, the growth outlook, asset mixes, margin trends, regulation, and risk—should all be taken into account. Margins in some developed markets, for example, are elevated as a result of market consolidation. That may be a signal that banks in these markets are more vulnerable to margin erosion, among other challenges to the continued success of established business models. Digital attackers—

fintechs and even incumbents with new, lower-cost models—will find these markets increasingly attractive. Emerging markets with high margins such as those in Latin America and China may be susceptible to abrupt turns in the credit cycle. In China, corporate lending is vulnerable to an economic slowdown.

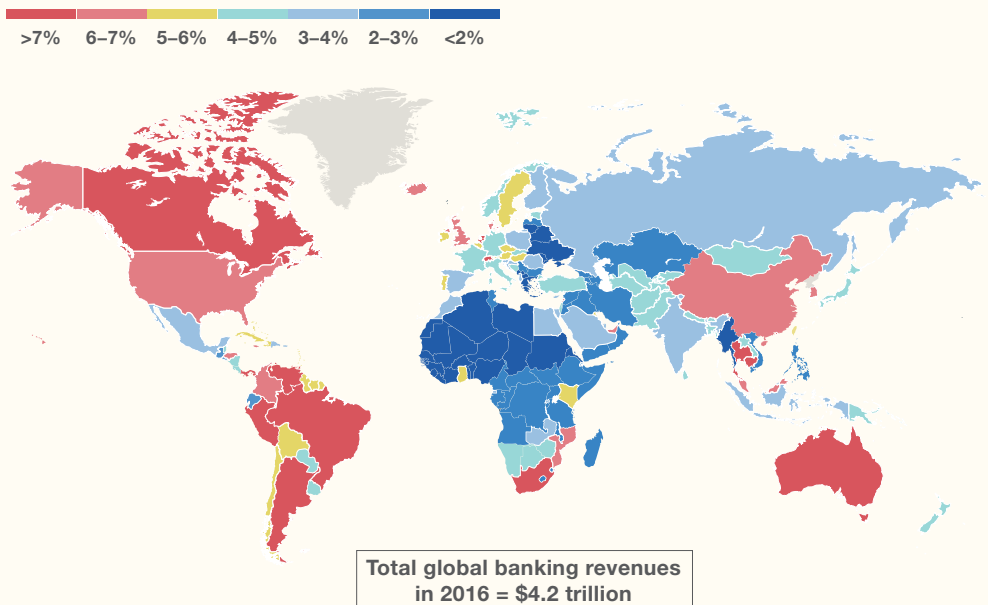
Elsewhere in developing markets, Northern and sub-Saharan Africa are conspicuous for their low volumes in retail and small-business lending. That suggests potential for growth, but volatile commodity prices and structural challenges, such as income inequality and political instability, complicate short-term investment bets. In India, where only half the population has access to banking services, a new currency and government reforms are spurring growth in the number of bank accounts.

It is noteworthy that Western Europe's penetration rates are substantially lower than those in the United States (and many have recently slipped behind those of Eastern Europe). That reflects the high risk costs of corporate debt, in contrast to the United States, where banks benefit from a strong base in retail and in wealth and asset management, which are performing well. Assuming low


Exhibit

## High banking penetration is no longer limited to developed markets.

**Global banking penetration:** Ratio of revenues (after risk costs) to country's GDP, 2016



Source: Panorama by McKinsey

interest rates persist as Western Europe's economies struggle, banks will remain under pressure to improve efficiency, by cutting operating costs and cleaning up and selling off bad loans to bolster their capital base. 

**Miklos Dietz** is a senior partner in McKinsey's Vancouver office; **Attila Kincses** is a vice president of Panorama, a McKinsey Solution, and is based in the Budapest office, where **Zoltán Pataki** is a consultant.

Copyright © 2017 McKinsey & Company. All rights reserved.

<sup>1</sup> We deducted write-downs and loss reserves to arrive at the ratio of revenues after risk costs to GDP.

# APPLYING STRESS TESTS BEYOND BANKING

The technique can provide important insights to many companies operating under uncertainty.

by Sven Heiligtag, Susanne Maurenbrecher, and Niklas Niemann

In response to the financial crisis, US authorities tested how banks would perform under a variety of stresses, including a slumping economy, high unemployment, stock and bond market shocks, and foreign-currency gyrations. However, banks aren't the only institutions that find themselves vulnerable when the external environment tosses a curveball. In recent years, power companies, oil and gas firms, healthcare operators, media firms, and others all have been subject to adverse scenarios that far exceeded their planners' imagination. Using stress tests, managers can identify and mitigate potential shocks by turning over every rock to give extreme "what-ifs" a closer look.

Consider what happened with Germany's *Energiewende*, the national transition to sustainable energy. To predict the effects of the policy on electricity prices, most energy companies relied on the classic scenarios—a base case, with best and worst cases that skewed slightly to either side. However, out of the blue, the Fukushima nuclear disaster vastly accelerated Germany's switch to renewables. The price of power tanked by

more than 50 percent—far worse than the gloomiest projections (Exhibit 1). The effect was devastating: power producers had to write off tens of billions of euros.

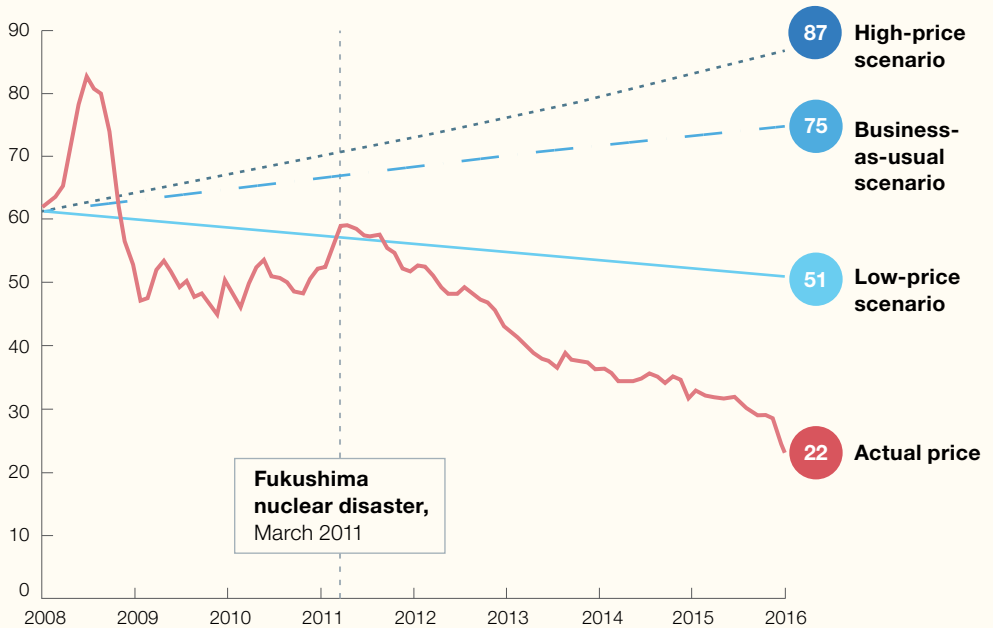
If planners had deployed the stress-testing techniques of banks, they might have avoided or mitigated the fallout. To illustrate, we modeled the potential impact of five extreme scenarios on a hypothetical energy utility (including free energy offered by digital players in return for customer information and power produced from decentralized sources such as rooftop solar systems). Specifically, we examined their effects on the profits and losses, balance sheets, and cash flows for each of several business segments: generation, renewables, trading, distribution, and retail. After modeling the effects of a scenario separately for each business, we combined them to show the effect on the enterprise (Exhibit 2).

The financial implications would be considerable across the scenarios, though none would necessarily bankrupt the company. Significant profit and liquidity risks appear, especially in the

Exhibit 1

**Conventional scenario analysis failed to predict the effects of Germany's sustainable-energy policy on power prices.**

**German wholesale-power prices, € per megawatt hour**



Source: BBC; European Energy Exchange; Umweltbundesamt; McKinsey analysis

generation and retail businesses. In the absence of successful countermeasures, all five scenarios lead to negative recurring earnings before interest and

taxes, revealing major risks for the sustainability of the current business portfolio. Furthermore, the scenarios suggest a 10 to 60 percent drop in equity

Exhibit 2

**Using stress tests, companies model the effects of extreme scenarios on their finances.**




Effects of extreme scenarios on a hypothetical utility	Revenue	EBITDA <sup>2</sup>	Capital expenditures	Net debt
Energy for free				
Decentralized energy landscape				
Emissions fraud				
Cyberattack on critical infrastructure				
Radical price transparency				


<sup>1</sup> Calculated based on current revenue with all other financial indicators indexed to revenue.

<sup>2</sup> Earnings before interest, taxes, depreciation, and amortization.

and a 5 to 40 percent increase in net debt, which might trigger liquidity concerns.

We don't doubt that stress testing can be improved. But the new techniques can already deliver powerful results for companies that take them up. 

**Sven Heiligtag** is a senior partner in McKinsey's Hamburg office, where **Susanne Maurenbrecher** is a consultant; **Niklas Niemann** is a consultant in the Cologne office.

 For more on this topic, see "From scenario planning to stress testing: The next step for energy companies," on [McKinsey.com](https://www.mckinsey.com).

Copyright © 2017 McKinsey & Company. All rights reserved.

# CHINA'S ELECTRIC-VEHICLE MARKET PLUGS IN

China has emerged as a leader in both the supply of—and demand for—electric vehicles.

*by Patrick Hertzke, Nicolai Müller, and Stephanie Schenk*

Approximately 375,000 electric vehicles (EVs) were manufactured by Chinese OEMs in 2016—an impressive 43 percent of EV production worldwide. That's no fluke; Chinese OEMs achieved a 40 percent global share in 2015. OEMs from around the world (Chinese manufacturers among them) also produced approximately 332,000 EVs within China in 2016, and the country now has the largest number of EVs on the road—overtaking, for the first time, the number of EVs in the United States.

The performance of Chinese EV manufacturers and suppliers, and the favorable conditions for EVs within the country itself, are reflected in China's strong position on the McKinsey Electric Vehicle Index, or EVI (exhibit). Since 2010, our EVI has analyzed the overall state of play for EV producers and national markets across two equally weighted dimensions: supply and demand. Supply indicators address the industry side, that is, OEMs and suppliers within each country; we consider factors such as current and projected EV production and the manufacture of key components, including e-motors and batteries.<sup>1</sup> Demand indicators assess EV share of a given country's market and go beyond just accounting for the number

of vehicles sold. Among other things, we measure elements such as incentives (including governmental subsidies), existing infrastructure, and the number of EV models offered in various vehicle segments within each indexed country. For 2016, we examined 15 countries, including major ones in Asia, Europe, and North America.

The Chinese outperformed on both the supply and demand EVI dimensions. On the supply side, China's government has made it a priority to create favorable conditions for EV stakeholders, including investors. The country's components suppliers offered a boost, as well; for example, China's lithium-ion battery-cell players now account for about 25 percent of global supply. As for demand, China's high marks are evidenced not only by the number of vehicles sold but also by the variety of choices available. Approximately 25 new EV models were introduced to the Chinese market in 2016. All told, a Chinese consumer can now choose from around 75 EV models—more than in any other country we've measured.

Whether these EV dynamics will hold in China for the longer term is harder to predict. Currently, in several of the country's major cities (including Beijing

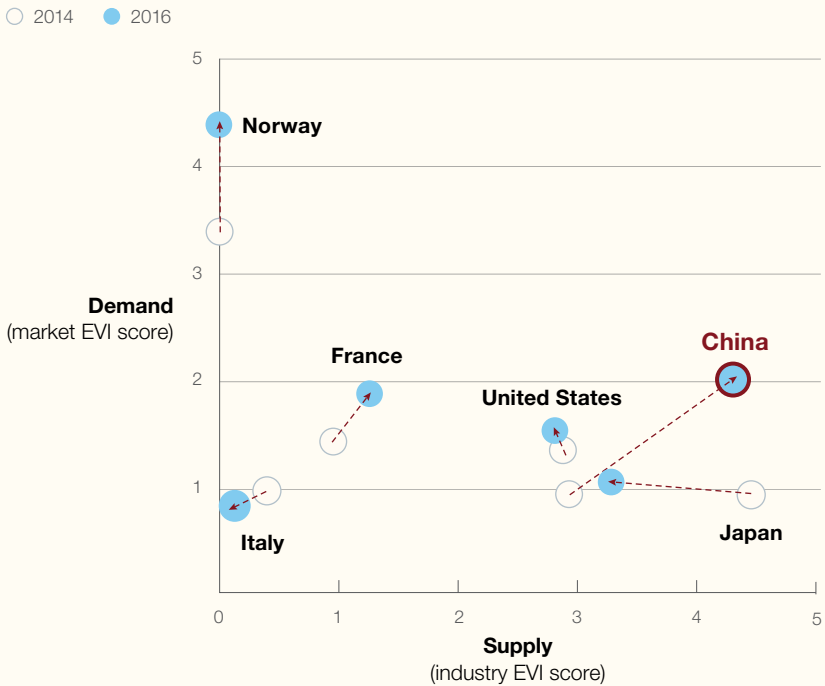
and Shanghai), EVs are exempt from license-plate lotteries and significant registration fees that apply for cars with internal-combustion engines. These exemptions are critical levers to make purchasing an EV more attractive, especially for younger, first-time car buyers. In all, China provides monetary subsidies that, for a representative, midsize car, amount to approximately 23 percent of total EV price. For comparable vehicles, that's lower than

the subsidies available in Scandinavian countries such as Denmark (49 percent) and Norway (45 percent), but higher than the subsidies provided by countries such as the United States (18 percent), Germany (13 percent), and Japan (10 percent). In the future, China has announced that, after 2020, it will gradually begin to shift from direct subsidies to nonmonetary incentives. It's worth noting, too, that even as China now outperforms in the absolute number of

Exhibit


**The state of play for electric vehicles varies by country, but China has outperformed on both supply and demand dimensions.**

**Electric Vehicle Index (EVI)<sup>1</sup> score overall, for selected countries**




<sup>1</sup> Evaluates performance of 15 countries in advancing electric mobility, based on key market and industry indicators.



EVs sold, the country does less well when its EV sales are considered in relative terms. Case in point: Chinese EV penetration in its light-vehicle market was 1.4 percent in 2016; in Norway, it was about 24 percent. Still, indications are strong that China will be in on EVs for the long term. In 2016, the country expanded its EV-charging infrastructure to a total of 107,000 public charging outlets—an increase of 118 percent over 2015. And additional McKinsey research shows that a majority of Chinese EV owners are eager to buy EVs again, and that the number of Chinese consumers who say they are interested in purchasing an EV has tripled since 2011. 

**Patrick Hertzke** is an associate partner in McKinsey's Detroit office, **Nicolai Müller** is a senior partner in the Cologne office, and **Stephanie Schenk** is an analyst in the Munich office.

The authors wish to thank Russell Hensley, Daniel Holland-Letz, Stefan Knupfer, Nicholas Laverty, Timo Möller, Patrick Schaufuss, Katherine Wolosz, Ting Wu, and Susan Zhang for their contributions to this article.

 For a global perspective on China's performance in electric-vehicle production, as well as further details about our EVI methodology, see "Dynamics in the global electric-vehicle market," on [McKinsey.com](#).

Copyright © 2017 McKinsey & Company. All rights reserved.

---

<sup>1</sup> Note that with respect to the industry (or supply) side, the Electric Vehicle Index (EVI) categorizes producers and suppliers based upon their country of origin, not the country in which they are producing or supplying. Thus, for example, the numerous Japanese and South Korean companies that have invested strongly in China and established facilities in that country are still considered to be "Japanese" and "South Korean," respectively.

# HOW TECHNOLOGY IS RESHAPING THE WORKPLACE AND THE ECONOMY

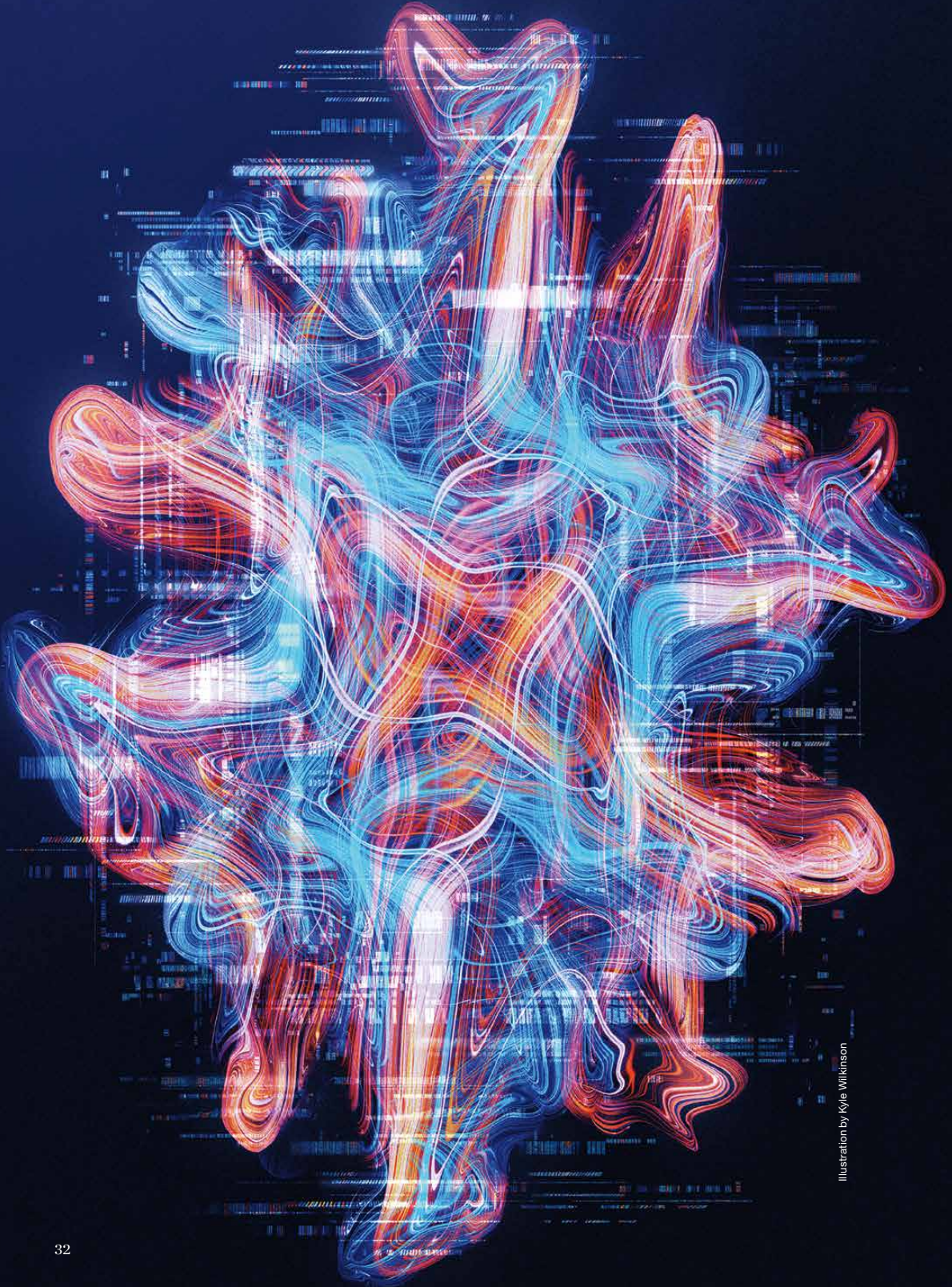


Illustration by Kyle Wilkinson

## Also in this package

- 44 **Rethinking the workplace:**  
Flexibility, fairness, and  
enlightened automation

# Where is technology taking the economy?

We are creating an intelligence that is external to humans and housed in the virtual economy. This is bringing us into a new economic era—a distributive one—where different rules apply.

*by W. Brian Arthur*

**A year ago in Oslo Airport** I checked in to an SAS flight. One airline kiosk issued a boarding pass, another punched out a luggage tag, then a computer screen showed me how to attach it and another where I should set the luggage on a conveyor. I encountered no single human being. The incident wasn't important but it left me feeling oddly that I was out of human care, that something in our world had shifted.

That shift of course has been going on for a long time. It's been driven by a succession of technologies—the Internet, the cloud, big data, robotics, machine learning, and now artificial intelligence—together powerful enough that economists agree we are in the midst of a digital economic revolution. But there is less agreement on how exactly the new technologies are changing the economy and whether the changes are deep. Robert Gordon of Northwestern University tells us the computer revolution “reached its climax in the dot-com era of the 1990s.” Future progress in technology, he says, will be slower.

So in what way exactly are the new technologies changing the economy? Is the revolution they are causing indeed slowing—or is it persistent and deep? And if so how will it change the character of the economy?

I argued a few years back that the digital technologies have created a second economy, a virtual and autonomous one, and this is certainly true.<sup>1</sup> But I now believe the main feature of this autonomous economy is not merely that it deepens the physical one. It's that it is steadily providing an external intelligence in business—one not housed internally in human workers but externally in the virtual economy's algorithms and machines. Business and engineering and financial processes can now draw on huge "libraries" of intelligent functions and these greatly boost their activities—and bit by bit render human activities obsolete.

I will argue this is causing the economy to enter a new and different era. The economy has arrived at a point where it produces enough in principle for everyone, but where the means of access to these services and products, jobs, is steadily tightening. So this new period we are entering is not so much about production anymore—how much is produced; it is about distribution—how people get a share in what is produced. Everything from trade policies to government projects to commercial regulations will in the future be evaluated by distribution. Politics will change, free-market beliefs will change, social structures will change.

We are still at the start of this shift, but it will be deep and will unfold indefinitely in the future.

### **THE THIRD MORPHING**

How did we get to where we are now? About every 20 years or so the digital revolution morphs and brings us something qualitatively different. Each morphing issues from a set of particular new technologies, and each causes characteristic changes in the economy.

The first morphing, in the 1970s and '80s, brought us integrated circuits—tiny processors and memory on microchips that miniaturized and greatly speeded calculation. Engineers could use computer-aided design programs, managers could track inventories in real time, and geologists could discern strata and calculate the chance of oil. The economy for the first time had serious computational assistance. Modern fast personal computation had arrived.

