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2016 Shift Index

The paradox of flows: Can hope flow from fear?

About the Center for the Edge

The Deloitte Center for the Edge conducts original research and develops substantive points of view for new corporate growth. The center, anchored in Silicon Valley with teams in Europe and Australia, helps senior executives make sense of and profit from emerging opportunities on the edge of business and technology. Center leaders believe that what is created on the edge of the competitive landscape—in terms of technology, geography, demographics, markets—inevitably strikes at the very heart of a business. The Center for the Edge's mission is to identify and explore emerging opportunities related to big shifts that are not yet on the senior management agenda, but ought to be. While Center leaders are focused on long-term trends and opportunities, they are equally focused on implications for near-term action, the day-to-day environment of executives.

Below the surface of current events, buried amid the latest headlines and competitive moves, executives are beginning to see the outlines of a new business landscape. Performance pressures are mounting. The old ways of doing things are generating diminishing returns. Companies are having a harder time making money—and increasingly, their very survival is challenged. Executives must learn ways not only to do their jobs differently, but also to do them better. That, in part, requires understanding the broader changes to the operating environment:

- What is really driving intensifying competitive pressures?
- What long-term opportunities are available?
- What needs to be done today to change course?

Decoding the deep structure of this economic shift will allow executives to thrive in the face of intensifying competition and growing economic pressure. The good news is that the actions needed to address short-term economic conditions are also the best long-term measures to take advantage of the opportunities these challenges create. For more information about the Center's unique perspective on these challenges, visit www.deloitte.com/centerforedge.

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COVER IMAGE BY: MARIA CORTE MAIDAGAN

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Overview

A year of change

The year 2016: It feels unprecedented, historic—a year that seemed destined to make clear, in ways that no series of charts ever could, that the world is *changing, has changed, will continue to change*. Events both global and local highlighted disparities in income and opportunity, skills and future prospects, and a widening gap between geographic regions with vibrant economies and others struggling with industries in transition, and we watched it all play out on a 24/7, always-connected, virtual stage.

We are left with a sense of unease. It seems apparent that the American public, broadly, was gripped by a deep anxiety this year, manifesting as fear or pessimism or cynicism. This national anxiety led to results that confounded experts, broke models, and defied expectations. Time and again, 2016 has reminded us that our ability to understand and adapt has failed to keep pace with the speed of change in the world around us—socially and commercially—just as our ability to process and evaluate information has not kept up with the speed at which it is created, disseminated, and consumed. Even as some organizations and political candidates made appeals to the past, the very way these appeals played out made clear that the world in which we live is changing, and the models and expectations we have about how the world works may no longer hold.

Why? Much has been made of an apparent turn in the national temperament. Demographics have been sliced and diced, with explanations and counter-explanations that fit some story we tell ourselves. The same themes pervaded, yet our perceptions of them seemed to vary wildly. What preoccupied our collective imagination? Fairness, opportunity, the future, a need for change, and a fear of change already upon us. What are those changes? They are myriad. Many of the most profound are universal and long-term.

The Shift Index is our attempt to quantify and make sense of the changes we see in the world around us, primarily through the lens of business.

The index (see sidebar "The Shift Index" for further definition) measures long-term trends across three categories: Foundations, Flows, and Impact. These broad trends have been building for decades, yet they don't affect all industries or regions equally or at the same time. Some are just reaching an inflection point at which the effects are difficult to ignore. In particular, we're beginning to feel the cumulative effects of technological advances and demographic changes that are starting to turn up the steep part of an exponential curve. It can be disorienting.

Overall, this year's index reflects the durability and stability of the trends we have reported on previously. Despite the feeling of great upheaval, these indices have been fairly consistent and predictable over a period of decades.

The world of the Big Shift demands resilience and emphasizes learning over predictability and the status quo, scalable learning rather than scalable efficiency, and participating effectively in knowledge

THE SHIFT INDEX

We developed the Shift Index to help executives understand and take advantage of the long-term forces of change shaping the US economy. First released in 2009 and updated annually, the Shift Index tracks 25 metrics across more than 45 years, providing a comprehensive view of underlying forces not captured by short-term economic indicators. These metrics, and the relative rates of change between them, highlight the evolution and impact of long-term trends in technology and public policy.