The second morphing, in the 1990s and 2000s, brought us the connection of digital processes. Computers got linked together into local and global networks via telephonic or fiber-optic or satellite transmission. The Internet became a commercial entity, web services emerged, and the cloud provided

---

<sup>1</sup> See W. Brian Arthur, "The second economy," *McKinsey Quarterly*, October 2011, [McKinsey.com](http://McKinsey.com).

shared computing resources. Everything suddenly was in conversation with everything else.

It's here that the virtual economy of interconnected machines, software, and processes emerges, where physical actions now could be executed digitally. And it's also here that the age-old importance of geographical locality fades. An architecture firm in Seattle could concern itself with the overall design of a new high-rise and have less expensive workers in Budapest take care of the detailing, in an interactive way. Retailers in the United States could monitor manufacturers in China and track suppliers in real time. Offshoring took off, production concentrated where it was cheapest—Mexico, Ireland, China—and previously thriving home local economies began to wither. Modern globalization had arrived and it was very much the result of connecting computers.

The third morphing—the one we are in now—began roughly in the 2010s, and it has brought us something that at first looks insignificant: cheap and ubiquitous sensors. We have radar and lidar sensors, gyroscopic sensors, magnetic sensors, blood-chemistry sensors, pressure, temperature, flow, and moisture sensors, by the dozens and hundreds all meshed together into wireless networks to inform us of the presence of objects or chemicals, or of a system's current status or position, or changes in its external conditions.

These sensors brought us data—oceans of data—and all that data invited us to make sense of it. If we could collect images of humans, we could use these to recognize their faces. If we could “see” objects such as roads and pedestrians, we could use this to automatically drive cars.

As a result, in the last ten years or more, what became prominent was the development of methods, intelligent algorithms, for recognizing things and doing something with the result. And so we got computer vision, the ability for machines to recognize objects; and we got natural-language processing, the ability to talk to a computer as we would to another human being. We got digital language translation, face recognition, voice recognition, inductive inference, and digital assistants.

What came as a surprise was that these intelligent algorithms were not designed from symbolic logic, with rules and grammar and getting all the exceptions correct. Instead they were put together by using masses of data to form associations: This complicated pixel pattern means “cat,” that one means “face”—Jennifer Aniston's face. This set of *Jeopardy!* quiz words points to “Julius Caesar,” that one points to “Andrew Jackson.” This

silent sequence of moving lips means these particular spoken words. Intelligent algorithms are not genius deductions, they are associations made possible by clever statistical methods using masses of data.

Of course the clever statistical techniques took huge amounts of engineering and several years to get right. They were domain specific, an algorithm that could lip read could not recognize faces. And they worked in business too: this customer profile means “issue a \$1.2 million mortgage”; that one means “don’t act.”

Computers, and this was the second surprise, could suddenly do what we thought only humans could do—association.

### **THE COMING OF EXTERNAL INTELLIGENCE**

It would be easy to see associative intelligence as just another improvement in digital technology, and some economists do. But I believe it’s more than that. “Intelligence” in this context doesn’t mean conscious thought or deductive reasoning or “understanding.” It means the ability to make appropriate associations, or in an action domain to sense a situation and act appropriately. This fits with biological basics, where intelligence is about recognizing and sensing and using this to act appropriately. A jellyfish uses a network of chemical sensors to detect edible material drifting near it, and these trigger a network of motor neurons to cause the jellyfish to close automatically around the material for digestion.

Thus when intelligent algorithms help a fighter jet avoid a midair collision, they are sensing the situation, computing possible responses, selecting one, and taking appropriate avoidance action.

**Industries aren’t just becoming automated with machines replacing humans. They are using the new intelligent building blocks to re-architect the way they do things.**

There doesn't need to be a controller at the center of such intelligence; appropriate action can emerge as the property of the whole system. Driverless traffic when it arrives will have autonomous cars traveling on special lanes, in conversation with each other, with special road markers, and with signaling lights. These in turn will be in conversation with approaching traffic and with the needs of other parts of the traffic system. Intelligence here—appropriate collective action—emerges from the ongoing conversation of all these items. This sort of intelligence is self-organizing, conversational, ever-adjusting, and dynamic. It is also largely autonomous. These conversations and their outcomes will take place with little or no human awareness or intervention.

The interesting thing here isn't the form intelligence takes. It's that intelligence is no longer housed internally in the brains of human workers but has moved outward into the virtual economy, into the conversation among intelligent algorithms. It has become external. The physical economy demands or queries; the virtual economy checks and converses and computes externally and then reports back to the physical economy—which then responds appropriately. The virtual economy is not just an Internet of Things, it is a source of intelligent action—intelligence external to human workers.

This shift from internal to external intelligence is important. When the printing revolution arrived in the 15th and 16th centuries it took information housed internally in manuscripts in monasteries and made it available publicly. Information suddenly became external: it ceased to be the property of the church and now could be accessed, pondered, shared, and built upon by lay readers, singly or in unison. The result was an explosion of knowledge, of past texts, theological ideas, and astronomical theories. Scholars agree these greatly accelerated the Renaissance, the Reformation, and the coming of science. Printing, argues commentator Douglas Robertson, created our modern world.

Now we have a second shift from internal to external, that of intelligence, and because intelligence is not just information but something more powerful—the *use* of information—there's no reason to think this shift will be less powerful than the first one. We don't yet know its consequences, but there is no upper limit to intelligence and thus to the new structures it will bring in the future.

## HOW THIS CHANGES BUSINESS

To come back to our current time, how is this externalization of human thinking and judgment changing business? And what new opportunities is it bringing?

Some companies can apply the new intelligence capabilities like face recognition or voice verification to automate current products, services, and value chains. And there is plenty of that.

More radical change comes when companies stitch together pieces of external intelligence and create new business models with them. Recently I visited a fintech (financial technology) company in China, which had developed a phone app for borrowing money on the fly while shopping. The app senses your voice and passes it to online algorithms for identity recognition; other algorithms fan out and query your bank accounts, credit history, and social-media profile; further intelligent algorithms weigh all these and a suitable credit offer appears on your phone. All within seconds. This isn't quite the adoption of external intelligence; it is the combining of sense-making algorithms, data-lookup algorithms, and natural-language algorithms to fulfill a task once done by humans.

In doing this, businesses can reach into and use a "library" or toolbox of already-created virtual structures as Lego pieces to build new organizational models. One such structure is the blockchain, a digital system for executing and recording financial transactions; another is Bitcoin, a shared digital international currency for trading. These are not software or automated functions or smart machinery. Think of them as externally available building blocks constructed from the basic elements of intelligent algorithms and data.

The result, whether in retail banking, transport, healthcare, or the military, is that industries aren't just becoming automated with machines replacing humans. They are using the new intelligent building blocks to re-architect the way they do things. In doing so, they will cease to exist in their current form.

Businesses can use the new opportunities in other ways. Some large tech companies can directly create externally intelligent systems such as autonomous air-traffic control or advanced medical diagnostics. Others can build proprietary databases and extract intelligent behavior from them. But the advantages of being large or early in the market are limited. The components of external intelligence can't easily be owned, they tend to slide into the



public domain. And data can't easily be owned either, it can be garnered from nonproprietary sources.

So we will see both large tech companies and shared, free, autonomous resources in the future. And if past technology revolutions are indicative, we will see entirely new industries spring up we hadn't even thought of.

### **REACHING THE 'KEYNES POINT'**

Of course there's a much-discussed downside to all this. The autonomous economy is steadily digesting the physical economy and the jobs it provides. It's now a commonplace that we no longer have travel agents or typists or paralegals in anything like the numbers before; even high-end skilled jobs such as radiologists are being replaced by algorithms that can often do the job better.

Economists don't disagree about jobs vanishing, they argue over whether these will be replaced by new jobs. Economic history tells us they will. The automobile may have wiped out blacksmiths, but it created new jobs in car manufacturing and highway construction. Freed labor resources, history tells us, always find a replacement outlet and the digital economy will not be different.

I am not convinced.

Erik Brynjolfsson and Andrew McAfee of the Massachusetts Institute of Technology point out that when automotive transport arrived, a whole group of workers—horses—were displaced, never to be employed again. They lost their jobs and vanished from the economy.

I would add another historical precedent. Offshoring in the last few decades has eaten up physical jobs and whole industries, jobs that were not replaced. The current transfer of jobs from the physical to the virtual economy is a different sort of offshoring, not to a foreign country but to a virtual one. If we follow recent history we can't assume these jobs will be replaced either.

In actual fact, many displaced people become unemployed; others are forced into low-paying or part-time jobs, or into work in the gig economy. Technological unemployment has many forms.

The term "technological unemployment" is from John Maynard Keynes's 1930 lecture, "Economic possibilities for our grandchildren," where he

predicted that in the future, around 2030, the production problem would be solved and there would be enough for everyone, but machines (robots, he thought) would cause “technological unemployment.” There would be plenty to go around, but the means of getting a share in it, jobs, might be scarce.

We are not quite at 2030, but I believe we have reached the “Keynes point,” where indeed enough is produced by the economy, both physical and virtual, for all of us. (If total US household income of \$8.495 trillion were shared by America’s 116 million households, each would earn \$73,000, enough for a decent middle-class life.) And we have reached a point where technological unemployment is becoming a reality.

The problem in this new phase we’ve entered is not quite jobs, it is access to what’s produced. Jobs have been the main means of access for only 200 or 300 years. Before that, farm labor, small craft workshops, voluntary piecework, or inherited wealth provided access. Now access needs to change again.

However this happens, we have entered a different phase for the economy, a new era where production matters less and what matters more is *access* to that production: distribution, in other words—who gets what and how they get it.

We have entered the distributive era.

## THE REALITIES OF THE DISTRIBUTIVE ERA

A new era brings new rules and realities, so what will be the economic and social realities of this new era where distribution is paramount?

1. **The criteria for assessing policies will change.** The old production-based economy prized anything that helped economic growth. In the distributive economy, where jobs or access to goods are the overwhelming criteria, economic growth looks desirable as long as it creates jobs. Already, unpopular activities such as fracking are justified on this criterion.

The criteria for measuring the economy will also change. GDP and productivity apply best to the physical economy and do not count virtual advances properly (see sidebar, “Productivity and GDP growth: No longer good measures?”).

2. **Free-market philosophy will be more difficult to support in the new atmosphere.** It is based on the popular notion that unregulated market behavior leads to economic growth. I’ve some sympathy with this.

## PRODUCTIVITY AND GDP GROWTH: NO LONGER GOOD MEASURES?

Here is a puzzle. Why are the new digital possibilities not creating high productivity figures and high GDP growth?

Consider two facts: GDP is the total of goods and services times their price. And very many virtual services, like email, generate unmeasured benefits for the user, cost next to nothing, and are unpriced. So when we replace priced physical services with free virtual ones, GDP falls. Productivity (GDP per worker) falls too. Of course this GDP shrinkage could be allayed in several ways: email services might boost other businesses' output. And postal workers laid off by email might get jobs that produce more than their old ones. So there are offsets. But overall, virtual services bias GDP downward.

A thought experiment makes this point more vividly. Imagine an economy where everything is provided autonomously—your food, your morning coffee, your news, entertainment, all needed services. Everything. And let's say these autonomous processes cost nothing. Such an economy provides goods and services; everything we need is given. But it has no priced output, no jobs, and no wages. Its GDP would be zero, and therefore productivity would also be zero. Yet we would be fully provided for. This is imaginary of course, but it is what we are heading toward. Certainly there's no reason as we head toward greater autonomy that either GDP or productivity should grow as they traditionally have. This doesn't mean the economy is failing to deliver what we need; it means that measuring its success as priced goods and priced services is becoming increasingly problematic—and, in fact, inappropriate.

Actual economic theory has two propositions. If a market—the airline market, say—is made free and operates according to a host of small-print economic conditions, it will operate so that no resources are wasted. That's efficiency. Second, there will be winners and losers, so if we want to make *everyone* better off, the winners (big-hub airlines, in this case) need to compensate the losers: small airlines and people who live in remote places. That's distribution, and overall everyone is better off.

In practice, whether with international trade agreements or deregulation or freeing up markets, the efficiency part holds at best sort of; often unregulated behavior leads to concentration as companies that get ahead lock in their advantage. And in practice, in the United States and Britain, those who lose have rarely been compensated. In earlier times they could find different jobs, but now that has become problematic. In the distributive era free-market efficiency will no longer be justifiable if it creates whole classes of people who lose.

**3. The new era will not be an economic one but a political one.** We've seen the harsh beginnings of this in the United States and Europe. Workers who have steadily lost access to the economy as digital processes replace them have a sense of things falling apart, and a quiet anger about immigration, inequality, and arrogant elites.

I'd like to think the political upheaval is temporary, but there's a fundamental reason it's not. Production, the pursuit of more goods, is an economic and

engineering problem; distribution, ensuring that people have access to what's produced, is a political problem. So until we've resolved access we're in for a lengthy period of experimentation, with revamped political ideas and populist parties promising better access to the economy.


This doesn't mean that old-fashioned socialism will swing into fashion. When things settle I'd expect new political parties that offer some version of a Scandinavian solution: capitalist-guided production and government-guided attention to who gets what. Europe will find this path easier because a loose socialism is part of its tradition. The United States will find it more difficult; it has never prized distribution over efficiency.

---

Whether we manage a reasonable path forward in this new distributive era depends on how access to the economy's output will be provided. One advantage is that virtual services are essentially free. Email costs next to nothing. What we will need is access to the remaining physical goods and personal services that aren't digitized.

For this we will still have jobs, especially those like kindergarten teaching or social work that require human empathy. But jobs will be fewer, and work weeks shorter, and many jobs will be shared. We will almost certainly have a basic income. And we will see a great increase in paid voluntary activities like looking after the elderly or mentoring young people.

We will also need to settle a number of social questions: How will we find meaning in a society where jobs, a huge source of meaning, are scarce? How will we deal with privacy in a society where authorities and corporations can mine into our lives and finances, recognize our faces wherever we go, or track our political beliefs? And do we really want external intelligence "helping" us at every turn: learning how we think, adjusting to our actions, chauffeuring our cars, correcting us, and maybe even "nurturing" us? This ought to be fine, but it's like having an army of autonomous Jeeveses who altogether know too much about us, who can anticipate our needs in advance and fulfill them, and whom we become dependent upon.

All these challenges will require adjustments. But we can take consolation that we have been in such a place before. By the 1850s in Britain, the Industrial Revolution had brought massive increases in production, but these were accompanied by unspeakable social conditions, rightly called Dickensian. Children were working 12-hour shifts, people were huddled into tenements, tuberculosis was rife, and labor laws were scarce. In due time safety laws were passed, children and workers were protected, proper housing was put up, sanitation became available, and a middle class emerged. We did adjust, though it took 30 to 50 years—or arguably a century or more. The changes didn't issue directly from the governments of the time, they came from people, from the ideas of social reformers, doctors and nurses, lawyers and suffragists, and indignant politicians. Our new era won't be different in this. The needed adjustments will be large and will take decades. But we will make them, we always do. 

**W. Brian Arthur** is an external professor at the Santa Fe Institute and a visiting researcher at the System Sciences Lab at PARC (a Xerox company).

Copyright © 2017 McKinsey & Company. All rights reserved.



Illustration by Kyle Wilkinson

# Rethinking the workplace: Flexibility, fairness, and enlightened automation

People aren't powerless in the face of new technologies; the future of work is up to us.

**What sort of workplace** should we expect in the future? How will automation affect jobs? How benign is the so-called gig economy? And what will it take for governments and companies to create “better” work? James Manyika, chair of the McKinsey Global Institute (MGI), sat down recently to discuss these and other issues with Matthew Taylor, chief executive of the London-based Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA), following publication earlier this year of an independent review of employment practices in the modern economy, which Taylor led.<sup>1</sup> What follows are edited excerpts from their conversation. (For an extended video feature of the discussion between Manyika and Taylor, see the digital version of this article, on McKinsey.com.)

## **FLEXIBLE PRACTICES**

**Matthew Taylor:** Overall, the UK does very well on the *quantity* of work, and we provide a lot more flexibility than many other labor markets. One of the things we've been looking at has been the widespread rise of the independent-work, or the gig, economy; the phenomenon has been there for a very long

---

<sup>1</sup> *Good work: The Taylor review of modern working practices*, Royal Society for the encouragement of Arts, Manufactures and Commerce, July 2017, [thersa.org](https://www.thersa.org).

time but it has become particularly visible where it's digitally enabled, where people are doing car-ridesharing services or other kinds of things like that.

When self-employment growth started in the UK after the global crisis, there was a sense that people were choosing self-employment because there were no jobs available. It was involuntary. But actually, as the economy has improved, self-employment has not fallen. It is continuing to rise, though perhaps not at quite the same pace.

We are seeing more people working postretirement age, and wanting to work in a way that they can control. We are seeing more people who simply want more autonomy and flexibility in their lives, in the way that self-employment can offer it. New digital platforms facilitate that: they make it easier for people to work in exactly the way they want to work. The challenge is to make sure that we exploit that opportunity to give people the kind of work they want, in the circumstances they want it, in a way that is fair and sustainable.

**James Manyika:** I agree. Some of the research we've done about independent work and the gig economy—we've looked at five or six countries including the UK and the United States—shows that the majority who do independent work actually do it because they prefer it.

**Matthew Taylor:** About two-thirds.

**James Manyika:** They prefer the flexibility and the independence. Quite often, these are people with unique skills who find that they can deploy them across a much larger number of users, or customers.

But about a third are doing this out of necessity, and the necessity comes in a couple flavors. Either because they actually can't find traditional employment, something you find in countries like Spain. Or they're doing it because they don't earn enough from a full-time job and are trying to supplement their incomes. So you find that this other third is concerned about income stability and the variability that comes with that. Portability of benefits tends to affect even those who prefer the flexibility, but it becomes very acute for the ones who don't.

## **GOOD GIGS, BAD GIGS**

**Matthew Taylor:** There are two additional concerns that people have about gig working. The first is that we might see the emergence of very, very powerful companies that then have a kind of monopolistic position. And



secondly, what is sometimes called the Uberization of jobs. One of the things we heard in our visits to people around the UK [when writing our report] was that business models were being undercut by gig working.

So, for example, at one hearing we heard from the head of a removals firm [a company that transports people's or companies' possessions when they move to a new home or office]. He told us he was employing people and paying their pensions. This is what he'd always done. But now he is competing with a removals firm down the road that is pretending that the men who work there are self-employed. I would say that is erroneous self-employment, but they were claiming and getting away with the idea that they were self-employed.

**James Manyika:** It's important to look at the other side of that, too. With a lot of independent work in the modern gig economy, there's usually a very large group of happy users and consumers of these services. Whether it's a car-ridesharing or any of these task-oriented services, quite often that need was either too expensively served with other traditional mechanisms or not served at all.

You've seen examples where services now pop up in places where the traditional versions didn't previously exist, whether it's places where taxis never used to go, poor neighborhoods, or places where you couldn't find accommodation.

**Matthew Taylor:** I think this is exactly the point. These new technologies—sharing, gig work—offer enormous opportunities, not just in terms of improving the quality of service, but in terms of giving people flexibility and potentially disintermediating. The people who provide these services can own the platform that they use.

We could see the rise of mutuals and cooperatives and new business models based on the fact that you don't need a headquarters and all the bureaucracy that goes with it. You can just have a place and an algorithm. And you can start to enjoy the economies of scale that come with that. But we need to do this in a way that is fair to those workers, fair to the market as a whole, and also sustainable in that governments need taxes.

## **WHAT CAN COMPANIES DO?**

**James Manyika:** The question for employers is how do they think about giving their workers the kind of flexibility that they need—choices about working hours, working conditions, working style?

The other thing that companies need to think about—and this might also even include the platform companies—is how do they provide a mechanism for ratings or benefits to move around with workers? How do they help workers stabilize their incomes, because we know when people are on these platforms, one of the biggest concerns is the variability of incomes.

**Matthew Taylor:** There’s a difference between two-way flexibility, which these gig platforms often provide—as a worker you can choose exactly when you want to work—and one-way flexibility. We have a problem in the UK with one-way flexibility, in which organizations basically are trying to transfer risk onto the shoulders of the most vulnerable workers—for example, in forms like zero-hours contracts or lower-hours contracts. Here the employer says, “I can only guarantee you two hours a week, but I’ll normally want you to work 30 hours a week.” That means if there’s any downturn, they can immediately throw that risk onto the worker. It also means that workers have fewer rights around, say, unfair dismissal and may feel that if they stand up or question decisions, they won’t get any hours in the future.

The opportunities, though, are huge. There’s a major supermarket group in Britain looking at an app that enables their workers to work overtime in any store they want to. If they are working in a particular part of the store, those workers will know what other parts of the store they could work in, given the skill set they’ve got. This is opening up to lower-paid retail workers the kind of flexibility that middle-aged IT consultants enjoy.

## THE IMPORTANCE OF ‘GOOD’ WORK

**James Manyika:** Is the quality-of-work issue really about incomes, or is it about other things?

**Matthew Taylor:** It’s a great question. What do we mean by “good” work? We know that wages matter to people, particularly those who are less well off. People are less concerned with the relationship between their wage and the superrich than they are between their wage and the person who might be one step above them in hierarchy, for example. So people want to see a decent wage and they want to see fairness. But once you move beyond that, overall surveys show that people say pay is a less important part of what determines whether work is good than it used to be in the past.

People want a sense that their work is meaningful, that they are doing something useful, something that they can feel proud of. They want autonomy,

to feel that they are able to make judgments and make choices at work, that they are not simply a cog in a machine. You could call it mastery. The sense that, “I am getting better at something, and in getting better at something, I am enabling myself to have more choices in life as a consequence of the job that I’m doing.” And then there’s teamwork, camaraderie, the sense that I am part of an organization that is inclusive and fair.

We need to show a lot more imagination about how to bring those things to lower-paid, lower-skilled jobs. Many of us who are middle class and work in great organizations are used to this. But there’s no reason why jobs in caring, in retail, in security, or transportation can’t have those qualities, if we’re clever about the way in which we manage our organizations.

**James Manyika:** At MGI, we’ve looked at the income part. And we know that one of the things that’s changed dramatically in most advanced economies is that the rate of income progression has just stalled. Huge chunks of workers in these countries have seen their incomes stagnate and decline.

If you compare decades previous to 2005 and ask what proportion of households in most advanced economies saw their incomes stagnate or decline, it was in the single digits; for the United States it was less than 2 percent. Whereas if you look at the period from 2005 to 2014, for the US, that number was 81 percent.<sup>2</sup> For the UK, it was 70 percent. In previous decades, you’d have said that even though we had waves of inequality, at least most people’s situations, the vast majority of them, were progressively getting better.

**Matthew Taylor:** Maybe we now have a generation of people who have got out of the habit of thinking they’ll be better off next year than they were last year. Maybe that’s leading to kind of a postmaterialism with people saying, “Well, if I no longer aspire to be individually rich, what matters to me is that at least I can live in a society that looks after people, and where I feel that there is a hospital there when I need it, a school there when I need it.”

**James Manyika:** I’d be curious in this sense to what extent, say, the UK is different from the United States. In the United States, some sociological research suggests that how people feel about themselves and how well things are going has got less to do with what I might call postdistributional income and living standards—when you’ve taken into account the disposable income

---

<sup>2</sup> In the United States, during the period from 2005 to 2014, lower taxes and higher transfers turned a decline in market incomes for 81 percent of income segments into an increase in disposable income for nearly all households.

after tax and other government transfers and distributions—and more to do with market incomes, meaning what they’ve actually earned by doing something in the marketplace.

When we showed some of this research to sociologists, they said, “Of course, this makes sense in the context of the United States. People have never voted on the basis of the postdistributional effects, but more on the market-income effects, which means am I getting better off or not?” So raising minimum wages, raising incomes, making sure people are earning more as they work—that’s going to have a bigger effect on how people feel about themselves than simply solving the postdistributional standard of living.

**Matthew Taylor:** Many voices for some time have argued that we have got to get off the growth treadmill, but those have been voices in the wilderness. We’ve seen the illnesses of affluence, whether it’s obesity or mental health or anxiety. What I find intriguing is this sense that maybe we are at a turn in which people are starting to say to their policy makers—and you’re right, Britain may be very different from America—“Don’t promise us that we’re going to be 2 percent better off every year. That’s a hollow promise. Promise us that we will live in a society that actually works, where it feels as though it’s a good place to live. It feels as though our lives have a quality to them; we have flexibility; we can balance work and family life.” After all, we have always known that in mature democracies, once people reach a certain level of affluence, the relationship between wealth and well-being becomes very thin.

## CHANGED EXPECTATIONS?

**Matthew Taylor:** We talk about living standards, and we simply see it in terms of disposable income with some kind of inflation deflator. But actually, 20 years ago, in order to have access to the world’s libraries, in order to have access to the best films, the best shows, in order to be able to communicate with people on that side of the world, you’d have had to have been very rich. Now you just need to have a mobile-phone contract.

**James Manyika:** When we look at things like technology and globalization, by and large, they’ve given us choices and utility and a whole set of things. But as one political scientist reminded me the other day, he said, “Well, you forget one thing, which is that people don’t vote as consumers; they vote as workers.”

If people voted as consumers, we’d all be fine because we’ve delivered choice; we’ve delivered the Internet; we’ve given them all these things that have

made life infinitely better: access to education, entertainment, all the rest of it. If that was the question, we'd all be fine. The problem is, when people express their points of view as voters, by and large, they're voting mostly as workers.

## IMPACT OF TECHNOLOGY

**James Manyika:** Back in 1964, President Lyndon Johnson commissioned a report and a study, the blue-ribbon National Commission on Technology, Automation, and Economic Progress, to look at automation and technology in work. I remember one striking conclusion captured in a phrase that said that technology destroys jobs, but not work. And the reason why that's interesting is that there are still lots of things to be done.

**Matthew Taylor:** We've done a lot of work at the RSA on the impact of automation on low-paid, low-skilled jobs. And I think our argument would be that a lot of the hype—that about 30 percent or 20 percent or whatever number of jobs is going to dissipate—isn't particularly helpful. Those predictions have, generally speaking, been wrong in the past. I think you need to look at it in a much more nuanced way. It'll be less about whole jobs going; it'll be more about the nature of the tasks changing.

What I slightly worry about at the moment is that in our breathless talk about robotics and artificial intelligence [AI], we lapse into a kind of technological determinism that says that human beings must do whatever the robots and the AI make possible. And I want to say, “No, let's start from the notions of good work and good lives, and then see how can this amazing stuff enable us to take the drudgery out of work, but leave the stuff that's really interesting?”

How can it make public services much more efficient so we can improve peoples' quality of education and healthcare? We've had a lot of conversations at the RSA that start with numbers and technology and its possibilities. They nearly always end up, within an hour, with people talking about politics and talking about choices.

## IMPORTANT CHOICES

**James Manyika:** What do you think are some of the most important choices that we as a society will have to make?

**Matthew Taylor:** I think we need to make choices about what we invest in. It is a very big argument, of course, but we tend to underplay the role that

government has historically played in technological innovation. We need public-private partnerships, and I think government plays an important role in issuing and supporting challenges to entrepreneurs and innovators about the kinds of problems we should be solving: green energy or more efficient forms of care or better types of healthcare.

Whatever we do with machines, we don't want to get to a stage where human beings are the slaves.

And I think we've got to worry about market power. I know that often the people who run these firms, they're young and they're funky and they give lots of money to charity, and they seem well-meaning. But let's go back to what we know about what happens to monopolies in the end. This technology needs to be available to lots of organizations, lots of people. It doesn't need to be hoarded by a small number of extremely rich corporations.

**James Manyika:** And when you think about that question of power, do you think it's the same questions about power that we worried about, say, 100 years ago?

**Matthew Taylor:** Some of the things we worried about with monopolies in the past don't apply in the same way as they do now, but there are new things. So, 100 years ago people were worried about price gouging. Now they're worried about personal information; they're worried about intrusiveness. We've never had corporations that know so much about us as today's corporations do. So we need a conversation about corporate power in the modern world. Not one that is antagonistic to any individual company, but one that asks deep questions about what we should be concerned about.

**James Manyika:** When we think about AI and machine learning and what these technologies can do, I worry about things like bias: for example, quite often there's inherent bias in some of the data. Amplifying what may historically have been human biases into these algorithmic biases has enormous scale effect.

**Matthew Taylor:** I don't think it's healthy when democratically elected politicians feel that they can't really stand up to corporations at a national level, or even at a European level.

I would also worry about wealth. I would worry about the amount of money these corporations have salted away. And I would make a prediction that if we had another global economic downturn, the public's attitude would be, "We're having your money." I think these corporations need to think about whether, if the world was suffering again, the amount of money they're sitting on would be tolerable to people. [Q](#)

**James Manyika** is the chairman and a director of the McKinsey Global Institute and a senior partner in McKinsey's San Francisco office. **Matthew Taylor** is chief executive of the Royal Society for the encouragement of Arts, Manufactures and Commerce in London.

Copyright © 2017 McKinsey & Company. All rights reserved.



For an extended video feature of the discussion between James Manyika and Matthew Taylor, see the digital version of this article, on [McKinsey.com](https://www.mckinsey.com).



# THE BUSINESS CASE FOR LIFELONG LEARNING

56 **Putting lifelong learning on the CEO agenda**

62 **Getting ready for the future of work**

69 **Learning innovation in the digital age**

*Amy Edmondson and  
Bror Saxberg*

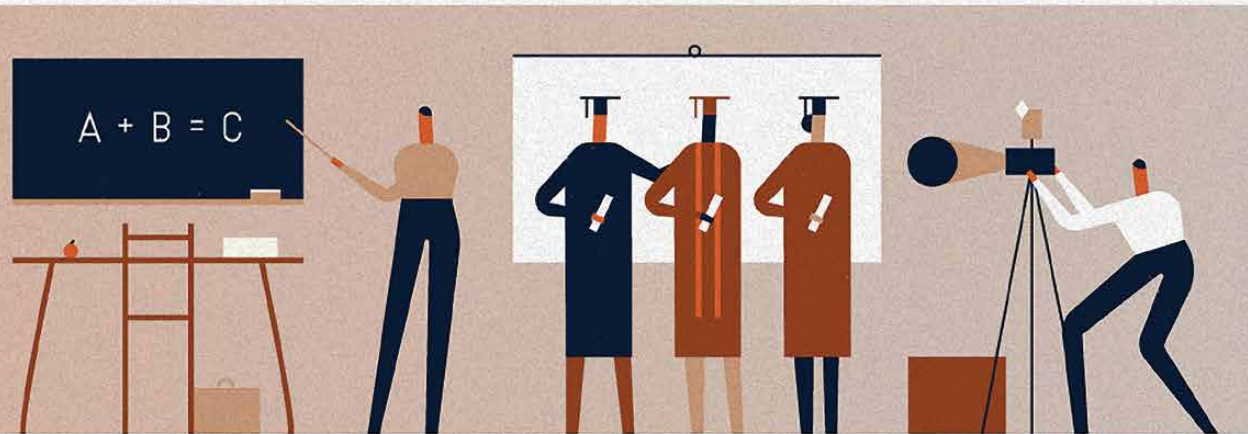
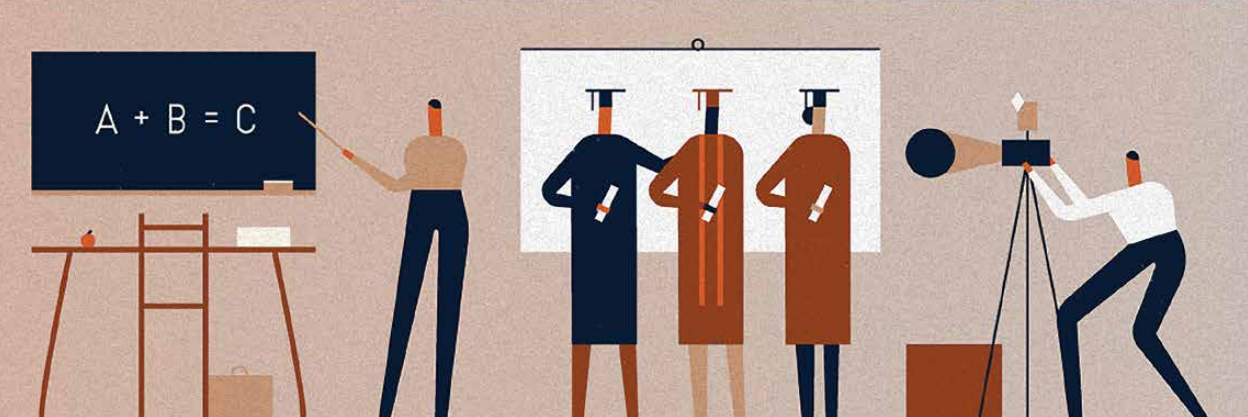


Illustration by MUTI



Machine learning. Artificial intelligence. The fast-changing digital world. Technology is transforming the workplace. But many companies—and workers—are far from ready. In these three articles, experts and practitioners from a range of companies, universities, and other organizations discuss why the continuous development of skills should be a top corporate priority—and how to deliver it. Learning leaders, they argue, will be global leaders.





# Putting lifelong learning on the CEO agenda

In an open letter to business leaders, a Harvard Business School professor and a learning engineer at the Chan Zuckerberg Initiative present an emphatic case to make learning a corporate priority.

*by Amy Edmondson and Bror Saxberg*

**If you are anything** like most corporate leaders we know, you say (and mean) the right things when it comes to learning, such as “Our people are our most valuable asset, and their development is a top priority.” But if you are honest with yourself, you also know that your actions often emphasize financial over human capital, and you may leave it to individuals to find the learning opportunities they need. That worked, sort of, when people spent most of their time “doing” rather than “thinking,” “creating,” or “deciding.”

But times are changing. Artificial intelligence (AI) and robotics are facilitating the automation of a growing number of “doing” tasks. Today’s AI-enabled, information-rich tools are increasingly able to handle jobs that in the past have been exclusively done by people—think tax returns, language translations, accounting, even some kinds of surgery. These shifts will produce massive disruptions to employment and hold enormous implications for you as a business leader.

Both of us are educators, with decades of experience working with businesses. We write this letter not to criticize but to make the case for why a new emphasis on lifelong learning is going to become increasingly central to *your* job: maximizing the value and impact of your organization.

We are not seers. Still, one thing is clear. In the future, more and more of your people will need to use complex cognitive skills for more and more of their time. Some are already comfortable with this; some are not. As stewards of your company's value, you need to understand how to get your people ready—not because it's a nice thing to do but because the competitive advantage of early adopters of advanced algorithms and robotics will rapidly diminish. Simply put, companies will differentiate themselves not just by having the tools but by how their people interact with those tools and make the complex decisions that they must make in the course of doing their work. The greater the use of information-rich tools, the more important the decisions are that are still made by people. That, in turn, increases the importance of continuous learning. Workers, managers, and executives need to keep up with the machines and be able to interpret their results.

## CHALLENGES AHEAD

You may be wondering if you can adapt to changing technology simply by finding new people who can do the new stuff. The answer is no. There is a kind of Moore's law at work, in which the capacities of these information tools are doubling every couple of years or less. You can't "fire and hire" your way to success if you have to turn over people every 9 to 18 months to bring in new skills.

There are other problems to keep in mind as well. One is that we live in a world where companies must adapt their strategies rapidly in response to competition, structural changes brought on by digitization, and counter-intuitive insights revealed by advanced analytics. That means that the old split between strategy development and execution, if it ever made sense, is outmoded: organizations have to adapt continually, and therefore they have to learn *while* executing.

In that kind of world, the future of learning is not in the classroom. It's in the field—finding ways to do better while doing the work. This won't happen by chance. You need to model learning behavior and invest in the development of learning processes and tools. You need to take an appropriately humble stand about the challenges ahead—for you as a leader and for your organization. There is simply no room for arrogance in a highly dynamic and uncertain world. You also need to create a psychologically safe environment in which people feel comfortable taking the risks that come with experimentation and practice; giving and receiving candid feedback; asking questions; and acknowledging failures. Learning must be built into every aspect of the organization.

Another inconvenient truth is that the education and training sector, historically, has not done well in terms of implementing evidence-based, iterative improvements in the learning processes and outcomes it emphasizes. Learning science does exist. It's just not always, or even often, applied in the workplace. There is very little “learning engineering.”

As a senior leader, then, you have to rethink how to continuously improve the skills of your employees beyond conventional training and education. You need to insist on experimenting with new learning methods and look for approaches that are based on good evidence. And you need to identify and support learning leaders who are deeply connected to learning science and who can make the case for implementing the right measures.

## ‘SOFT’ PRIORITIES

When we talk about learning, the emphasis is often on “hard” skills, such as coding, analytics, and data science. While these skills will be critical, they are only part of the story. The dynamics we described at the outset, in which information-rich tools become ubiquitous and people are a differentiator, paradoxically, increase the importance of such “soft” attributes as collaboration, empathy, and meaning making.

### Collaboration

In most organizations, teamwork will be more important and valuable than ever. In both scientific discovery and commercial innovation, for example, the size of innovating teams has grown larger and the skills brought together are more diverse than ever. This is because, as knowledge expands, expertise both deepens and narrows—necessitating collaboration across fields to produce great results.

In a way that would have seemed far-fetched 20 years ago, building a car requires integrating cross-disciplinary expertise in artificial intelligence, computer science, advanced lighting, and materials, in addition to the classic automotive-engineering disciplines of design and manufacturing. Or consider the rescue of the Chilean miners in 2010. The miners themselves formed an extraordinary team to support their mutual survival. But they also needed the cross-disciplinary expertise of the team of above-ground rescuers who integrated expertise from geologists, engineers, physicians, and naval special forces.

Teamwork doesn't necessarily mean collaborating within teams in the classic sense of bounded groups of people working together on specific tasks.

Instead, it's often about *teaming*—communicating and collaborating with people across boundaries, such as expertise or distance, spontaneously and continuously. Your people need to have, or develop, the skills for effective teamwork.

## Empathy

Global marketplaces can threaten the ability to spontaneously empathize, especially when we cannot see other people's faces—for example, in geographically dispersed workforces or through remote service encounters. Genuine human connections can be made, and broken, quickly. Customers and employees alike feel deep loyalty to organizations that treat them with respect.

To some extent, empathy can be taught—through perspective-taking exercises and through quick but profound exchanges between people. For that to happen, leaders at all levels of your organization have to be engaged and model the right behavior. This can start with something as simple as asking your managers to put themselves in the shoes of others in a given situation. Offer experiences where you can succeed only by practicing empathy. Some companies encourage this by requiring managers to work on the front lines—at the retail counter or on the factory floor—before putting on the white collar.

You also should monitor feedback blogs. Praise your staff, in public, when they get things right. Observe your customers and how they interact with your company. Use design-thinking tools such as empathy maps as a starting point for conceiving new products and features and for identifying customer pain points. In an era of customization, empathy matters more because it requires putting yourself in the minds of many different kinds of customers, not just the familiar ones for whom a product or service was designed.

## Meaning making

Meaning making in the AI era starts with an appreciation of what machines can and cannot do. It may be possible, for example, for a machine to make certain kinds of diagnoses more accurately than a person can. But it will be up to nurses, doctors, and therapists to help patients understand the implications and manage the consequences. It's the difference between knowledge and meaning.

The search for meaning informs many kinds of decisions: it could be a work challenge overcome, a way to advance a career, a resolution to a personal issue, or matters related to health and wellness. As information-rich tools help provide better solutions to complex situations, organizations will need

to understand what matters for each person. Meaningfully connecting decisions, even those made by algorithms, to individual circumstances is likely to be the work of skilled people for a long time to come—if we prepare our organizations to think like this.

You, and your people, can all be meaningseekers and meaningmakers. Tapping into this fundamental human quality is your best strategy for winning hearts and minds, within and without. And it's also good for business. People who come to work believing that what they do matters—that in some small way it contributes to making the world a better place—are more committed to their organizations, more passionate about serving customers, and more resilient in the face of challenges. Good leaders have always played this role; when they don't, people are more apt to act in ways that maximize self-interest and minimize effort. We would assert, though, that articulating the purpose of your organization (and evolving that message as technology and customer needs change) is about to become an even more crucial part of your job.


## **HARD RESULTS**

Although the importance of “soft” skills may be growing, you should think about investments in learning and development in the same way you think about any investment: What is the value? How do I know I'm getting it? How can I make it more efficient? The only way to answer questions like these is to identify how employees' decisions add value to the organization or subtract value from it. The costs and benefits of the decisions made by many high-volume, high-value, high-variability groups of employees, such as sales staff or project managers, are often unknown. It's up to you to determine what measures matter, such as close rates or error costs; then you need to communicate these priorities. For example, tracking error rates for nurses—and the decisions that lead to them—and then taking action can translate into shorter hospital visits, fewer lawsuits, and better health outcomes. Once you have decided what metrics to track, four steps should follow:

- First, find the best performers, and prepare to be amazed by how much more value they add with their decisions compared with the median performer. This sets a benchmark for the value that could be generated with the right training. (It can be large!)
- Second, analyze what these top performers decide and do. That's not easy, because much of it is unconscious. Still, it is important to learn as much as possible. On that basis, ensure that best practices are the focus of training and development programs. One study of helicopter pilots, for example, found that the best ones had a specific, albeit unconscious, way of using

their eyes during a landing. The study also found that novices could be easily taught to consciously approximate those same gaze directions—and thus reduce the rate of crashes in simulations.

- Third, with these targets in mind, insist on well-designed training, based on insights from learning science, and support high-quality evidence gathering about results. Getting a return is, after all, the point of any investment. You will want to compare the work of those who have had new training to that of others who have not and to look for material differences in value.
- Finally, commit to continuing this cycle of tracking expertise, improving training, and gathering evidence over time to make sure that you continue to capture value. Training is no longer a matter of “one and done,” if it ever was. Rapidly changing workplaces mean continuous improvement has to be the norm.

This may sound like a lot of work, but it’s going to become a competitive necessity. The rapid development of information-rich tools, together with the brisk pace of change in every facet of society, mean that the decisions and organizational roles left to people matter more than ever. You must therefore focus more, and spend more of your time, on upgrading your employees’ skills and mastering the collaboration, empathy, and meaning making that will help your organization thrive. 

**Amy Edmondson** is the Novartis Professor of Leadership and Management at Harvard Business School. **Bror Saxberg** is vice president of learning science at the Chan Zuckerberg Initiative. Edmondson and Saxberg are members of the Consortium for Advancing Adult Learning & Development (CAALD), convened by McKinsey & Company.

Copyright © 2017 McKinsey & Company. All rights reserved.



# Getting ready for the future of work

Artificial intelligence is poised to disrupt the workplace. What will the company of the future look like—and how will people keep up?

**Work is changing.** Digital communications have made remote work commonplace. The gig economy is growing. And advances in artificial intelligence (AI) and robotics could upend the conventional workplace. According to the McKinsey Global Institute, at least 30 percent of the activities associated with the majority of occupations in the United States could be automated—including knowledge tasks previously thought immune.<sup>1</sup>

For workers of the future, then, the ability to adapt their skills to the changing needs of the workplace will be critical. Lifelong learning must become the norm—and at the moment, the reality falls far short of the necessity. The Consortium for Advancing Adult Learning & Development (CAALD), a group of learning authorities whose members include researchers, corporate and nonprofit leaders, and McKinsey experts, recently met in Boston for the second year in a row to assess the state of the workplace and explore potential solutions.

In a series of discussions, CAALD members addressed the challenges facing individuals and society, new ways to knit together learning and work, and the intriguing experiments that companies are undertaking to help workers adapt to change. (CAALD members also explored the potential for learning innovation in a set of related discussions. For more, see “Learning innovation in the digital age,” on page 69.)

---

<sup>1</sup> For more information, see “Harnessing automation for a future that works,” McKinsey Global Institute, January 2017, on [McKinsey.com](https://www.mckinsey.com).



## SOCIETAL CHALLENGES

**Bob Kegan**, William and Miriam Meehan Research Professor in Adult Learning and Professional Development, Harvard Graduate School of Education: The number of employees who are operating in more nonstandard, complex jobs is going to increase, while less complex work is going to be increasingly automated. The time it takes for people's skills to become irrelevant will shrink. It used to be, "I got my skills in my 20s; I can hang on until 60." It's not going to be like that anymore. We're going to live in an era of people finding their skills irrelevant at age 45, 40, 35. And there are going to be a great many people who are out of work. What are you going to do about that? Or is work going to essentially become an elite setting for more favored, privileged, complex people to live out meaningful lives? That's a disturbing question. It's hard for me to believe that we're going to have a society in which half the people just don't work. Work itself is intrinsically meaningful. People need to go to work every day.