The Shift Index metrics are divided into three indices that measure the waves of change in what we call the Big Shift in the global business environment:

1. The "Foundation" index tracks advances in the digital technology infrastructure and public policy that catalyze changes in the business landscape. Trends in the Foundation metrics have systematically reduced barriers to entry and movement.
2. The "Flow" index looks at the flows of knowledge, capital, and talent—key drivers of performance enabled by the Foundation—as well as at the amplifiers of these flows. Flow metrics tend to lag Foundation metrics because of the time required to understand and develop new practices consistent with advances in the foundation.
3. The "Impact" index captures the effects that long-term trends have on competition, volatility, and performance across industries. Impact metrics will change as firms begin to figure out how to participate in and harness the knowledge, capital, and talent flows across institutional and geographic boundaries.

Impact index	Markets	**Competitive intensity:** Herfindahl index **Labor productivity:** Index of labor productivity as defined by the Bureau of Labor Statistics **Stock price volatility:** Average standard deviation of daily stock price returns over one year
	Firms	**Asset profitability:** Total ROA for all US firms **ROA performance gap:** Gap in ROA between firms in the top and the bottom quartiles **Firm topple rate:** Annual rank shuffling amongst US firms **Shareholder value gap:** Gap in the TRS* between firm in the top and the bottom quartiles
	People	**Consumer power:** Index of 6 consumer power measures **Brand disloyalty:** Index of 6 consumer disloyalty measures **Returns to talent:** Compensation gap between more and less creative occupational groupings** **Executive turnover:** Number of top management terminated, retired, or otherwise leaving companies
Flow index	Virtual flows	**Inter-firm knowledge flows:** Extent of employee participation in knowledge flows across firms **Wireless activity:** Total annual volume of mobile minutes and SMS messages **Internet activity:** Internet traffic between top 20 US cities with the most domestic bandwidth
	Physical flows	**Migration of people to creative cities:** Population gap between top and bottom creative cities** **Travel volume:** Total volume of local commuter transit and passenger air transportation*** **Movement of capital:** Value of US foreign direct investment inflows and outflows
	Amplifiers	**Worker passion:** Percentage of US workers who have three attributes—questing, connecting, and commitment to domain—related to their work **Social media activity:** Time spent on social media as a percentage of total Internet time
Foundation index	Technology performance	**Computing:** Computing power per unit of cost **Digital storage:** Digital storage capacity per unit of cost **Bandwidth:** Bandwidth capacity per unit of cost
	Infrastructure penetration	**Internet users:** Number of people actively using the Internet as compared to the US population **Wireless subscriptions:** Percentage of active wireless subscriptions as compared to the US population
	Public policy	**Economic Freedom:** Index of 10 freedom components as defined by the Heritage Foundation

Notes: * TRS: Return to shareholders
** Creative occupations and cities defined by Richard Florida's *The Rise of the Creative Class* (2004).
*** Measured by the Bureau of Transportation Statistics' Transportation Services Index

Source: Deloitte analysis.

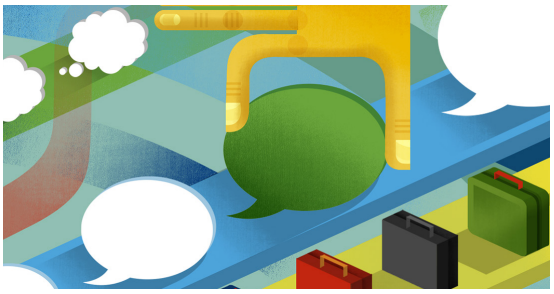
flows within and across companies. The findings of the 2016 Shift Index suggest that companies and individuals are increasingly willing to participate in knowledge flows but still learning how to understand and harness them.

Mounting pressures, narrowing focus

Paradoxically, despite the stability and predictability of these long-term trends, the world around us seems consumed by a pervasive sense of uncertainty, insecurity, and resultant fear. This effect occurs somewhat independently of whether something is actually happening. For example, nothing in the Impact Index departs from the trends we have seen over the past decade, but there seems to be more of a sense of insecurity that isn't directly connected to whether an individual's company has declining performance or whether volatility has buffeted that individual's stock portfolio.