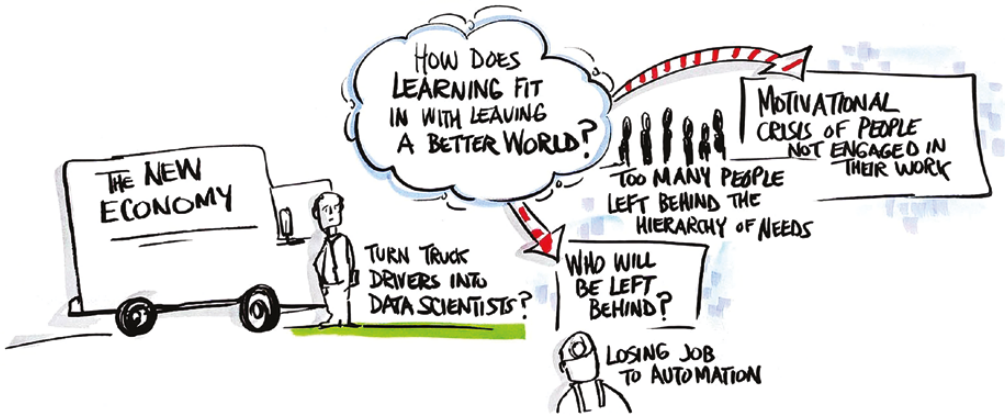
**Jason Palmer**, general partner, New Markets Venture Partners: As a society, we have a big underinvestment in education and training for older folks. There is a misconception that it makes sense to spend \$300 billion to \$400 billion a year on college students between the ages of 17 and 25 and then very little after that. But most Americans who need higher education and postsecondary training are 35, 45, 55.

**Maria Flynn**, president and CEO, Jobs for the Future: In a country with such imperfect career navigation and lifelong-learning systems, plus the growth of the gig economy, we could end up worse off if we don't start to change now. On a broad scale, we have to think about the intersection of economic mobility and the future of work, especially for those who are already left behind in today's economy. Without highly effective education and workforce-development systems, those groups will fall further behind. That's something that worries me an awful lot.

**Amy Edmondson**, Novartis Professor of Leadership and Management, Harvard Business School: We must view it as a race to develop institutions to support lifelong learning. We need to move fast because we're playing catch-up, and this is a much harder game to play; suddenly the numbers of people who need to learn fast are too big. Look at Greece and Spain, where half of the people in their 20s there are unemployed.

Two things that human beings don't do well are thinking about the future and thinking about the collective. The long term and the collective good will not

## Adapting to a changing workplace



Graphic illustrations created by Leah Silverman, Crowley & Company

naturally be taken care of by the decision making of individual workers. So a motivating force is needed to spur action, or else we slowly but surely will fail.

**Claudio Feser**, senior partner, McKinsey & Company: That’s sobering, because it implies that leaving human beings to themselves and saying, in effect, “Take care of your own development” is probably not so fruitful. Whether it’s the state or whether it’s companies, that means we will have social engineers who create recommendations in which people are nudged, but also helped, to learn and advance.

### NEW SKILLS NEEDED

**Bob Kegan**: Work will increasingly be about adaptive challenges, the ones that artificial intelligence and robots will be less good at meeting. There’s going to be employment for people with growth mind-sets, but fixed mind-sets are going to be more and more replaceable by machines. We used to say things like, “You’re going to have 6.5 jobs over the course of your career.” We should also be saying, “You’re going to have a number of qualitative shifts in your own growth and capacity over the course of your career.” That might be with the same employer, or it might be with 6.5 different employers.

**Bror Saxberg**, vice president of learning science, Chan Zuckerberg Initiative: A lot of work that will continue to be of high value for people to do is tied to meaning making with other people. How does this decision, product, or service affect your life, your challenges, your family? The corollary is that we need to train everybody, early, on how to give meaning to other people’s challenges, work, skills, and needs to ensure they will have valuable work to

do. And imagine how fun it would be to live in a world surrounded by people who are thinking professionally about *your* needs, not just theirs! This will require very intentional effort all through the growing-up years and beyond—it is not a thing you pick up the night before you start work.

**Betsy Ziegler**, chief innovation officer, Kellogg School of Management: One of the things that I've spent a lot of time thinking about is how we train our students to think of AI or the machine as a team member rather than as a competitive threat. A lot of the analyst work is being taken over by machines, for example, but that gives the MBA graduates access to higher-skilled work. I think there's a competitive advantage to being human. Given that the level of ambiguity is amplifying and the rate of change is increasing, what do people have to be equipped with? What tools do they need? We don't talk to them about that now. We don't teach any of them how to be a leader in the organization that is managing contractor talent or that is responsible for this fluidity of work. We should.

## THE SOCIAL COSTS OF REMOTE WORK

**Maria Flynn**: The distributed model among knowledge workers brings challenges, something we are experiencing as Jobs for the Future continues to grow and scale. With more locations, we have more remote supervisors. When they send members of their teams into the field to work with our clients, it can be challenging to assess performance and competencies. We need a different skill set and strategies for the complexities of managing performance when managers and their teams aren't working in the same place. We need to think differently to keep remote workers engaged and connected when they're not in the same location as their manager.

**Portia Wu**, former assistant secretary, Employment and Training Administration, US Department of Labor: What you lose in being remote is the informal cross-fertilization, the knowledge you get because you hear someone talking about something by the watercooler: "You're doing that in Arizona? I have this problem in Maryland." This isn't just a problem for knowledge-based work. It's just as much a problem in manufacturing. There's a loss that you have in not being together in a physical work environment. And I do not know how to compensate for that.

**Etienne van der Walt**, CEO, Neurozone: At Neurozone, we don't have an office; we are in different cities and work in the cloud. I can honestly say I miss my people. I want to smell them, unconsciously—because we need that. It's trust, it's a sense of belonging, and it's good. Because of this innate need, the gig

economy may be creating a new organic network, a sort of new organization, flocking together at worktables and workstations in cafés, delis, and other outlets with great coffee. It will be interesting to learn more about the characteristics of these gatherings and tap into them.

**Tamara Ganc**, chief learning officer, Vanguard Group: With our workforce now more dispersed, we're leveraging technology so people don't need to be physically together to still connect live. For example, we often combine live, online training with offline collaboration and exercises following the learning event. We try to bring the online activities to life through the art of storytelling. One specific technique that has been successful is filming brief video vignettes of Vanguard leaders telling their life and career stories. As a result, our workers feel more connected to our leaders; that is, it tugs on their emotions a bit, even though they're not having a live conversation.

## INSIDE THE COMPANY OF THE FUTURE

**Bob Kegan**: We all know work settings will need to be more agile, flexible, entrepreneurial, and creative—but on behalf of what priorities? At the top of the list, I'd suggest making the organization the most powerful incubator possible for the development of talent. You're never going to be able to hire and fire your way to the competencies you need. So you have to think about how work itself can foster talent.

**Bror Saxberg**: I think there is a serious economic rationale for a business with a lot of low-wage people to be thinking strategically about the future of those people, even as it sheds low-wage jobs through automation. It's not just to promote the best of those low-wage folks to a new tier of cognitively more complex work—although that's part of the rationale. As human decision making becomes rarer, and also more complex with higher impact, it becomes increasingly valuable to attract the best talent. You'll do a better job attracting this talent if you have a reputation for taking care of people, even if you let some of them go. People at the company need to be preparing for and even cycling through many lower-, mid-, and upper-level jobs that remain to gain skills that will be useful even elsewhere. That way, really good people, at any level, looking at coming in to the company can say to themselves, "It's turbulent, like everywhere now, but this place goes out of its way to set people up for their next move." Great people would rather go to that company than to one that's mostly just firing.

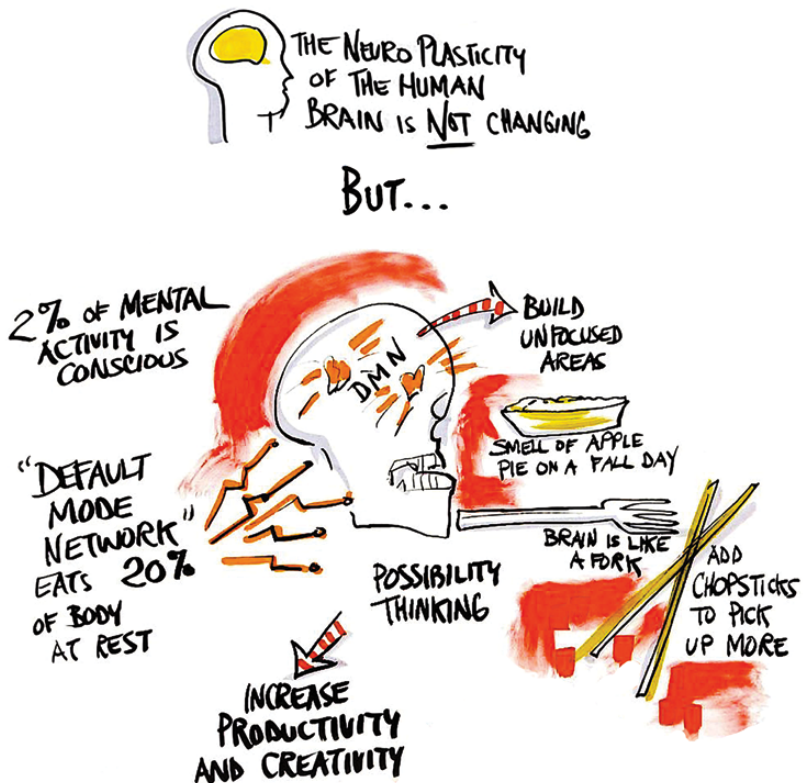
**Tamara Ganc**: At Vanguard, we have a rotational culture, and I think that's one reason why employment tenure in our company is so long—people can

post for a variety of roles, and these varied experiences help workers become more fungible and have what feels like many careers, all with the same organization. We are also piloting new ways to staff project work at Vanguard. For example, one of our employee-resource groups recently piloted a “gig economy” approach and said, “Here’s what we want to do for Vanguard over the next 12 months. Who wants to sign up?” The response was immediate.

## STRETCHING MIND-SETS

**Jeff Dieffenbach**, associate director, Massachusetts Institute of Technology Integrated Learning Initiative: While change is accelerating, one thing that is definitely not is the neuroplasticity of the brain. In other words, the rate of change in the world may have surpassed the speed at which the human mind can process those changes. I love tech, I love innovative technology, but this machine—meaning our brain—can only go so far. That’s a big part of the crisis that we’re facing.

### Managing the brain’s energy budget




Graphic illustrations created by Leah Silverman, Crowley & Company

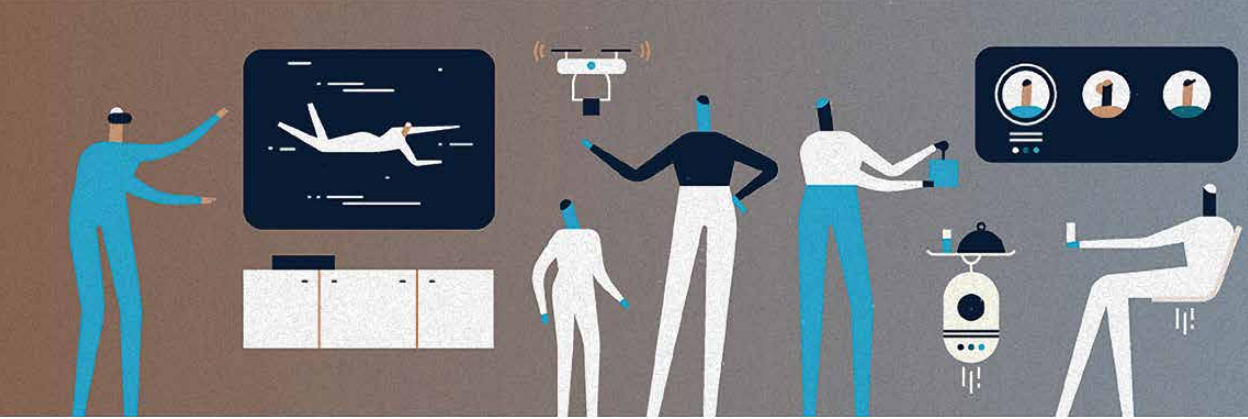
**Srini Pillay**, assistant professor, Harvard Medical School: If you say to people, “You need to adapt,” but you don’t help them learn how to build a change-oriented mind-set, it doesn’t really help. In fact, it hurts productivity. People confuse productivity with the need for constant focus. But that will not optimize brain function. Managing the brain’s energy budget requires going between focus and unfocus. When you unfocus, you activate the default-mode network—a key brain network responsible for energy management, creativity, memory, flexibility in thinking, and prediction of the future.

You can teach these mind-set shifts by teaching specific techniques—50 or 60 of them. Five to 15 minutes of napping, for example, creates clarity for one to three hours; 90 minutes of napping facilitates creativity. People say that creativity is one solution for managing challenges in the future. But when you look at unconscious associations to creativity, people associate it with vomit and agony. We need to address these unconscious, automatic associations and teach people how to override them.

## DIGITAL NUDGES

**Etienne van der Walt**: Until a year ago, I was convinced that I could use online learning only for knowledge and for simple skills. I’m increasingly convinced that’s not the case. One organization I know of is using online tools to create mind-set shifts, and there are many of these kinds of things popping up. By giving you tasks, they force you to think positively about your day and they teach you to reframe certain things. And this is all done online. These may be microsteps, but they are steps, and these steps will become bigger.

**Tamara Ganc**: This reminds me of something our leadership-development team launched last year with behavioral nudging. We created what we call “whisper courses,” which were based on the premise that, as leaders, we have the best intentions yet get so busy and forget to do the many little things that matter so much. I recall us talking about how nice it would be to have this invisible “helper” who sat on our shoulder and whispered to us little reminders throughout the day, like, “Pssst... did you thank Bill?” or, “Pssst... did you remember to compliment Ann on her presentation yesterday?” To bring it to life, we simply used automatic emails as the helper. A leader can sign up in our learning-management system for a six-week series of nudges. On a Monday, you get a prompt related to the nudge series you signed up for—for example, recognition or coaching. That Friday, you get an email asking if you did it and to reflect on how it went. It influences behavior on a very granular level. 



# Learning innovation in the digital age

As the workplace changes, so must education and training. Exciting experiments are under way—but are they enough?

**As technology transforms the workplace**, the need for innovation in learning and development is urgent. In a series of recent discussions, members of the Consortium for Advancing Adult Learning & Development (CAALD)—a group of learning authorities whose members include researchers, corporate and nonprofit leaders, and McKinsey experts—explored what is, and isn't, being done to innovate in these fields. Many CAALD experts were skeptical about the ability of universities to respond rapidly enough. Some also suggested that as the workplace changes, the role of the college degree will shift as well—and that its value could even decline. Fortunately, innovation is taking place both at universities and businesses, including AT&T, edX, Microsoft, and the Massachusetts Institute of Technology (MIT). Participants described the potential of these and other developments. And they agreed that while some companies are ready to explore new ways of developing talent, sorting through the options is complex and time consuming. The rapid growth of the gig economy creates additional challenges—and opportunities—for innovation efforts.

Here we present edited excerpts of these experts' reflections, which emerged at a meeting in Boston earlier this year and build on related CAALD discussions exploring artificial intelligence and the future of work (see "Getting ready for the future of work," on page 62).

## From gig economy to distributed teams



Graphic illustrations created by Leah Silverman, Crowley & Company

### INERTIA IN HIGHER EDUCATION

**Jason Palmer**, general partner, New Markets Venture Partners: Our higher-education system is 25 years behind the curve. There needs to be a new set of institutions and programs that are jointly owned and managed by corporations or industry.

**Betsy Ziegler**, chief innovation officer, Kellogg School of Management: One of the flaws of the American higher-education system is that once you cross the graduation stage, we largely sever the relationship with you—with the exception of viewing you as a donor. Your connection and loyalty to



the school haven't changed but the relationship with the institution has. At Kellogg, we say, "Congratulations" and give them a discount off executive-education programs and lifelong access to the career-management center. But we do nothing with respect to "how are your skills and capabilities changing over time? And what can we do to help you meet these needs?"

**Lynda Gratton**, professor of management practice, London Business School: The universities will struggle to adapt to lifetime learning. At London Business School, we launched the masters in management as a one-year program for students at the beginning of their careers. We also have the Sloan program for midcareer people. But lifelong learning is a more complex challenge, and while individual faculty are enthusiastic, from an institutional perspective it's hard to see how this would fit with our current teaching practices or, indeed, how we could create a business model around it.

## MISALIGNED INCENTIVES

**Beth Davies**, former director of learning and development, Tesla: I remember talking to some community colleges that we were working with. I was asking them about creating a certificate program, say, for manufacturing engineers. And they were a bit reticent because their funding is based on completion rate.

**Lee Rubenstein**, vice president of business development, edX: Think about that—the North Star there isn't the student, it's the funding.

**Damian Ewens**, project director, Opportunity@Work: I was in a six-month-long conversation with a big community college and one of the coding boot camps, and we were talking about how they might partner to blend the best of the demand-driven-skills training within an academic institution. Six months later, the idea finally got to the computer-science faculty. The chair of the department discussed with the head of the coding boot camp the need to align standards and outcomes.

"What are your outcomes?" the professor asked.

"We have a 90 percent job-placement rate," said the head of the boot camp.

"No. No. What are your outcomes?"

"Everyone gets a job."

"I hear that. I need to know what your outcomes are."

A chorus of faculty began to chime in about learning outcomes, and the boot-camp leader responded, “We design the learning with the companies to make sure people get the skills to get a job. But the ultimate outcome is still the job.” The faculty was not convinced: “That’s not good enough.” Conversation over.

## THE MATTER OF DEGREES

**Marianne Monte**, chief people officer, Shawmut Design and Construction: I run the HR department at a construction company. When I joined, someone said, “Everyone has to have a degree.” I said, “Why?” No one had a good answer. They were doing it because all the competitors did. But for the folks who go into the trades, there’s no way that’s going to happen. Nontraditional learners tend to go into those fields. We want to eliminate the stigma around that.

We also went to the schools that provided degrees around specific topics. What we found was that people who excelled in the organization were not the same people who did really well in terms of getting those degrees or who even had them. Some of our best executives are people who started in carpentry or started in iron-worker roles.

**Kris Clerkin**, managing partner, Volta Learning Group: A degree is not really a great proxy for meaningful skills. When you look at a transcript, it has a list of courses, but those don’t necessarily show skills or competencies. That said, degrees are a recognized credential; employers use them as a signal. Plus, there’s a yearning for them. It’s part of the American narrative. For me, it’s more like “let’s figure out how to do this better, in a way that works for employers and students. Let’s not throw out everything that we have, but find more flexible ways of providing recognizable value of competency more quickly, in smaller units that build to degrees.”

**Katie Coates**, senior learning-solutions expert, McKinsey & Company: I do think people want degrees. They want them because there isn’t an alternative. And they want them because they want some marker.

## IN SEARCH OF ALTERNATIVES

**Lee Rubenstein**: Leaders need to understand and value the alternative credentials that are available. If I’m an employer, I need to be saying, “Here are the 12 competencies that I need you to get. I don’t care where you get them. You don’t need to spend \$200,000 in four years to go do that. You just need to show us some proof.”

The idea that you enter at the bottom and four-plus years later you end at the top and you're done is a fiction. It doesn't mean anything anymore. Learners need to be able to enter at any different point along the way, take what they need, and get going to do whatever it is they wanted to do. We have to try to find a way to help alternative credentials become a currency among learners that is respected and valued by employers.

**Lynda Gratton:** What we're describing at the moment is an either/or. Either you do a degree or you do other programs. But, actually, people can do both. You simply have to say, "These are the skills that you need."

**Beth Davies:** When I joined Tesla, in 2011, there were 800 employees. There were over 30,000 when I left. In five years, I think, organizations like Tesla will be saying, "Of course, we hire people with any kind of meaningful credentials, regardless of degrees. It's a done deal." Organizations cannot grow at rates like these and not make this change. You cannot find all of these people by only following traditional means. We'll find the people through nontraditional means. At some point, the nut will get cracked.

To do that, though, the degree-alternatives space needs to solve for recruiters. Recruiters in fast-growing companies are busy. They don't have time to do the analysis that says, "Let me follow up on the people I hired to figure out which are actually making it in this organization. How are the ones who have a certificate that I took a chance on performing vis-à-vis the ones I thought were a shoo-in because they had a degree?"

In the same way, it will be a struggle to find the time and bandwidth needed to figure out who are all these learning providers. Who are the good ones? Which should we rely on? What does the credential here mean, and how is that different from the credential over there?

## INNOVATION AND EXPERIMENTATION

**Lee Rubenstein:** About a year ago, MIT started a new type of course sequence, on edX online, called a MicroMasters. A MicroMasters is usually a four- to five-course sequence that builds a job-skills competency that is endorsed by a corporation and backed by credit. Students who completed a MicroMasters from MIT and then applied and were accepted to the full master's program at MIT received 50 percent off the cost and time of that MIT master's program—in supply-chain management. And so if a company was looking for somebody with supply-chain experience, and someone came to it with an

MIT MicroMasters, why would a company not value it? For the learner, that's about a \$1,500 investment, while the conventional master's is \$60,000. Think of a large retailer where about 100,000 employees work with the supply chain. How many of them do you think went through a credible university and studied supply-chain management and got anywhere near the equivalent of half of an MIT master's?

**Lynda Gratton:** Microsoft has badges that show an employee has passed an exam or completed certification for a given skill. You can take your badges with you if you leave, too. If I were a talent-rich company, I would want to do the same.

I think more companies are going to do this kind of "badging," and this will be part of their recruitment and retention process. At the same time this idea of badging spreads, I also think we're going to see more and more configurations where a business has solved part of the puzzle. LinkedIn, say, knows what skills you've got. And Lynda.com, the video-based learning company, has another part. You will see a lot more innovation in this space.

**Julia Stiglitz, vice president, Coursera:** At AT&T, they have taken all of their job categories, mapped them onto competencies, and aligned them to learning opportunities. Individuals can go onto a personalized-learning system and see if their jobs are on the decline or on the rise. They can discover jobs that they are interested in, see the associated competencies, and take advantage of learning opportunities that will enable them to make a transition. The transparency of AT&T's system is remarkable and empowering to employees.

In Silicon Valley, at least when people are hiring engineers, companies don't care where they went to school. Facebook is hiring people right out of college if they can code. And we have a 14-year-old intern. All these companies care about is that people can code.


**Annie McKee, senior fellow, University of Pennsylvania:** Here's a practical suggestion. In recent years, there have been somewhere between 300,000 to 400,000 skilled manufacturing jobs going begging in the US at any given time. Pick a subset of those in a particular region, then figure out a way to teach the skills and do a test project.

## LEARNING IN THE GIG ECONOMY

**Amy Edmondson**, Novartis Professor of Leadership and Management, Harvard Business School: A more diffuse, gig economy will exponentially increase the difficulty of getting people to undertake and complete training. We know it is a huge hurdle under the best of circumstances, and it's even harder when the learning isn't contextualized. Coursework is hard for many people, due to time constraints or a lack of interest in traditional learning, but interacting with people or doing on-the-job tasks that develop and use math or computer skills makes learning more pragmatic and attractive. We need to figure out how to line up some of the factors that drive people toward completion and success, even when they don't work for an organization. A complicating factor is that a lot of gig-economy companies are utterly unmotivated to take on costs that they don't have to, and many individuals don't have the cash.

**Tamara Ganc**, chief learning officer, Vanguard Group: I wonder if there is a way to intrinsically motivate the gig worker. EBay, for example, has five-star sellers. Maybe there could be some visual way to display the gig worker's level of learning—the way they've kept up on their craft.

**Portia Wu**, former assistant secretary, Employment and Training Administration, US Department of Labor: Some models do that now, such as home healthcare and food safety. People can say, "I'm food-safety certified" or "I have 500 hours with this special-needs population, and I have done this coursework." That can be seen in a profile, which can help their marketability. You could also have a multiemployer structure where there's a central entity that says, "Here's a curriculum that we've vetted." The individual doesn't have to figure it out.

**Claudio Feser**, senior partner, McKinsey & Company: Whether it's government or self-organized, there is a need for some form of central management of a curriculum or certification to create opportunities. People can't do it all by themselves. 

Copyright © 2017 McKinsey & Company. All rights reserved.

# THE HEALTH IMPERATIVE FOR ORGANIZATIONS, INDIVIDUALS, AND LEADERS



Illustration by Studio Castelao

# Organizational health: A fast track to performance improvement

Working on health works. It's good for your people and for your bottom line.

*by Chris Gagnon, Elizabeth John, and Rob Theunissen*

**The central idea** underlying our organizational work for the past decade has been that the best way to run a business is to balance short-term performance and long-term health.

Healthy companies, we know, dramatically outperform their peers. The proof is strong—the top quartile of publicly traded companies in McKinsey's Organizational Health Index (OHI) delivers roughly three times the returns to shareholders as those in the bottom quartile—so strong, indeed, that we've almost come to take it for granted.

But now we see new, longitudinal evidence that redoubles our conviction. Companies that work on their health, we've found, not only achieve measurable improvements in their organizational well-being but demonstrate tangible performance gains in as little as 6 to 12 months. This holds true for companies across sectors and regions, as well as in contexts ranging from turnarounds to good-to-great initiatives.

Our recommendation is clear: start managing your organizational health as rigorously as you do your P&L, providing pathways for leaders at all levels to take part and embedding and measuring the new ways of working.

## HEALTH AND THE BOTTOM LINE

We think of organizational health as more than just culture or employee engagement. It's the organization's ability to align around a common vision, execute against that vision effectively, and renew itself through innovation and creative thinking. Put another way, health is how the ship is run, no matter who is at the helm and what waves rock the vessel.

### The case for health

Over the past ten years, we've monitored the health of more than 1,500 companies across 100 countries. We do this by aggregating the views of their employees and managers (more than four million to date) on management practices that drive nine key organizational dimensions—or “outcomes,” as we call them. We assign scores to each practice and outcome, allowing a company to see how it compares to others in the database.

We've long seen a strong, static correlation between health and financial performance. But our latest research is more dynamic: it highlights the potential for the vast majority of companies to *improve* their health and how this can correspond with enhanced performance. Our findings include the following:

- *Almost all companies perform better if they improve their health.* Around 80 percent of companies that took concrete actions on health saw an improvement, with a median six-point increase in their overall health (Exhibit 1). The majority of these companies moved up an entire quartile against all other companies in our database. Over the same period that the companies in our sample were making changes to their health, their earnings<sup>1</sup> and total returns to shareholders (TRS) were also increasing disproportionately—by 18 percent and 10 percent, respectively (against an average 7 percent increase in earnings and an average 9 percent increase in TRS for those companies in the S&P 500).
- *The unfit are the most likely to make the biggest health advances.* After working on their health, companies in the bottom quartile saw a 9-point health improvement, with notably strong improvements in the company direction (+17 points) and innovation and learning (+14 points) outcomes. This group of “health workers” made progress across every outcome.

---

<sup>1</sup> The earnings metric we used for this analysis was earnings before interest, taxes, depreciation, and amortization (EBITDA).



- *Those at the top achieve the biggest financial rewards.* Companies whose health-improvement efforts took them from the second quartile of the OHI to the top quartile recorded the biggest financial-performance boost, a clear sign that working on health is an important factor in going from “good” to “great.”

Could the causality run the other way? In other words, when companies improve their financial performance, might their people align, execute, and renew better and therefore be more likely to identify healthy changes in the characteristics of their organizations? In theory, yes. In practice, though, we’ve seen the opposite, over and over again. Consider, for example, the experience of a European entertainment company: Over the past three and a half years, it’s moved from the third quartile of the OHI to the top decile. Financial performance has improved dramatically during that period as well (its market share is up 7 percent, customer volume is up 15 percent, and EBITDA is up 85 percent). But when the company was acquired recently by a larger competitor, it was the improvement in health that particularly stood out. The acquirer’s CEO said that, in his mind, organizational health accounted for at least 10 percent of the entertainment company’s value. Health, in short, isn’t some survey artifact; it’s something you can see and feel when you’re inside a healthy company and a prerequisite for sustained performance.

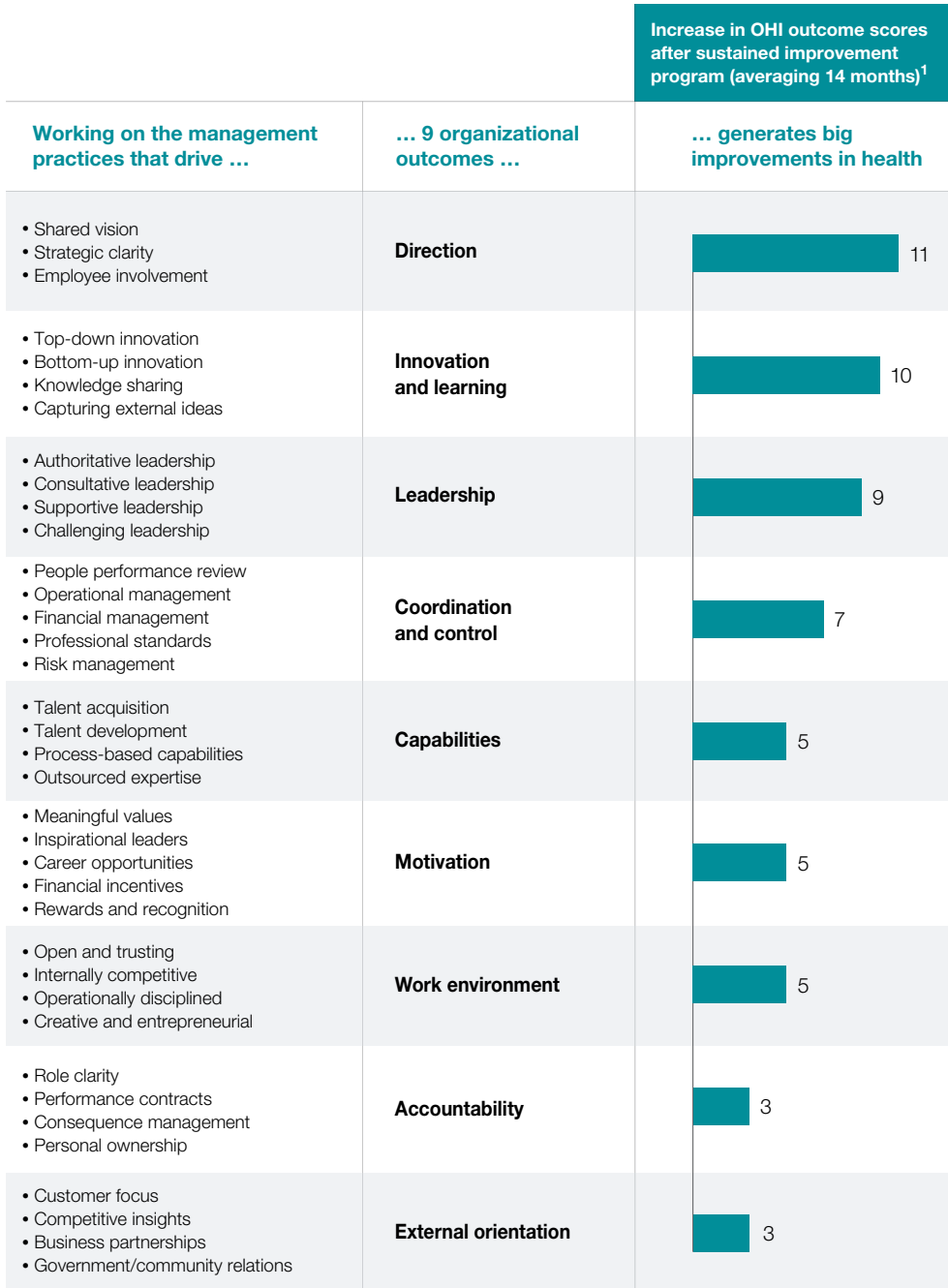
### Speed and rigor

Given all the data and practical experience that supports working on health, companies’ obsession with the P&L alone continues to puzzle us. It’s right that leaders manage their P&L meticulously, but why not do the same for their health? In fact, why not measure health frequently throughout the year, since it’s a leading indicator of performance, whereas financial results are a lagging one? Similarly, why do the vast majority of employee-performance dialogues focus on progress against financial targets, and not on whether behavior is contributing to organizational health?

In private conversations, executives often confess to being quite torn on this issue. They of course want a healthy organization, but they worry about how long it will take to realize tangible benefits from efforts to improve health and about distracting people from other mission-critical priorities. Our experience suggests that these concerns are misplaced. Just as anyone can compete in a 5K race if he or she trains properly, so too can companies be conditioned to improve their health in a short period of time—and those improvements can reinforce those mission-critical priorities.

Exhibit 1

**Companies that take concrete actions to improve their health can deliver impressive results.**



<sup>1</sup> OHI = Organizational Health Index; n = 64 companies with 252,339 individual respondents; start and end dates differ for each company.

Source: Organizational Health Index by McKinsey

The key to speed is a rigorous approach. This starts with making the quest for organizational health an integral part of forward-looking leadership: senior leaders need to consider themselves architects, not passive bystanders. Then it means integrating health into monthly and quarterly performance reviews, with data to show how both are trending versus targets. Supporting priorities include tying financial incentives to accomplishing health goals; creating and holding accountable a health team dedicated to embedding the right behaviors in the organization; and weaving health into the performance initiatives already under way.

## **A FOCUSED APPROACH TO ACHIEVING ORGANIZATIONAL HEALTH QUICKLY**

So how do you make health gains quickly? In our experience, there are four areas forward-looking leaders must invest in to build a healthy, performance-driven organization (besides, of course, ensuring that they are fully aligned on the business strategy; strategic and organizational misalignment are a sure-fire path to poor health and general operating dysfunction). The first, most important step is choosing the performance culture—or what we call the “recipe”—that will best drive their organization’s performance. Then it’s about moving to adopt that recipe as quickly as possible, addressing the mind-sets that will drive new forms of behavior, building a committed team of people at all levels to get involved, and, finally, developing fast feedback loops to monitor progress and course correct if necessary. These actions will help companies target resources on the right priorities, move swiftly, and make the new habits stick.

### **Pick a health recipe**

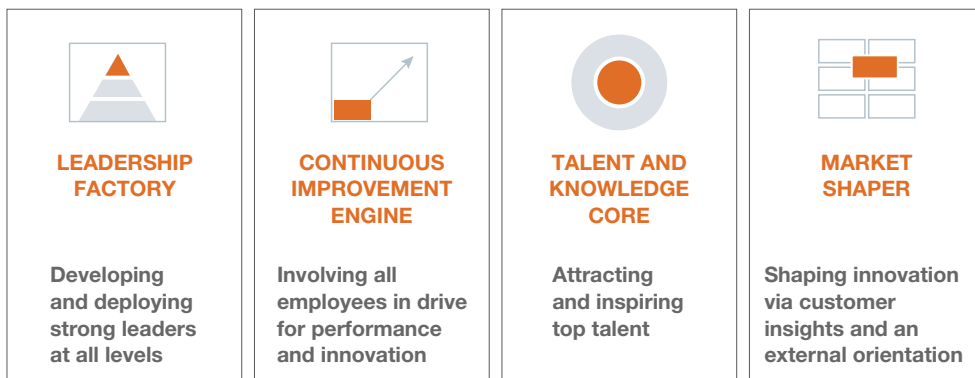
It’s clear that there is no such thing as a single winning performance culture. But based on our OHI analysis, we have identified four combinations of practices (or “recipes”) that, when applied together, drive superior health—and quickly. We call these four the Leadership Factory (organizations that drive performance by developing and deploying strong leaders, supporting them through coaching, formal training, and the right growth opportunities); the Continuous Improvement Engine (organizations that gain their competitive edge by involving all employees in driving performance and innovation, gathering insights, and sharing knowledge); the Talent and Knowledge Core (organizations that accelerate their performance by attracting and inspiring top talent); and the Market Shaper (organizations that get ahead through innovating at all levels and using their deep understanding of customers and competitors to implement those innovations).

They all sound pretty good, right? The reality is, though, that organizations can't do all of them, which is why a focus on one of them will lead to better and speedier results. Our research shows that when organizations are closely aligned to any *one* of these four recipes, they are six times more likely to enjoy top-quartile health than companies with weak alignment or diffuse efforts (Exhibit 2). Achieving such alignment requires focus on a small set of organizational-health practices (usually no more than five to ten) that work in concert with each other. Contrast that with what happens more commonly: leaders in various parts of the business copy different external "best practices" across myriad management disciplines. This approach diffuses people's efforts, can easily result in conflicting approaches, and hinders development of the sort of common performance culture that connects employees regardless of where they sit.

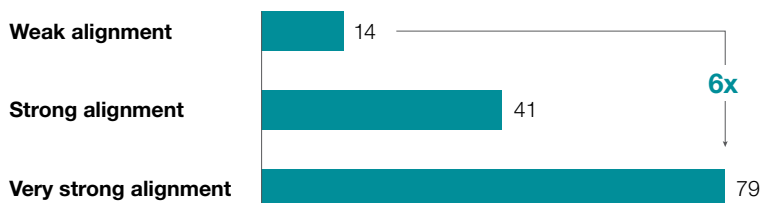
Exhibit 2

**While there is no such thing as a single winning performance culture, any one of four 'recipes' can produce superior organizational health.**

**4 recipes for organizational health (combinations of management practices)**



**% likelihood of top-quartile health** based on strength of alignment with any 1 of 4 organizational-health recipes<sup>1</sup>



<sup>1</sup> 68% of sample had weak alignment, 22% had strong alignment, and 10% had very strong alignment; n = 501 organizations with 1,539,047 individual respondents.

Source: Organizational Health Index by McKinsey

A family-owned Asian conglomerate faced this very challenge: People across the organization employed “best practices” from multiple sources and were adapting them in different ways. As the conglomerate’s leaders sought to change its conservative, risk-averse culture to a more innovative and entrepreneurial one, they began placing greater emphasis on organizational health and chose the Continuous Improvement Engine (CIE) recipe to govern their health strategy. Three themes were central to that strategy: improving knowledge sharing across business units, developing innovation and entrepreneurship, and improving employee motivation. Heads of HR across the business units drove the subsequent learning initiatives under the CEO’s sponsorship, launching a corporate academy on innovation, promoting regional innovation conferences, and providing extrinsic motivators such as nontraditional career paths for innovators and entrepreneurs. This consistent and coherent approach led to a nine-point improvement in health.

### Get to the heart of the mind-sets

Don’t be fooled by the symptom; understand the cause. To create rapid and lasting progress on the set of practices that will drive health, companies have to identify and address the deep-rooted mind-sets influencing employee behavior and then define new ones to replace them.

When seeking to understand and address these mind-sets, we like to use the image of an iceberg popularized by MIT academics Otto Scharmer and Katrin Kaufer.<sup>2</sup> Above the surface (the tip of the iceberg) is the visible behavior repeated and reinforced by the organization every day. Under the surface are employees’ thoughts and feelings (both conscious and unconscious); their values and beliefs (the things that are important to them); and their underlying needs, including their fears and the threats to their identity. These below-the-surface factors have to be understood and addressed before shifts in behavior and culture can be realized to drive organizational health.

Once a company has identified the mind-set or mind-sets it wants to instill in employees, it needs a set of actions to change the working environment and drive adherence. Here, McKinsey’s long-established influence model defines practical interventions that help structure a way forward.<sup>3</sup> Is there a clear change story to foster an understanding of why a new approach is required? What incentives should be introduced to reinforce that new approach? Are

---

<sup>2</sup> See Otto Scharmer and Katrin Kaufer, *Leading from the Emerging Future: From Ego-System to Eco-System Economies*, San Francisco, CA: Berrett-Koehler, 2013.

<sup>3</sup> See Tessa Basford and Bill Schaninger, “The four building blocks of change,” *McKinsey Quarterly*, April 2016, McKinsey.com.

training programs required to improve the skills of people in the organization? Are leaders across the business role modeling the appropriate mind-sets? Being clear on these four dimensions is likely to be critical to the long-term success of a program for improving organizational health.

A global equipment manufacturer was under pressure from cost-competitive entrants, challenging its long run of dominance in a specialized, capital-intensive industry. With the development costs of its most recently released product coming in at several times its original budget, the company needed to drive down costs to maintain its market position. Leaders had been trying to address this problem, but their lack of results only led them to more frustration.

The breakthrough came when, supported by the OHI, they realized there were deeply rooted mind-sets across the organization that were holding it back. The leadership team ultimately identified five of these mind-sets—the most important of which was how, historically, the organization had prioritized on-time delivery and product performance, often at the expense of product cost. In practice, engineers felt it was their job to design incredible products, with cost being an output rather than an input. To shift this thinking, the leaders set out to demonstrate that adding value for customers, as well as efficient processes, were just as important as on-time delivery and product performance. They launched a number of highly visible initiatives that gave them the opportunity to role model the appropriate new behavior and highlight the rewards associated with it, then rolled the initiatives out across key parts of the organization—especially in engineering, operations, and supply-chain management.

The company also found simple and low-cost ways to embed the new mind-sets. One of these included giving all employees who attended a health town hall or participated in an initiative a lanyard with a red and green card. The red card shared the company's performance-limiting mind-sets, while the green card shared the performance-accelerating ones it sought to embed. This simple reinforcement made it quickly obvious who had the lanyards and who did not, providing a constant signal for all employees to take part in the program. It also served as a vehicle for providing feedback: in initiative team meetings, employees called out "red" behaviors by holding up their red card, allowing everyone to pause and colleagues to reset their approach. Employees reinforced "green" behavior, too, thereby encouraging others that they were on the right track. Thanks to these steps, the company's current pipeline of products is on track to meet its delivery, performance, *and* cost targets.

## Engage employees at all levels

It requires strong leadership and role modeling for change to take hold quickly. But change is not a top-down exercise. Health improvement happens quickly and sustainably when you drive it top to bottom, bottom to top, and side to side. This is best done by engaging a committed community or network of formal and informal influencers.

Influencers exist at all levels of an organization, ranging from assistants to middle managers. Such people often have an oversized impact on motivating colleagues. They may be rising stars or simply well-liked and enthusiastic team players with a positive attitude. And while in many cases they are not immediately visible to leaders, they can be unearthed via simple survey-based technology that asks employees to identify people who meet the characteristics of an influencer. Companies that map them—the exercise should take no more than one to two weeks—are often surprised by how deep many of these people are within the organization. Such influencers reinforce leadership’s case for change, role model the new mind-sets, collect feedback on what’s going well and what’s not, and excite and engage the front line.

An electronics company in Europe successfully unleashed the power of a group of influencers as part of its drive to become more innovative and customer focused. Employees had been generally upbeat about the transformation, but the company noted that attitudes didn’t change and leaders were struggling to translate their vision into new forms of behavior. Senior leaders therefore identified a minimum of two people in each location or function who were acknowledged and respected by their peers, regardless of their level in the hierarchy, and invited them to help communicate the progress of the transformation, to suggest ways to intervene locally, and to act as role models. They assigned a project manager to coordinate this network of change agents, keeping in touch and checking in with them to facilitate knowledge sharing. Thanks to these influencers’ interventions—sharing information with the front line, taking time to talk to customers and feeding the information back to senior leaders, and calling out colleagues who did not adopt the desired attitudes—substantial behavioral changes began to take hold quickly.

## Get ‘on the pulse’

Organizational health is organic, and, like the human body, it evolves over time. If health is to be nurtured and improved quickly, it needs to be monitored and measured regularly. The days of conducting a survey and then waiting 12 months to remeasure are gone. This “on the pulse” measuring strategy, which

requires fast feedback loops, pinpoints where course corrections are needed. Simple technology tools that put out one question a day provide real-time measurement while reducing survey fatigue. Weekly health huddles with teams offer instant feedback. And integral performance and health reviews reveal how an organization's health is evolving in reaction to the actions taken. Leaders, as architects of the effort to improve organizational health, can then make changes to ensure that the new mind-sets are taking hold. High-performing organizations require leaders who can manage performance and health in concert.