At the same time, the pressure is increasing as the effects of the Big Shift begin to accumulate. As digital technologies increasingly permeate all areas of our lives and reach all corners of our country, the positive and negative impacts of the Big Shift on business and society become more difficult to ignore. As Tom Friedman points out in his new book *Thank You for Being Late*, our ability (as humans or society) to adapt tends to follow a linear path, while the technological foundations are changing exponentially. The exponential curve gets only steeper when you consider the convergence of multiple, exponentially advancing building blocks (computing, storage, and bandwidth) into technologies such as cloud computing, biosynthesis, and 3D printing, and the self-reinforcing cycles of innovation that follow.[1] The resulting gap causes real economic dislocation in addition to a more general disorientation and anxiety.

Companies and individuals aren't necessarily benefiting from the technology and policy trends. In fact, the Impact index shows that although labor productivity continues to increase, firm performance, as measured by ROA, continues to decline economy-wide, especially for companies in the bottom



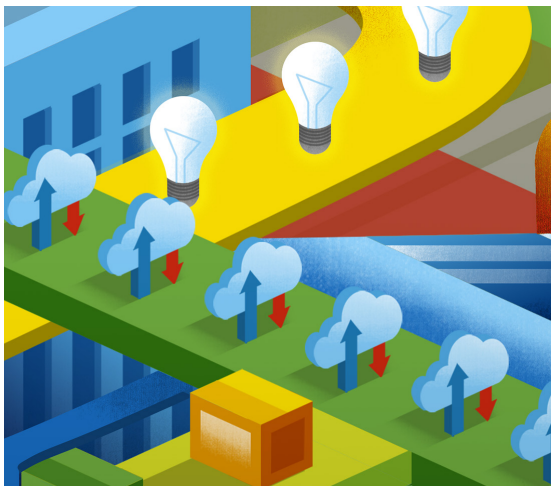
quartile. There is real stress. Indeed, with electronic trading algorithms instantaneously reacting to ever larger flows of real-time data, both quantitative and sentiment- and headline-based, stock market volatility is ticking upward again after declining from the 2008 peak. Companies face mounting performance pressures; so do workers.

There's a paradox here. In one part of our lives, as consumers, the Big Shift is giving us much more power; in another part of our lives, as workers, we are facing increasing performance pressure. Consumer power remains high in many categories, as does brand disloyalty. But consumer power matters only if you have money to spend, and awareness that employers might be facing significant performance challenges further fuels widespread anxiety.

This pressure leads to a narrower focus, causing many institutions and individuals to home in on isolated components and miss the broader picture of the Big Shift. Consider issues such as trade, globalization, and job losses: Most of the discussion fails to consider them as they are today within the context of the broader changes represented by the Big Shift. Friedman describes it as a "new era of globalization," one that is defined by interconnection and companies and individuals participating in global flows.[2] The mounting performance pressures can cause us to lose sight of the Big Shift and narrow our focus to more tangible components that seem easier to address through a specific policy or strategy. However, trade is only one of the forces creating and intensifying pressure. Focusing just on trade, or just on jobs, can't help but fail to address the more complex web of flows that are reshaping our economic and social systems. Crafting effective solutions that will create new opportunity and drive higher levels of performance requires understanding the broader picture of the Big Shift.

Increasing flows hold potential, if we learn to use them

We believe part of the answer can be found in the Flow Index. Increasing volumes and speeds of flows—of information, people, and money—and greater participation in these flows create an environment full of potential opportunity. However, in the short term, these flows also increase our awareness of both an increasing pace of change and the disparity in outcomes in advance of our ability to understand and make sense of them. The natural human reaction is to feel more uncertain, fearful, and anxious. On the one hand, as more data is opened up and reported on, we have greater visibility into how our institutions are functioning. On the other, it becomes more apparent to the public that our institutions are adapting too slowly to the changing environment and the changing needs of individuals and society. The reported broad decline in trust in our institutions—according to Gallup, only 32 percent of Americans report having confidence in key US institutions, continuing a downward trend that began in 2004,[3] while Edelman's trust barometer finds that only 41 percent of Americans trust government to keep pace with change[4]—reflects that anxiety.



In this year's Shift Index, we see continued evidence of increasing flows. The Flow Index looks at the flow of knowledge, capital, and talent—as well as amplifiers of these component flows—enabled by advances in the digital infrastructure and a general trend toward public policy liberalization. Flow metrics tend to lag the foundational advances because flows reflect the process of understanding and developing new practices consistent with foundational changes.