A high-performing European telecom company embarked on a digital transformation only to discover that its highly directive and execution-oriented management approach (a profile that had served it well for decades) was getting in the way of rapid renewal. It was at the bottom of the class in health, according to the OHI, with eight out of nine outcomes in the third or fourth quartile. Recognizing that the company had to be more agile if it was to respond to the industry shifts and technology disruptions, the company's leaders focused initially on four practices aimed at increasing employee motivation and giving the company a new performance edge: rewards and recognition, consequence management, role clarity, and personal ownership.

After three months of using the survey technique of one question a day, the company found that it was making progress across all practices except rewards and recognition. Such a fast feedback loop enabled the team to intervene quickly, celebrate the successes, and revisit its approach to rewards and recognition. As a result, leaders combined their internal learnings with external best practices and redefined their interventions to improve the ways in which they rewarded and recognized high-performing teams and individuals.

A global electronics company took a different approach, introducing a simple survey of no more than ten pertinent questions to check whether critical new practices—such as giving and asking for feedback—were being embedded. The responses, which were shared with and discussed by all the teams, showed which teams were taking the effort seriously. The results of the survey reinforced the right behaviors until they became routine.





Companies often tell us that, while organizational health sounds like a great idea, it doesn't feel like a necessity to achieving their short-term goals. They also worry that it's going to be too much work. Both reactions are misguided. Far from being a distraction, a focused health-improvement plan should actually help companies achieve their short-term goals. And it will not be an added burden—in most cases, working healthy is doing what you're already doing but doing it differently. It's about redefining how to connect, engage, and communicate with employees. It's about sharing a company's vision and mission in a way that inspires employees to act in its best interests. Above all, it's about adopting a more innovative and effective style of leading, executing, and innovating. Working on health works, and it works quickly. 

**Chris Gagnon** is a senior partner in McKinsey's New Jersey office; **Elizabeth John** is an associate partner in the Washington, DC, office; and **Rob Theunissen** is a partner in the Amsterdam office.

The authors wish to acknowledge the contributions of Lili Duan to this article.

Copyright © 2017 McKinsey & Company. All rights reserved.



Illustration by Studio Castelao

# The yin and yang of organizational health

Sustained performance over the long term and successful transformation in the near term require many of the same ingredients.

*by Lili Duan, Rajesh Krishnan, and Brooke Weddle*

**Actions necessary to support** longer-term corporate-performance objectives, on the one hand, and a rapid performance transformation, on the other, might seem at odds. But our research paints a different picture. When coupled with organizational health, long- and short-term performance can become interdependent and complementary—just as yin and yang in Chinese philosophy are inseparable, unable to exist without each other, despite their apparent opposition.

Simply put, healthy organizations are more likely to orient themselves toward the long term. And companies in the midst of a rapid performance transformation boost the odds of sustaining those efforts when they improve their health. The evidence for these propositions is substantial, and it underscores the fundamental link between organizational health and performance.

## **HEALTH AND THE LONG TERM**

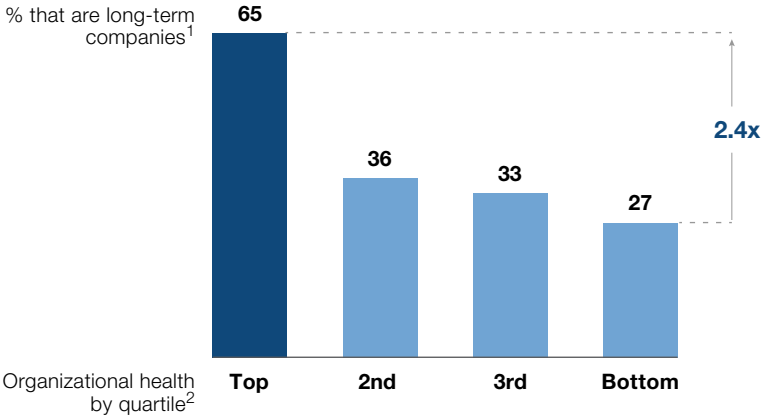
Renewal has always been central to our definition of organizational health, which emphasizes a company's ability to deliver superior financial and operating performance *over the long term*. Our conviction that there is a link between organizational health and a long-term orientation was reinforced recently when we analyzed a set of 51 companies for which we have rich proprietary data on both characteristics.

Our health data come from McKinsey’s Organizational Health Index (OHI), which aggregates the views of employees and managers on a set of nine key organizational dimensions that have proved critical to health. For long-termism, we drew on a metric created by the McKinsey Global Institute and McKinsey’s Strategy and Corporate Finance Practice that differentiates those companies with a long-term orientation from others. Known as the Corporate Horizon Index (CHI), it assesses five factors, including consistency of investment patterns, earnings quality, and the extent to which companies focus on value-creation fundamentals rather than the targets emphasized by Wall Street analysts.

When we compared the 51 companies for which we have both CHI and OHI data, we found a strong, two-way correlation between health and long-term performance (Exhibit 1). On the one hand, the healthiest organizations are the ones that focus more on long-term value creation. On the other hand, companies focusing on long-term performance tend to have higher organizational-health scores. What’s more, companies focusing on long-term value creation outperform their peers on all nine of the key organizational

Exhibit 1

**Companies with a strong long-term orientation were predominantly the healthiest.**



<sup>1</sup>Businesses in McKinsey’s Corporate Horizon Index (CHI) categorized as long or short term by reference to patterns of investment, growth, earnings quality, and earnings management.

<sup>2</sup>McKinsey’s Organizational Health Index (OHI) measures an organization’s performance across 37 different management practices, looking at how behaviors, actions, and processes contribute to 9 dimensions of organizational health. The quartiles are based on the global OHI database with 750 organizations and 1,583,787 individual respondents.

Source: McKinsey analysis of 51 companies for which both CHI and OHI data are available

outcomes that contribute to organizational health. These are early findings; our next step is to identify specific management practices that simultaneously boost health and contribute to a long-term orientation.

## HEALTH AND TRANSFORMATIONS

Transformations, as anyone who has lived through one well knows, are tough, emotional, and even searing experiences. Leaders of these efforts sometimes worry that the decisive, short-term actions needed to improve financial results will undermine their organization's health. However, our work suggests it's quite possible to *improve* organizational health during transformation efforts—helping to achieve and sustain the transformational gains, while further strengthening the fabric of the company.

What's more, by analyzing OHI data from a statistically significant sample of organizations that have worked with McKinsey's Recovery & Transformation Services unit, we have hit on a list of "power" practices, which increase a company's odds of sustaining top-quartile health (Exhibit 2). Companies using them during the first year of the transformation effort improve their health by twice as much as companies that don't. These practices are only one piece of the organizational-health puzzle (for more on the whole puzzle, see "Organizational health: A fast track to performance improvement," on page 77), but especially during the early stages of transformational change, they pack a particular punch, as we will describe in the remainder of this article.

### Set a clear direction

Health in a transformation starts with strategic clarity and a shared vision that has been translated into crisp goals and milestones. The translation process helps the company decide what it will and will not do (including where it will and will not compete). And the broad communication of it to leaders and employees helps them avoid working on initiatives that are not germane to the strategy or that might even send mixed signals about what the strategy is.

One public utility drove strategic clarity by taking its "bankable plan" on a road show, visiting different sites and departments to state the case for change and to discuss ways to realize it. This company created simple communication devices, such as a vision "one-pager," which brought the strategy to life for employees by visually depicting how it would play out across the value chain, including where there would be new investments and what would change. In another example, a mining company produced banners and commitment cards with the performance and health goals of the transformation clearly stated as a visual reminder.

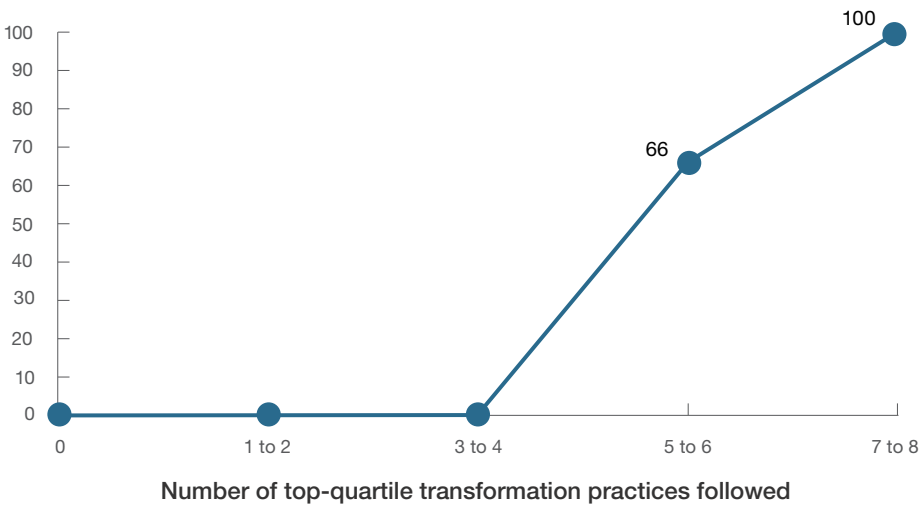
Exhibit 2

**Management practices that jump-start health improvement during transformation efforts ...**

Priority theme	Relevant OHI practice <sup>1</sup>
Setting the direction	<p><b>Strategic clarity</b>—rallies business units, teams, and employees around goals</p> <p><b>Shared vision</b>—enables leaders to align employees across all levels</p>
Providing clarity and meaning	<p><b>Employee involvement</b>—engages people through a consistent and meaningful set of values</p> <p><b>Role clarity</b>—holds employees accountable via clear roles and responsibilities</p>
Sparking ideas and innovation	<p><b>Capturing external ideas</b>—invigorates company’s innovation efforts and best practices with ideas from outside</p> <p><b>Bottom-up innovation</b>—encourages and rewards employees’ initiatives and new ideas</p>
Fostering strong operations	<p><b>Operationally disciplined</b>—monitors adherence to clear behavioral and performance standards</p> <p><b>Supportive leadership</b>—builds a positive environment characterized by care for employees’ welfare</p>

**... also increase a company’s odds of sustaining top-quartile health.**

Probability of top-quartile health, %



<sup>1</sup>OHI = Organizational Health Index; these practices had the greatest improvements in their OHI scores when resurveyed and the highest standardized correlation coefficients.

### Make it meaningful to employees

The companies that made the biggest gains on health in a transformation took the extra, critical step of ensuring that their employees' day-to-day behavior was guided by the company's vision and strategy. This requires thinking through how to match the personal goals of employees with the company's goals—going beyond “cascading” the strategy into key performance indicators and targets to involving employees up front in setting the company's strategic objectives, ensuring that the right talent is in place to achieve those objectives, and making sure that each individual's “stake” in the strategy reflects his or her aspirations.

At an industrial company, the top team made a concerted effort to engage every employee so as to generate ideas that would improve the top and bottom lines. As a result, roughly 1,500 of the more than 5,000-strong workforce owned at least one of the more than 2,000 “transformation” initiatives, with many more owning important activities that were part of these initiatives.

### Spark ideas and innovation

Organizational health improves during a transformation when companies embrace fresh ideas. Sometimes this means looking outside for best practices to help innovate and invigorate the business. Leaders should rightly be wary of the cookie-cutter approach, but there are proven ways to increase the flow of ideas and challenge incremental thinking. The industrial company mentioned above consciously set out to address the “not invented here” syndrome that had prevailed in the organization. Employees were encouraged to start working more closely with customers, for example, to



enhance support services, and similarly with vendors to change product specifications to drive higher utilization in their processes. It even tapped recent hires to find out how competitors managed their supply chain, improving importing and exporting processes in emerging markets. These efforts sparked fresh ideas and created a deep sense of ownership among employees. Encouraging “bottom-up” innovation also generates such ownership—and it, too, showed up in our data as a transformation accelerant.

### **Build strong operational discipline, in a supportive way**

Organizations seldom get fit without strong operational discipline. It’s important to start at the top, with explicit targets for operating performance that are then replicated at other levels. Operational discipline requires the communication of clear standards of work so that employees understand how to achieve goals and metrics consistently. This also helps leaders ensure that the day-to-day work complies with those standards, and it allows leaders to emphasize the core values of efficiency and productivity. Maintaining operational discipline puts a premium on another management practice: supportive leadership, which includes creating a sense of teamwork and mutual support throughout the organization and demonstrating concern for the welfare of employees.

Boosting operational discipline sometimes demands financial incentives or recognition that rewards new forms of behavior. A consumer-goods company in Asia-Pacific set aside a discretionary fund for employees who embodied the new way of working and who went above and beyond their routine jobs

**Our work suggests it’s quite possible to improve organizational health during transformation efforts—helping to achieve and sustain the transformational gains, while further strengthening the fabric of the company.**



to help the company achieve the objectives of the transformation. Managers also formally recognized this extra effort, thanking fellow colleagues publicly on a near-daily basis and following up constructively with employees who were struggling. This approach helped to sustain momentum long after the initial impetus had begun to wane.

---

The common thread running through these findings and examples is sustainability. Healthy organizations are better at sustaining themselves over the long haul. And transformations are more sustainable when companies prioritize improving their organizational health—which, as our research suggests, isn't just desirable, it's quite feasible. By enhancing sustainability, stronger organizational health connects the yin of long-termism with the yang of aggressive performance improvement, making it a worthy goal for any leader worried about his or her legacy. 

**Lili Duan** is the organizational science manager of McKinsey OrgSolutions and is based in McKinsey's Washington, DC, office; **Rajesh Krishnan** is a partner in the New York office; and **Brooke Weddle** is a senior solution leader of OrgSolutions and an associate partner in the Minneapolis office.

The authors would like to thank Oliver Bladdek, Dominik Deja, Tim Koller, Randy Lim, and Jack McGinn for their contributions to this article.

Copyright © 2017 McKinsey & Company. All rights reserved.



# Wellness at work: The promise and pitfalls

It takes more than a discounted health-club membership to move the needle on employee well-being.

**When Bob Chapman**, the CEO of global engineering company Barry-Wehmiller, talks about the impact that organizations have on their people, he gets emotional: “The person you report to at work can be more important to your health than your family doctor. We want to send people home safe, healthy, and fulfilled—all three dimensions.” Employers are in a unique position to be a good influence on health and general well-being. After all, working people spend more of their waking time on the job than anywhere else.

But what does it take to improve employee wellness? Is it, in fact, the business of business to do so? And can (or should) we measure the return? Members of the Consortium for Advancing Adult Learning & Development (CAALD), a group of learning authorities whose members include researchers, corporate and not-for-profit leaders, and McKinsey experts, recently debated these issues at its second annual meeting, in Boston. Their discussion suggests that wellness and work remain uneasy bedfellows, but our understanding of what it takes to make progress has grown, and so should the willingness of leaders to invest in their people at a time when the emerging workplace is confronting them with stress-inducing change.

## WHAT AILS WELLNESS?

**Ashley Williams**, deputy chief learning officer, McKinsey & Company: We all know that people are happier and more productive if they feel healthy.

Employers are in a unique position to be a good influence on health. But many workplace health and well-being programs are not that effective.

**Ramesh Srinivasan**, senior partner, McKinsey & Company: There haven't been enough at-scale experiments. People recognize that they can improve themselves by investing in fitness and diet and mindfulness. But to take it to the level of becoming a more productive employee or a better leader? The data is spotty.

**David Rock**, director, NeuroLeadership Institute: There's not a lot of good, independently validated science around what works, what actually creates wellness. There are baseline factors, such as reasonable food, access to exercise, and things like that. After that, the question becomes, "Where do you get the biggest bang for your buck?" And you have to motivate very individually. Some people are deeply motivated by autonomy. For other people, that's a total threat.

## BEYOND SLEEP AND EXERCISE

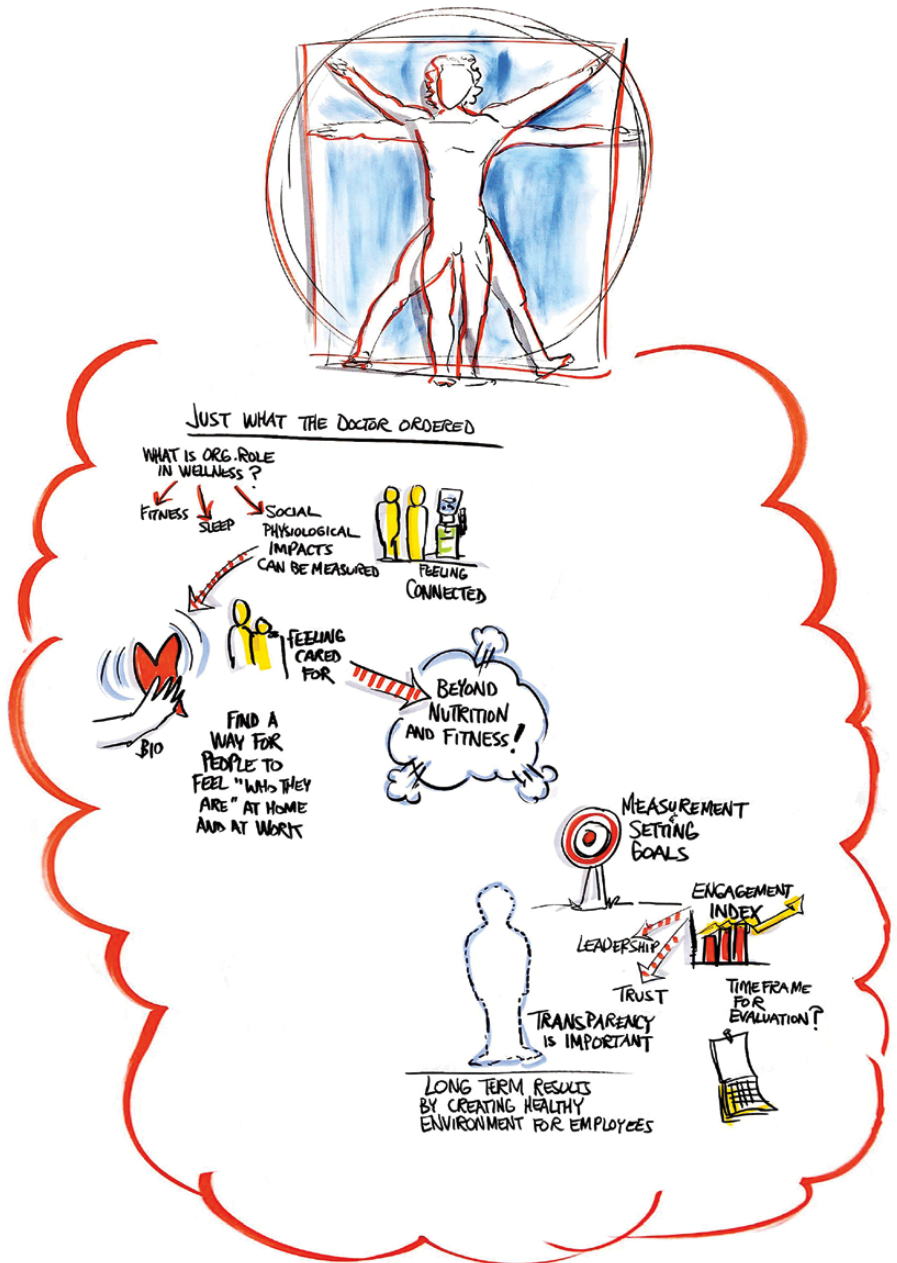
**Scott Taylor**, associate professor, Babson College: Some organizations are offering a portfolio of things because they see their greatest asset as their employees, and they believe in investing in them. The emerging research we have says that when you look at people not as objects but as human beings, they respond with higher performance. Engagement goes up, and not just engagement, but passion.

Up to 75 percent of people say that the most stressful part of their job is their immediate supervisor. I don't know too many managers who wake up and say, "I want to make life miserable for my people." Even so, we treat people at work in ways we'd never treat our family and friends. So the issue may not be that people need to learn how to care, it's that people need to learn how to care at work.

**David Rock**: Connecting people socially gets a much bigger bang for the company buck than trying to help people eat better. That's because social connectivity is deeply rewarding and activates a really nice oxytocin response. Most people's social resources are dangerously low, however. They don't have the tribe around them that their body craves. The feeling of loneliness, of isolation, is actually a pain response, the same as physical pain. In fact, the lack of social connection is twice as dangerous as smoking as a health factor. It's also more important than diet. So if you want to put in food stations with healthy food, that's great. But why not put in a social-connection station,

too—a work-free space where you're allowed to just hang out? We tend to think about what's easier to think about, not what's right to think about. So we go with food and exercise and those things. But actually, the intangible may be more critical.

## Fixing what ails wellness programs



Graphic illustrations created by Leah Silverman, Crowley & Company

**Bob Chapman**, chairman and CEO, Barry-Wehmiller: The biggest cause of chronic illness is stress, and the biggest cause of stress is work. Stress is a machinist who walks in every day, gets ten things right and never hears a word, and gets one thing wrong and has his ass chewed out. Then he goes home and treats his family like he has been treated. Organizational stress is caused by people feeling that they're not appreciated. If we simply cared about the people whose lives we are privileged to lead, and sent them home each night feeling valued, we could have much lower health costs. When 88 percent of people do not feel they're part of an organization that cares about them, we are manufacturing the healthcare crisis. And then we go to the byproduct, which is pills and medications and hospital visits.

## IS THERE A BUSINESS CASE FOR WELLNESS?

**Ramesh Srinivasan**: I do feel you can think about purpose and performance with equal weight. They don't need to be contradictory, as long as you take a longer-term view. At McKinsey, we are seeing that clients look at our impact not just in terms of performance but also in terms of the experience with us during a project. If our people are not truly excited, and if they haven't slept well or eaten well or exercised well, if they're nonmindful, clients are not going to have a great experience.

**Bob Chapman**: A senior executive at a big car company asked me what kind of return we got for this investment in culture. I asked, "Are you kidding me? Did you just ask me what kind of financial return I get for caring?" And he said, "At my company, we are extremely numeric." And I said, "That's pitiful." Then he told me that only 30 percent of the people would recommend a job there to a friend or family member. No kidding.


“Organizational stress is caused by people feeling that they're not appreciated. If we simply cared about the people whose lives we are privileged to lead, and send them home each night feeling valued, we could have much lower health costs.”

**Richard Boyatzis**, professor, Case Western Reserve University: There is research that says goal setting is not all that healthy—that every time we measure something, we go into a part of our brain that dehumanizes and objectifies things. On the other hand, can you imagine what it would be like to try to run an organization without setting goals? You can't plan, you can't allocate resources. We have to come to a place where we know how to use numbers and identify goals without objectifying people.

## NO QUICK FIXES

**Scott Taylor:** In the late 1990s, I was working with a company that was losing people and market share to a competitor that had a reputation as a great place to work. The CEO sent a memo to the managers that said, “We're sick and tired of this company. We are now going to be the happy company.” It was mandated happiness. I literally ripped up the memo and threw it away.

**Richard Boyatzis:** The fact is that we have to do a bunch of these things at the same time, not sequentially. Yes, we have to work on people's physical health and their psychological well-being. But at the same time, if we don't improve people's relationships at work, we're putting Band-Aids on hemorrhages.

**Bob Chapman:** You can't address wellness with exercise programs and then treat people like crap. Until organizations do a better job of letting their people know they are valued and cared for, we won't even begin to move the needle on team-member well-being. 

Copyright © 2017 McKinsey & Company. All rights reserved.



Illustration by Daniel Bejer



# Memo to the CEO: Are you the source of workplace dysfunction?

Rudeness and bullying are rife, says Stanford professor Bob Sutton. Wise leaders figure out how to fix their teams and organizations; and they start by taking a long look in the mirror.

*by Robert I. Sutton*

**There are a lot of jerks** in the workplace. I should know. Over the last decade, since I began digging into the effects of incivility, thousands of people have asked me for advice about dealing with bullying bosses, board members, clients, and colleagues. I have, for example, been sent (and saved) some 8,000 emails that detail the range of such disrespect and intimidation, and the resulting distress and destruction. And I've tracked pertinent peer-reviewed research, which is growing like crazy. For example, a Google Scholar search on abusive supervision from 2008 to 2016 returns 5,670 scholarly articles and books; rudeness generates 16,300 citations—and bullying a whopping 139,000. My interactions with the targets of such abuse, plus that growing pile of research, prompted me to return to the subject in a new book, *The Asshole Survival Guide: How to Deal with People Who Treat You Like Dirt* (Houghton Mifflin Harcourt, September 2017).

The reasons for the persistence and spread of bad behavior are legion: a global economy, with its demands for rapid decisions and around-the-clock interactions, overburdens leaders, employees, suppliers, and customers. In this world, where email, texting, and social media replace face-to-face conversation and the compassion triggered by eye contact, too many jerks feel

unfettered by empathy, guilt, and old-fashioned civility. Meantime, some rising executives believe that treating people badly is a path to personal success—a conclusion bolstered by journalists and a few academics, who celebrate demeaning and disrespectful leaders. One CEO I interviewed was worried he wasn't enough like the late Steve Jobs and that his career and start-up would suffer because he was calm and treated people with dignity.

Bullying bosses impose costs on people and organizations that are manifold—and often hidden. Hundreds of experiments show that encounters with rude, insulting, and demeaning people undermine others' performance, including their decision-making skills, productivity, creativity, and willingness to work harder and help coworkers. As a senior leader, your job is to build an organization where jerks don't thrive. In my writings a decade ago, and in the pages of *McKinsey Quarterly*,<sup>1</sup> I put forth some principles on how companies can build a civilized workplace—adopting a “no-asshole rule,” as I called it—and how they need to enforce the standards, weave them into hiring and firing policies, and apply them to customers and clients, with the goal of creating a culture of small decencies.

For leaders, there's a more personal dimension that should be in play, as well: the recognition that we're all capable of being part of the problem. The risks of turning insensitive and unkind to others increase as you become more senior. Much research shows that being and feeling powerful provokes people to focus more on their own needs and wants, and to become oblivious to others' needs and feelings.<sup>2</sup> And as we all know, sh\*t rolls downhill. Take the pompous and pushy board member labeled “the idea man” by one exasperated Silicon Valley executive team. This director constantly proposed new ideas on everything from business strategies to HR practices to tweaks and massive changes in products. In the CEO's view, most of the ideas were terrible, yet the director placed constant demands on managers, creating unnecessary distractions and raising stress levels across the executive suite. This CEO devoted big chunks of time to deflecting and arguing with the board bully to protect his team members. That bolstered their well-being and contributed to stronger company performance.

The board member was part of the problem, but that CEO wasn't. He avoided falling prey to power poisoning, took it upon himself to shield his people from the director's antics, and treated them with respect. The earlier leaders can develop this perspective on power, the easier it is to sustain throughout their careers. A prestigious surgeon wrote me about how when he was a

---

<sup>1</sup> See Robert Sutton, “Building the civilized workplace,” *McKinsey Quarterly*, May 2007, McKinsey.com.

<sup>2</sup> For more, see “Good boss, bad times,” *McKinsey Quarterly*, May 2009, McKinsey.com.

surgical resident at an elite medical school some 20 years earlier, he and his colleagues were subject to and witnessed episodes of unbelievable mental cruelty on a daily basis by the attending physicians (who served as their superiors and mentors). They developed a little ritual that would help them avoid becoming leaders who behaved like their bad role models. Every Friday, they would meet for a few beers at a local bar after an arduous workweek. The highlight of the happy hour was nominating and electing the “attending-a-hole of the week,” or AAOTW. All aggrieved individuals would recount their episode with an attending physician who would merit their nomination as the jerk of the week. The group voted, and the “winner’s” name was entered into a leather-bound journal book they kept, along with a synopsis of the incident.

The surgeon explained that the residents learned how destructive bullying behavior was and vowed not to imitate such pathological behavior. Now, some 20 years later, those former residents all hold prestigious positions; many are program chairs and department chairs—and, he reported, “I am proud to say that everybody who was a part of that Friday group runs their training programs with an unwritten ‘no-asshole’ rule.”

The upshot is that being a respectful, civilized leader is a personal philosophy that can shape how you view life, the actions you take, and how you judge yourself—and provide a framework for leading your team and organization. If you want to be part of the solution rather than part of the problem, it helps to keep a few lessons in mind about how to live this philosophy despite the hubbub and hassles of executive life and in light of our all-too-human flaws and biases.



## TAKE A LOOK IN THE MIRROR—ARE YOU PART OF THE PROBLEM?

We human beings have a penchant for denial and delusion. We're often clueless about our flaws, and when we do admit shortcomings, we underestimate their severity and negative impact. Nobel Prize winner Daniel Kahneman believes the curse of overconfidence is the most destructive of human biases. We are prone to developing distorted and overly positive self-images—and to deny, disregard, or never notice negative information about ourselves. For most of us, coming to grips with when we act like jerks, or encourage others to do so, requires overcoming some mighty potent predilections.

Consider that more than 50 percent of Americans say they have experienced or witnessed persistent bullying, but less than 1 percent admit to doing it. Those numbers don't add up; a lot of jerks aren't confessing (or even aware of) their sins. As Columbia University psychologist Heidi Grant Halvorson documents, the key to self-awareness isn't found inside our heads; it's in discovering how others see us—even when it hurts.<sup>3</sup>

The clueless (though well-meaning) CEO of one company I know was horrified when two female executive vice presidents pulled him aside and admonished him after a meeting. The women, who kept careful tallies, informed the CEO that he had interrupted each of them at least six times, but never interrupted the four male executive vice presidents. Stunned and embarrassed, the CEO begged for forgiveness and asked them to keep tracking his interruptions, vowing to halt his sexist ways. He didn't want to feel that self-loathing again.

Things get worse when leaders are unwilling to hear the truth: you can reduce your risk of treating others badly by seeking out and listening to trusted truth tellers, which can prompt reflection on your past behavior that helps identify circumstances that bring out the worst in you. My department chair at Stanford played the truth teller for me after I sent a blistering email to a student who was irritating fellow students and made irrelevant comments in class. My chair told me no faculty member should treat a student that way and demanded that I apologize. That conversation stung. But I knew he was right. I apologized and have become more disciplined about having face-to-face conversations with disruptive students.

The bigger the gap between how we see ourselves and how others see us, the worse our relationships tend to get, so there is a big payoff for coming to grips with how others perceive us. To get there, however, you need people who know you and who won't sugarcoat the truth, and to seek and accept candid

---

<sup>3</sup> Heidi Grant Halvorson, *No One Understands You and What to Do about It*, Boston, MA: Harvard Business Review Press, 2015.

feedback from them. When they give you bad news, thank them and don't lash out at them or wallow in self-pity.

A tough former Silicon Valley CEO told me a story about how his team made him the butt of a joke, and how it ultimately reduced tension on the team, brought it closer together, and taught him that he needed to tune down his hostility. For some reason, many of the insults he aimed at senior executives involved unfavorable comparisons to vegetables, such as “you are dumber than a head of lettuce” or “the average zucchini could figure this out.” His team cooked up some payback. One day, when the CEO arrived at the conference room for a meeting, instead of seeing his team members in their usual places at the table, each was replaced by a head of lettuce, complete with eyes, smiles, and, in some cases, hats and sunglasses. There was even a head of lettuce at the CEO's place. The pushback worked. The CEO admitted he had often been too hard on his team during the company's tough period of change and growth. The wild ride continued, but the team members tolerated the leader's sometimes rude humor because they had the confidence to throw it back. The give-and-take brought them closer and made the CEO mindful of how his words and deeds could bruise people's feelings.

## A FIVE-POINT ACTION PLAN

Dysfunctional behavior often happens in the moment, against our better nature. Few of us want to be jerks, and most leaders care about the people and institutions in their charge. Here are five tips for CEOs and other top executives who strive to treat others with dignity and respect.

**1. Beware of contagion.** If you are around a-holes, you are likely to catch the disease because bad behavior is so contagious. Trevor Foulk and his colleagues have demonstrated how rudeness spreads like a common cold. Research subjects who encountered even one rude partner in simulated negotiations were prone to become carriers and to be rude during their next negotiation, even with a different partner.<sup>4</sup>

If you are leading a *Lord of the Flies* company, where cruelty, backstabbing, and selfishness abound, you are likely to start behaving like that, too. Think about whether that is the kind of person you want to be, the effects on you and those you care about, and possible remedies (including making a clean getaway). A project executive wrote me about how at his last company, “jerks

---

<sup>4</sup> Trevor Foulk, Andrew Woolum, and Amir Erez, “Catching rudeness is like catching a cold: The contagion effects of low-intensity negative behaviors,” *Journal of Applied Psychology*, 2016, Volume 101, Number 1, pp. 50–67.

begot jerks,” and senior management’s most favored underlings were as snide and arrogant as their bosses and routinely lashed out at junior employees and used them as sacrificial lambs to advance their personal agendas. The executive confessed, “It brought out the a-hole in me, and I was frequently irate, overly forceful, and overbearing because it seemed to be the only way to get things done.” The bad dreams, stress, and frustration drove this executive to quit and move to a small company with a strict no-jerks policy.

*2. Watch how you use your influence.* Wielding power over others increases the risk you’ll start treating others like dirt. Regardless of how kindly, cooperatively, and empathetically you’ve acted in the past, power can cause you to have less empathy, to exploit others more, to focus on your own needs, to be rude and disrespectful, and to act like the rules don’t apply to you.<sup>5</sup>

One antidote is practicing humility, giving credit to less powerful people, deferring to those who are less prestigious or wealthy than you, and doing them favors. Tim Brown, CEO of the global design firm IDEO, understands the principle. A few years back, when I visited the IDEO offices in Palo Alto and went to the floor where senior leaders worked, I found Brown sitting in the front, where a receptionist would be in most workplaces. There was no gatekeeper to keep colleagues or random visitors like me from walking up and interrupting him. Brown had a private office the last time I had visited, so I asked why he wasn’t in it. He explained he had abandoned the office to be in a spot that made him “the most public person on the floor.” Most IDEO senior leaders had moved out of offices, too. He added that when executives were out in the open, there were more casual exchanges and fewer barriers. Brown believed his job was “to get to know the people and how they work, and I can’t learn much sitting in a private office.” The lesson isn’t that every executive should move out of his or her office. Rather, it’s that finding ways to reduce the power distance between you and others decreases your employees’ stress, increases their contributions, and changes how you see yourself in ways that can prevent you from acting like a selfish bully.

Remember, too, that just because you are the boss doesn’t mean you have more power (or insight) than your reports. A veteran CEO I know does everything possible to hire and encourage “blunt no-BS” employees who confront him

---

<sup>5</sup> Dacher Keltner, *The Power Paradox: How We Gain and Lose Influence*, New York, NY: Penguin Press, 2016.

## Bullying bosses impose costs on people and organizations that are manifold—and often hidden . . . As a senior leader, your job is to build an organization where jerks don't thrive.

with strong opinions and don't hesitate to critique his conclusions. The CEO emphasizes that so long as employees aren't selfish or crazy, he doesn't mind when such conversations get heated. Problems are much easier to tackle when facts and associated feelings are put on the table—as long as there is mutual respect. In her years as CEO of Xerox, Anne Mulcahy embraced a similar strategy, cultivating internal critics and “building a team that could counter some of my own weaknesses.” In an interview with the *Quarterly*,<sup>6</sup> Mulcahy described how she learned to groom internal critics who pushed back and had the courage to give her blunt feedback.

*3. Understand the risks of overload . . . and technology addiction.* Being in a rush, having too much to do, and having too many distractions can turn even the most civilized person into a jerk—a CEO's workload makes him or her especially susceptible to this malady. According to research by Christine Porath, half of those who say they have engaged in uncivilized behavior at work also say they are overloaded and have no time to be nice.<sup>7</sup> When I talk to leaders about overload, meetings are among the primary culprits. Senior executives at Dropbox attacked the problem with an “Armeetingeddon” initiative: IT staff went into each employee's online calendar and deleted virtually all upcoming meetings except those with customers. This “meeting subtraction” forced employees to think about the overload they inflicted on themselves and others. As they manually reentered each upcoming meeting, they were pressed to ask themselves if it could be scheduled less often, be shorter, involve fewer people, or was unnecessary.

---

<sup>6</sup> See “How we do it: Three executives reflect on strategic decision making,” *McKinsey Quarterly*, March 2010, McKinsey.com.

<sup>7</sup> See Christine Porath, “No time to be nice at work,” *New York Times*, June 19, 2015, nytimes.com.

Multitasking, checking emails, and using smartphones probably contribute to overload even more than unnecessary meetings. These modern necessities (and addictions) can cause us to be curt, treat others as if they were invisible, and devote too little attention to our colleagues, friends, and family. When it comes to overcoming such electronic temptations, leaders need to exercise self-control and nudge others to do likewise. When Chris Fry was senior vice president of engineering at Twitter in 2014, he found that senior team members looking at smartphones during meetings were undermining communication and civility. Fry implemented a new policy: team members were required to give phones to his executive assistant for safekeeping during meetings.

*4. When you behave like a jerk, apologize . . . but do it right.* A well-crafted apology can help reduce your target's pain, repair your relationships, improve your reputation, and provoke soul-searching that enables you to learn from your transgressions. A good and effective apology acknowledges fault, accepts full responsibility for what happened, tries to explain why it happened, and commits you to personal change. One caveat: if you find yourself apologizing again and again, it's time to stop. It's probably a sign that you are using apologies as a substitute for learning and toning down your act. And apologizing and making amends to others isn't something you ought to delegate.

A worst practice is when leaders rely on handlers to manage the fallout from their demeaning and disrespectful actions. Peter Frost describes a toxic senior executive who brought the same chief lieutenant with him to a series of roles over 15 years.<sup>8</sup> In most meetings, this boss attacked people with angry tirades. The handler would then try to smooth things over, going from office to office to explain this jerk's "real" opinions and tell people he wasn't as angry and spiteful as he seemed. This handler protected the boss—but not other people or the company—from suffering the consequences of his mean-spirited ways.

*5. Do a little time travel.* This mind trick is among my favorites for bringing out the best, and stifling the worst, in leaders. It entails deciding what to do today based on how you want to feel about yourself when you look back from the future. As one of my correspondents noted, "When they are on their deathbed, no one ever says, 'I wish I had been meaner.'" One recovering workplace bully wrote me that the process is similar to that faced by a

---

<sup>8</sup> Peter J. Frost, *Toxic Emotions at Work: How Compassionate Managers Handle Pain and Conflict*, Boston, MA: Harvard Business School Press, 2003.



recovering alcoholic. He is ashamed of his past behavior, but when he looks back on his life, he wants to feel proud of how he treated others since his recovery commenced. Framing his life from the future helps him—one day at a time—treat those around him in more civilized ways.

I had a revealing conversation with Pixar’s founder and president, Ed Catmull, about how a bully can change for the better. We talked about the widespread belief that Steve Jobs succeeded, in part, because he was overbearing, temperamental, and insensitive—the myth that enticed the young CEO described earlier to wonder whether he ought to behave the same way. Catmull worked closely with Steve Jobs for 25 years. He agreed that Jobs had a well-earned reputation “for poor behavior early in his career.” Catmull emphasized, however, that many writers, biographers, and filmmakers miss a crucial part of the story: that Jobs changed for the better after he was “kicked out” of Apple and suffered a slew of setbacks at his high-end computer company, NeXT, and at Pixar in the early years.

As Catmull puts it: “Jobs wandered in the wilderness for a decade. In the course of working through and understanding these failures, and then succeeding at Pixar, Jobs changed. He became more empathetic, a better listener, a better leader, a better partner.” Catmull says that the more thoughtful and caring Steve Jobs was the one who created the incredibly successful Apple. Jobs remained a notoriously tough negotiator, a challenging person to argue with, and a perfectionist. But Catmull observes that Jobs’s greatest successes came only after he abandoned the notorious mistreatment of others that plagued his early years. (Q)

**Robert I. Sutton** is a professor of management science and engineering at the Stanford School of Engineering, where he is cofounder of the Stanford Technology Ventures Program and Stanford Design Institute. This article is adapted from his new book, *The Asshole Survival Guide: How to Deal with People Who Treat You Like Dirt* (Houghton Mifflin Harcourt, September 2017).

Copyright © 2017 McKinsey & Company. All rights reserved.



# Safe enough to try: An interview with Zappos CEO Tony Hsieh

Organizations are more likely to innovate and thrive when they unleash the potential of individuals and the power of self-organizing teams, says the online retailer's CEO.

**Tony Hsieh**, the CEO of Zappos for more than 17 years, is not afraid to create “a little weirdness.” In fact, that is among Zappos's core values. The company that got its start selling shoes online, became known for its near-fanatical devotion from customers, and was acquired in 2009 by Amazon has more recently been pushing the envelope in another area: its organization. Four years ago, Zappos kicked off its high-profile adoption of holacracy, an organizational model that distributes decision-making authority in self-organizing circles, made up of employees who hold roles (often more than one at a time) rather than job descriptions, with each circle arranged around a purpose statement. These experimental approaches, Hsieh hopes, will enable every employee to act as a “human sensor,” and the organization as a whole to be more adaptable, innovative, and resilient. While Hsieh doesn't claim Zappos is an easily emulated model, the company has become a thought-provoking test bed for organizational ideas whose ultimate impact will become clearer in the future.

In May 2017, Hsieh sat down with McKinsey senior partners Aaron De Smet and Chris Gagnon to share his views on organizational values, purpose, and decision making; the importance of the individual; and the potential for self-organization to generate innovation. The interview, which took place on the Zappos corporate

campus, in Las Vegas, Nevada, gave Hsieh an opportunity to get beyond the headlines as he described the philosophy behind Zappos's evolving organization.

**The Quarterly:** *What does holacracy mean for Zappos?*

**Tony Hsieh:** People can get caught up a little too much in the technical details of what holacracy is or what tools we're using. We've always encouraged employees to move around to find the intersection of what they are passionate about, what they are good at, and what adds value to the company, even in the "old days." For me personally, calling it "holacracy" was more a way of codifying or making explicit what was already implicit in our culture. We shouldn't have to be dependent on a benevolent manager or CEO to allow employees to move around within the organization, because that's a single point of failure. Our org chart is available in real-time online and changes probably 50 times a day, and every one of our 1,500 employees can transparently view what every employee's purposes and accountabilities are. We have self-organized governance methods and meetings that happen on a regular basis, and it's all browsable and updateable online, along with, occasionally, policy updates—all of which enables any employee to contribute to the evolving structure of the organization. So it's not so much about "holacracy" as it is about "self-organization."

**The Quarterly:** *If a company is self-organizing, and being dependent on a CEO can be considered a point of failure, how does the company keep its bearings?*

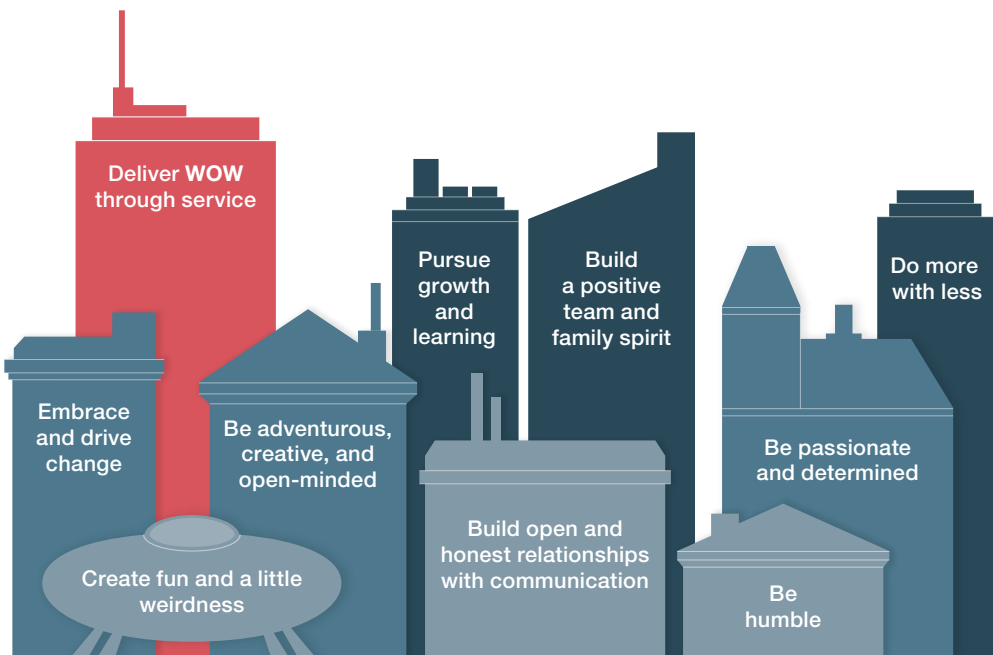
**Tony Hsieh:** Imagine a greenhouse with lots of plants, and each plant represents an employee. Maybe at a typical company, the CEO is the tallest, strongest plant that the other plants aspire to one day become. That's not how I think of my role. Instead, I think of my role as the architect of the greenhouse, and to help figure out the right conditions within the greenhouse to enable all of the other plants to flourish and thrive.