- The Interfirm Knowledge Flows indicate employee participation in knowledge flows is starting to increase significantly, as more workers participate, and participate more frequently, in various forms of knowledge flows between companies. The technology, professional services, consumer products, and telecommunications industries lead the way with increased participation in knowledge flows (see the appendix for further explanation of these and other Shift Index metrics). As we'll discuss, we expect an absolute increase in the Flow Index, though the impact and implications of the increase depend on the type and diversity of the flows.
- Wireless activity is increasing as SMS has dipped as a result of alternative ways to connect; Internet activity continues to grow exponentially. Time spent on social media on personal computers is down to 14 percent from a high of 17 percent in 2011, but time spent on social media across all platforms continues to grow. Globally, social network users grew 9 percent in 2015, accounting for over 65 percent of all Internet users.[5]
- Migration to creative cities continues, widening the gap between population growth in the cities at the top of the creative list and those at the bottom. In 2015, the rate of population growth in

the most creative cities was 34 percent higher than in the least creative cities, up from a gap of 24 percent in 2012. Growth in the least creative cities has declined with the population of those cities only slightly higher (less than 1 percent) than it was in 1990.

- Travel volume has climbed 70 percent in 25 years of increasing digital communication, and has increased by 8.5 percent in the past five years alone.
- Movement of capital is increasing again (for flows in and out of the United States).
- Worker passion, which serves to amplify flows, remains low; at 13 percent of American workers, it is statistically unchanged from two years ago. Just over half of workers have at least one attribute of passion.

Flows are increasing; now, how can we make that productive? If the goal of expanding flows within our society and economy is to accelerate learning rather than to simply expand data flows, we might create a more useful framework for optimizing both flows and friction. What kinds of flows are generative, meaning that they promulgate even more productive flows over time? What kind of friction gives us opportunity for reflection and productive debate so that we can learn faster and come up with even more creative ideas and approaches over time?

First, we should consider the roles of both flows that happen in the physical world—of people, resources, or ideas—and flows that happen in the virtual world of the Internet: data, information, and ideas. One important finding of the Shift Index over the past decade has been that the Internet (and increases in virtual flows) is not replacing the need for physical flows via face-to-face interaction. Instead, virtual flows tend to reinforce and amplify face-to-face interactions.

One place we see this is in the Interfirm Knowledge Flows metric, in which online forums and social media have become more popular at work but so have face-to-face lunch meetings and conferences. This can also be seen in the continued growth in travel volume, which has climbed steadily, including 8.5 percent in the past five years, despite the parallel development of increasingly rich and accessible means for virtual communication and collaboration. While not a comprehensive indicator of the total volume of face-to-face interactions, it is interesting that the trade show and conference planning industry has reported 2.7 percent annual growth over the past five years.[6]

One place we see this is in the Interfirm Knowledge Flows metric, in which online forums and social media have become more popular at work but so have face-to-face lunch meetings and conferences.

Face-to-face interactions have the potential to accelerate learning by bringing individuals into contact with people and ideas they might not otherwise encounter or in an experience or context that isn't easily replicated virtually. Although multidisciplinary gatherings such as SxSW, TED, and the Aspen Ideas Festival occupy familiar convention-center settings, they expand the scope beyond simple marketing or networking. These multidisciplinary events bring attendees into contact with more diverse flows, from adjacent and even seemingly unrelated domains. Attendees have the opportunity to share ideas and make more diverse connections that can yield insights and potential collaborators. Attendance at SxSW has increased 53 percent over the past five years (to 37,660), and mega-events such as the International Consumer Electronics Show draw up to 150,000 attendees from across a spectrum of industries and disciplines. Virtual flows, such as online forums, social media platforms, and messaging apps, can help make these large events more productive, allowing

exhibitors and attendees to connect and engage with each other before, during, and after the events and continue to participate in more diverse flows that reinforce and amplify the face-to-face learning. On the other end of the spectrum, numerous smaller-scale, in-person convenings—from Meetups for women coding enthusiasts to kids' health hackathons to summits that mobilize makers or digital storytellers for the greater public interest[7]—are made possible by social media and other technologies that make it easier to organize, publicize, and mobilize.