Cities are another example of self-organization. Cities are the man-made organizations that have best stood the test of time. Cities last much longer than companies. Cities are resilient. Cities are adaptable. And cities aren't hierarchical the way most companies are. I read somewhere that all of Manhattan has literally three days of food supply. But there's no central food planner for Manhattan. Instead, you've got consumers and businesses "selfishly" consuming food in a self-organized manner, which creates opportunities for suppliers and so on. And that self-organized system works if there is a natural disaster; a bridge can go out and Manhattan still doesn't run out of food.

Not only do cities stand the test of time, there's plenty of evidence they actually scale in terms of productivity and innovation. One interesting statistic is that whenever the size of a city doubles, innovation or productivity per resident increases 15 percent. But in companies you get the opposite effect. As companies get bigger, they usually get more bureaucratic and less innovative per employee.

The mayor of a city doesn't tell its residents what to do or where to live; there is a certain infrastructure that a city must provide, such as the grid: water, power, and sewage. And there are certain basic laws that a city enforces. But for the most part, what happens when a city grows and innovates is a result of the self-organization that happens with a city's residents, businesses, and other organizations.

**Zappos strives to be like a city,  
where decentralized decision makers  
are united by **common values**.**



*The Quarterly: What are the key principles of Zappos?*

**Tony Hsieh:** The way I think about it, there are three different pillars, or dimensions, that are foundational to us at Zappos. And we need to make sure that all are working well.

The first is culture and values. Now, we're not saying that other companies should adopt our values. One of the interesting things I've learned from the research is that it actually doesn't matter what your values are. What matters is that you have them and you commit to them and align the entire organization around them. That means you're willing to hire and fire based on them. Most large companies have things called core values or guiding principles and so on. But I think what employees find at those companies is that the principles read like PR statements. You see them on the company's website, and maybe on the lobby wall in reception, but then no one really pays attention to them.

We have ten core values that serve as a formalized definition of our culture. And these ten were crowdsourced—I asked our employees what our values should be. Then we went back and forth for about a year and came up with our ten. They've become part of our culture. They're part of our employees' everyday language. Our core values actually just come up naturally in everyday conversation. And once they become part of the language, they become part of the mind-set. So that's our first pillar: values alignment.

The second pillar is purpose. Both on the individual level and on the organizational level, we are very explicit about purpose statements. And one of the things that holacracy enables is a hierarchy of purpose statements. There's the purpose of the company, which for us is "To Live and Deliver WOW." We have something we refer to as the general company circle [GCC] that holds the company purpose statement. And within that circle, there are subcircles and roles, and we cascade down from there into a hierarchy of more sub-circles and roles. But you can pick any role anywhere in the hierarchy, and there's an entire set of purpose statements that all link ultimately back up to the company purpose. The purpose statements are something that we do think about occasionally, but I'd like us to get to the point where our purpose hierarchy is as top of mind as our core values. Right now, purpose statements aren't part of our everyday language, at least the way our core values are. I think that's a big opportunity for us.

The third pillar I'll call "market-based dynamics." Just like in a city, it's important to have a true market, to break up monopolies, and to have different internal teams become customers of each other. We're building an internal currency as well as the internal tools and systems to support an underlying infrastructure to allow for multiple participants, fast feedback loops, and things like crowdsourced participation. Imagine the equivalent of, say, the stock market, but for inventory purchasing. What if employees or teams could bet on inventory the same way people and organizations bet on the stock market in the real world today?

**The Quarterly:** *So you're trying to unleash the power of the organization as a market-based system, and also the potential of each person who makes up that market.*

**Tony Hsieh:** Yes. One of the learnings we've had about self-organization and self-management is that it's not just a systems change; it's also a personal journey for each individual employee. Self-organization and self-management is about the entrepreneurial mind-set. A study was done several years ago that looked at what separated the great entrepreneurs from the mediocre ones. They found that the great entrepreneurs highly overindex for three characteristics: first, being comfortable with ambiguity; second, having a strong sense of curiosity; and third—not as high, but still overindexed—was emotional intelligence. And I think under self-organization, these three characteristics are even more important for us to hire for at Zappos.

A market is able to incorporate the intelligence of all the individual players and get feedback much faster than most other feedback mechanisms. I don't watch a lot of sports—except the Super Bowl—but even if I don't know who's playing, I do know that the sports-betting market, more than any other

“We've always encouraged employees to move around to find the intersection of what they are passionate about, what they are good at, and what adds value to the company.”

# TONY HSIEH

---

## Vital statistics

Born in 1973 in Illinois

## Education

Received an AB in computer science in 1995 from Harvard University

## Career highlights

Cofounded LinkExchange, an online advertising network, in 1996 and sold the company to Microsoft in 1999 for \$265 million

Began investing in the company that became Zappos in 1999, became the company's CEO in 2000, and sold Zappos to Amazon in 2009 for \$1.2 billion

Established the Downtown Project, a \$350 million effort to revitalize downtown Las Vegas near Zappos's corporate headquarters, in 2012

---

method that I'm aware of, does an amazing job of telling you what the right odds are. It does that by using the collective intelligence of the group.

To harness collective intelligence, we think of every single employee as a human sensor. Everyone senses different things, and you want a way to process all of that input. An airplane is one analogy. There are all of these different sensors. Some sensors, like the altimeter, are probably more important than others, but you want to be aware of all of them. Even if the altimeter looks fine, and most of the other sensors look fine, that doesn't mean it's OK to ignore the low-voltage warning light when it turns on. You don't allow the other sensors to outvote the low-voltage warning light and ignore it, yet the analogous thing happens all the time in organizations.

Some intern might say, "Hey, there's this Instagram thing we should pay attention to," but no one senior has heard of it, so the suggestion gets ignored. The structure that we have enables that intern—and basically all of our employees, if you think of them as human sensors—to actually do something about it, versus just getting outvoted. The idea is that everyone is a human sensor capable of sensing tensions, and it's important to note that a tension is not necessarily a bad thing. It's just the gap between the way things are and what's possible. Zappos is currently at 1,500 employees; everyone is able to actually sense tensions, and collectively our system is designed to process them. When you do that, you'll notice new tensions, and if everyone consistently does that, that's going to move the organization forward.

*The Quarterly: How does this work in practice?*

**Tony Hsieh:** In our organization, your tensions are based on the purpose statements for the roles that you hold or the circles you're in. And employees can belong to multiple circles. Our 1,500 employees right now are in about 500 circles, and if you want to be kept updated on what's going on in the circle meetings, you can subscribe to any of them, all of them, or just the ten or so circles that you're interested in. For example, let's say there's a circle that was originally focused on our campus, and the original purpose statement of the campus team was to have an amazing experience for employees. Then, someone else can bring up, "Well, as we've evolved over the years, we really want to be inclusive of the surrounding community as well." They can modify the purpose of the campus circle so that it's an amazing experience for employees, vendors, or someone else in our community, and that experience will help elevate the Zappos brand. And then, someone else can say, "Well, what about this other thing that you've forgotten?" So that can get added to the purpose statement or subtracted from it over time.

There are also elements that are similar to the Hollywood model. Certain people get more inspired working around other people and just kind of play off of each other's ideas. They work on projects, and then people who enjoyed working with each other decide to work together on the next project. And then, over time, what evolves is a dream team that works on the best movies.

*The Quarterly: It sounds like a key element is tapping into the dynamics of how people work together.*

**Tony Hsieh:** One term we use is "collisions." It's about how often you run into different, diverse people that you might have a random conversation with and ultimately end up collaborating with. We think about it in terms of density, as well. The average density of office space in the US is about 300 square feet per employee—including hallways, conference rooms, et cetera. We're at about 100 square feet per employee here at Zappos, and the reason is because research has shown that if you sit twice as far away from someone in an office environment, you don't see them half as often—you see them half as often squared, so a quarter as often.

It's also important to understand that the best-performing teams are not created by simply putting together the best-performing individuals. Have you heard of the "super chicken" research? With chickens, you can measure



productivity through how many eggs they lay. And so, in this study, Strategy One was to breed, say, ten chickens in a cage, find the best-producing ones, breed them for the next generation, and then see what happens six or seven generations down the line. And what they found was that at the end of the six or seven generations, Strategy One had these super, alpha chickens, and any one of them was an amazing producer. The problem is they killed half of the other chickens in the cage. And so, as a cage, they didn't produce as much as Strategy Two, which was to breed for the best-performing cage. Within that best-performing cage, there might be a chicken that maybe doesn't lay that many eggs but is the one that keeps the peace amongst all the other chickens. And if you're trying to maximize for overall productivity, you want to go for Strategy Two. But most big corporations go for Strategy One.

## RAPID REFLECTIONS

### FROM TONY HSIEH

#### **1 IN YOUR EXPERIENCE, WHAT COMMON LEADERSHIP ADVICE IS MISLEADING?**

I think maybe the word “leadership” itself can be misleading, because it implies that there must be a certain structure—most likely hierarchical—and that the structure can only function if it is “led” . . . but in nature there are plenty of ecosystems and structures that are resilient and adapt and evolve that don't have leaders.

#### **2 WHAT DO COMPANIES TEND TO GET WRONG ABOUT THEIR CUSTOMERS?**

That their customers think about their company or brand as much as they do . . . everyone is busy, including customers . . . there's a lot going on in their lives, and thinking about your company is probably not at the top of their daily to-do list.

#### **3 WHAT IS A TECH SERVICE OR PRODUCT—NOT YET INVENTED—THAT YOU WOULD LOVE TO SEE HIT THE MARKET?**

A replacement for email that's so much better than email that it causes everyone to abandon email.

**The Quarterly:** *In terms of corporate structure, what do you think you give up by optimizing for adaptability instead of predictability?*

**Tony Hsieh:** There's a quote attributed to Charles Darwin—it may be misattributed—but it's something like, "It's not the fastest or strongest or most intelligent of species that survives. It's the one most adaptable to change." The world's moving faster and faster. Technology is enabling things to happen more and more quickly, and information flows much more quickly than it did 20 to 30 years ago. It's really going from a mind-set of, "How do we try to predict, plan, and control and execute on a specific plan?" to a mind-set that's more about, "How can we get fast feedback loops? How do we constantly sense and respond and build the organization around adaptability and resilience and longevity?" versus the more traditional mind-set of efficiency. Systems theory and research has shown that if you're maximizing for both efficiency and stability, usually that's at the cost of resilience. Resilience is harder to maximize for because it's harder to observe and measure compared to efficiency and/or stability.

It may be that, on a metalevel, what's less predictable is what our org chart is going to look like six months from now. But I don't know whether predictability is actually an advantage. I think that's how organizations get stuck, because they want that predictability of structure. But if it's the wrong structure, what's the benefit of being predictably wrong? The structure of the organization is a variable that affects the productivity and output of the organization. And most organizations aren't designed for changing their org structure in any efficient or easy way.

**The Quarterly:** *Speaking of variables, your core business is very data- and analytics-enabled. How do data and analytics play into your organizational thinking? Do you use them to assess performance?*

**Tony Hsieh:** It depends. We have a team that looks at data quite a bit. There are certain things where we know that if we spend, say, X dollars in paid advertising in this channel, we're going to get Y dollars in sales. So we should do more of that, as long as the ROI continues to make sense.

But you can't put everything in a metric. There are certain people that I get more inspired working with, where we just kind of play off of each other's ideas. I wouldn't even know how to put that into some sort of metric form that passes legal and HR.


We believe that employees are much more than just what their specific job description is. Maybe it's through volunteering at an event, or at the company all-hands meetings where an employee that's great at dancing can go do that even though that has nothing to do with their job description. But beyond just the hobby aspect, I think there's so much creative potential and intelligence that each individual employee has. We're trying to figure out how to create the best structure that releases as much of that as possible. Most structures just end up constraining, so you end up getting 10 percent of a person's potential versus, hopefully, close to 100 percent.

More than ten years ago, we made a commitment to our core values. Committing means we're actually willing to hire and fire people based on whether they're living the Zappos core values, completely independent of their actual job performance. Our hiring team interviews for the normal stuff, but then our HR recruiting team does a separate set of interviews purely for culture and values fit. Candidates have to pass both in order to be hired. We've passed on a lot of really smart, talented people that we know, in the short term, can make an immediate impact on our top or bottom line. But if they're not a fit for our values, then we won't hire them—and for that reason alone. It's the same thing for firing. If an employee is not living up to our values, even if they're the top salesperson or whatever, most companies would say, "Well, this guy is kind of a jerk, but, you know, we'll let it slide because he's bringing in the revenue." Whereas for us, it wouldn't even be a discussion.

“To harness collective intelligence, we think of every single employee as a human sensor. Everyone senses different things, and you want a way to process all of that input.”

**The Quarterly:** *You seem very comfortable with the fact that you don't quite know where this ship is headed, that it's steering itself.*

**Tony Hsieh:** We've all been brought up to believe that "If I do X, then Y is going to happen." But there are always unintended consequences. If you look at the great inventions, they emerge more from nonlinear ways of thinking. It's not, "Oh, I need to go invent X, and so all I have to do is steps one through ten, and then, all of a sudden, we come up with this random invention." I think people fool themselves into thinking things can be predicted and, therefore, controlled.

And so at Zappos, the bar is: Is it safe enough to try? It doesn't matter if other employees think it's a bad idea. I can take that input. But is it safe enough to try? At most companies, including us, historically, it ended up being more about consensus building—which is great when you're small. But consensus building doesn't scale. Self-organization, if done right, does scale. 

**Tony Hsieh** is the CEO of Zappos. This interview was conducted by **Aaron De Smet**, a senior partner in McKinsey's Houston office, and **Chris Gagnon**, a senior partner in the New Jersey office.

Copyright © 2017 McKinsey & Company. All rights reserved.





## Practice ‘innovation parenting’

In my experience, innovative cultures start with a philosophy and a tone—one analogous to the classic parenting advice that children need both “roots and wings.” As an innovation leader, you must ground creative people in accountability for the organization’s objectives, key focus areas, core capabilities, and commitments to stakeholders. Then you give them broad discretion to conduct their work in service of those parameters. Obsessing too much about budget and deadlines will kill ideas before they get off the ground. Once your scientists understand that they are ultimately accountable for delivering practical products and processes that can be manufactured affordably, you can trust them to not embarrass you by wasting a lot of money and effort. This trust helps forge an innovation culture.

Innovation parenting also pays attention to innovators’ social development. Millennials, in particular, will expect and seek out opportunities to interact with people who interest and excite them—exchanges that should, in turn, build innovation energy. To help individuals see where their work fits in the knowledge ecosystem, encourage relationships with colleagues in the internal innovation chain, from manufacturing to marketing and distribution. I ask my new hires to generate a list of who’s who at Corning within the first few months on the job. This helps them overcome the assumption that many hold that they must do everything themselves. That’s nonsense; others within the organization often have already sorted through similar problems. Understanding that early in one’s tenure reduces wasted effort and can inspire new bursts of collaborative creativity.

In my experience, innovative cultures start with a philosophy and a tone—one analogous to the classic parenting advice that children need both “roots and wings.”



## Bust hierarchy

You can reinforce the cultural benefits of innovation parenting by opening up organizational space to allow innovators to bypass barriers and hierarchies that often sap creativity. I recall a scientist who had just returned from a conference in Japan and who barged into my office with a fierce determination to immediately begin work on a new (at the time) kind of laser that promised very low-cost computer interconnection. He had just met the inventor of the laser and had gone through a back-of-the-envelope analysis showing its feasibility. Realizing that his own expertise wasn't a direct fit for developing the new laser, he assembled a small team of engineers and technicians and reached out to a couple of University of California professors who had already started work in the same area. The lesson? If he had not insisted on going to the conference; if I hadn't broken the rules and let him travel; if we hadn't given him the resources to start the work; and if he had not asserted that the best time, however painful, to rethink the company's direction was during a down cycle, we would not have been the first company to develop this widely adopted technology.

## Encourage the unreasonable

Most companies value unconventional thinking, assuring brainstorming participants that there are no bad ideas and urging them to think outside the box. But you should also encourage the truly impractical in some situations—for example, when conducting scenario-planning exercises to unearth potential competitive threats. In a recent session, one of our most respected scientists asked what would happen if a rival developed a way to deposit magnetic films on glass *without* high temperatures, challenging one of Corning's industry-leading capabilities: creating glass that withstands high temperatures for industrial uses, such as information technology for data centers. People laughed and ribbed him as though he had referred to the fourth law of thermodynamics. But it ultimately triggered a discussion about temperature range, what new possibilities might arise, and what kinds of resources would be needed to address potential challengers.

Corning's CEO, Wendell Weeks, is always setting the bar beyond what is reasonable. Recently, an engineer proposed a brilliant solution for increasing the efficiency of a technology by 25 percent. Weeks asked, "Why not 50 percent?" The engineer was flabbergasted at the outrageousness of the question. But then he started considering what it would take to achieve that goal. Even though 50 percent was not realistic, the question prompted him to think of possibilities that he would not have considered otherwise.



## Don't die of indigestion

Conventional wisdom holds that organizations die of starvation from a shortage of good ideas and projects. In reality, they are much more likely to die of indigestion. A surfeit of projects with inadequate staffing makes delivering on anything less likely. When I see a scientist committed for 15 percent of his or her time on a project, and others for 5 percent, I become pessimistic about the effort, since there's no real ownership, progress often is slow, and team members get frustrated. Scientists should stick to two projects—having only one can be boring; having three can overextend you. Concentrating on two projects allows immersion in a primary project, with the possibility to shift gears to the other project if the first one hits a temporary roadblock.

## Cultivate external relationships

Relationships that extend beyond the boundaries of the organization are invaluable to acquiring and distributing knowledge. I'm fortunate that the contacts I've built through a career on the front lines of research have made it possible for me to stay in touch with a diverse array of large companies, start-ups, venture capitalists, national labs, and universities. I gain a lot from exposure to these innovators, and I also try to give back to them—for example, by explaining Corning advances such as bend-resistant optical fibers, Gorilla Glass, and technologies for drug discovery, to name a few.

These discussions sometimes lead us to bring teams from outside Corning together with innovators inside, which may yield coinnovation or joint-development agreements. When others truly understand your innovations, doors to collaboration swing open, giving partners insights into how to further develop and commercialize your technologies. For instance, after a trio of Corning scientists solved the tricky problem of bending optical fibers in a very tight radius without appreciable performance losses, sharing this breakthrough enhanced Corning's reputation and ultimately made “fiber to the home” a reality worldwide.


These relationships have also produced leads in emerging Silicon Valley technologies—such as virtual and augmented reality, interconnections in data centers, and advanced displays—where there is potential for Corning involvement. And they have helped us import helpful, new management practices, including better ways to evaluate innovators' performance, faster resource reallocation, and the design of physical work environments that encourage idea sharing and creativity.





## Hire the best—and fast

No culture can be innovative without great people, and the demands on innovators have never been greater. It used to be the case that R&D organizations could hire a top scientist to work on a specific project. In today's febrile competition for those with the most diverse skill sets, this limited approach doesn't cut it. Instead, R&D leaders need to hire people who are willing to join multiple projects and to move from one to another as needed. Call them ambidextrous; call them system thinkers. These are people who want to solve problems that matter and that take them from invention to final product. They constantly push for improvements and create their own luck by sensing what is happening in their field and then applying their observations and experience to problems. At Corning, we ask scientists not only to invent new materials but also to help develop the processes needed to mass-produce them.

Identifying, recruiting, and retaining deep scientists, interdisciplinarians, and visionaries requires new thinking and good connections. Maintaining close relationships with influential professors at leading universities who can connect you with promising graduates is key. A few years ago, a professor friend from Stanford University called to let me know that one of his best students was graduating—one with expertise in optical technology. Though she had several offers in hand, he sensed that she would be a good fit for Corning. After an introduction, I immediately made her an offer, even though I didn't have an opening. I called my boss (Corning's chief technology officer, David Morse) to break the news, and rather than the expected rebuff, he asked, "Do you have any more people like her?" The boldness paid off, as she designed and built the industry's first optical cable for consumer applications and has spearheaded many other critical efforts. 

Copyright © 2017 McKinsey & Company. All rights reserved.

## What is your Achilles heel?

# 7 factors that encourage leaders to act like jerks

In his new book, Stanford professor Bob Sutton flags a set of risk factors that researchers have identified as the most likely to cause people to act like or be perceived as being rude, overly aggressive, abusive, or a bully. Read the list below to figure out which ones are especially likely to cause your inner jerk to rear its ugly head.

- » You are around a lot of jerks
- » You wield power over others—especially if you once had little power
- » You are at the top of the pecking order and are a very competitive person who feels threatened by your star underlings
- » You work much harder and sacrifice more than others do—and often let everyone know about your martyrdom
- » You don't get enough sleep
- » You have too much to do, too much to think about, and always seem to be in a hurry
- » You feel a constant urge to look at your smartphone, which you can't resist even when you know you should exercise self-control



For more on how executives can restrain their own uncivil impulses, see “Memo to the CEO: Are you the source of workplace dysfunction?,” on page 102, which is adapted from Sutton’s new book, *The Asshole Survival Guide: How to Deal with People Who Treat You Like Dirt* (Houghton Mifflin Harcourt, September 2017).

Copyright © 2017 McKinsey & Company. All rights reserved.



## Highlights

How technology is reshaping the workplace and the economy

The business case for lifelong learning: Why the continuous development of skills should be a top corporate priority—and how to deliver it

Zappos's CEO on the philosophy behind the company's evolving organization

The health imperative for organizations, individuals, and leaders

A wake-up call for jerks: Are you the source of workplace dysfunction?

Corning's Silicon Valley technology chief on creating a culture of innovation

Three areas of change and opportunity for the semiconductor industry

China's electric-vehicle market plugs in

A diversity playbook from Australia's Origin Energy

Industry snapshots on portfolio complexity, global banking penetration, and stress testing beyond financial services