There is a quality to flows individually and in aggregate. The value of flows in the Big Shift is dependent upon both having access to diverse types of flows and having diverse participants or sources of information within those flows. Lack of diversity can reinforce mistaken beliefs and make it much more difficult to adapt to changing circumstances. Thus, companies can increase exposure to flows by participating in industry consortiums. However, if all of the consortium members are large companies in the same industry, the learning to come from that flow may be limited, both by lack of diversity and unwillingness to share learning and create new knowledge with competitors. Similarly, at the individual level, social media can have a "filter bubble" effect of allowing people to self-select into echo chambers that tend to reinforce existing beliefs rather than broaden exposure to new ideas and insights.[8] For individuals, this heightens our sense of fear and threat and limits our exposure to diverse, productive flows.

Companies and individuals alike can fall prey to comparing their own experiences and performance against a self-selected group of peers that can obscure a widening gap between their approach, performance, and expectations relative to others not in their defined group. The old problem of "not knowing what it is you don't know" has not gone away in the age of increasing flows enabled by the Internet. It may in fact be greater now than ever, as a result of the accelerating pace of change and the sheer volume of data and information available.

The migration to creative cities metric highlights the importance of face-to-face interactions and the role of diversity in productive, generative flows. While growth among the cities ranked as least creative has declined, the most creative cities have grown, on average, 35 percent relative to 1990 populations. This despite the fact that, with the help of digital technology infrastructures and new employment models, individuals can theoretically access work opportunities from anywhere with a good broadband connection, and, in most parts of the United States, individuals all have access to the same brand-name goods and entertainment. Many of the "creative" cities suffer from higher costs of living but also have more vibrant and resilient economies. Physical surroundings and face-to-face interactions still matter, fostering new connections and insights and exposing us to a wider variety of serendipitous flows and opportunities that we would never experience if not for proximity. More and more people appear to intuitively understand that they will learn faster and improve their performance more rapidly if they are physically present in a densely populated creative city. They are willing to experience significant personal disruption as they move from a familiar location to a new city and to accept a higher cost of living in return for the perceived benefits that can help them cope with mounting performance pressure. The unfortunate byproduct of increased migration to cities is to drain economic potential and vibrancy from the areas that are seeing a significant outflow, leaving them isolated from generative flows in such a way as to further widen the gap.

To move past fear to opportunity

THE challenge is to move beyond fear and focus on the chance to use the flows of information, people, capital, and resources to create more opportunity for everyone. What are some of the opportunities that come from increasing participation in global flows?

For institutions, flows can be harnessed to anticipate and capture more opportunities in a rapidly changing business environment, to build deeper trust-based relationships with customers, and to create ecosystems that provide much greater leverage and flexibility in more effectively responding to the changing environment. It is especially important that institutions take a broader view of the many flows in which they might participate. Consider the way fitness trackers such as FitBit are evolving their products to gain an increasingly intimate view of the customer's daily life through data flows. When Nike decided to create an accelerator for companies to design products around its Fuel technology rather than further develop the tracker itself, it found its way into another useful flow: the ideas and talent that can be harnessed to drive innovation in wearables technology and wellness applications. This is part of the reasoning that drives so many large corporations to open "innovation centers" in places such as the Bay Area. While they often cannot point to specific products or partnerships, these centers serve to keep their parent companies at least somewhat connected to flows of ideas and talent beyond their four walls. The ongoing and perplexing problem for institutions, of course, is whether participation in flows can be effectively translated into learning and performance improvement for the organization.

Brand-based companies can participate in flows to better understand their customers and to adjust and evolve their brand based on an ongoing dialogue. This isn't entirely new. Back in 1993, when a Charles Barkley ad series[9] ignited a controversial exchange about role models, Nike elected not to pull the ads and, as a result, was able to learn more about customers' values by participating in the dialogue the ad series sparked. Red Bull is another company that has chosen to play almost exclusively in the flows by creating events and media centered around the activities and personalities about which its customers care. FirstBuild offers another example of how companies can think about participating in flows as a means of creating new opportunities: In this case, GE Appliance created a microfactory and community for crowdsourcing innovations in small appliances; the initiative allowed GE Appliance to participate in numerous flows that a large corporation would not typically be part of, including maker, inventor, and crowdfunding communities.

The ongoing and perplexing problem for institutions is whether participation in flows can be effectively translated into learning and performance improvement for the organization.

For individuals, the digital infrastructure now offers tools to scale impact as an individual or to mobilize a group. As we've written about previously,[10] it is easier than ever for individual entrepreneurs to learn skills, develop, and market a product and reach

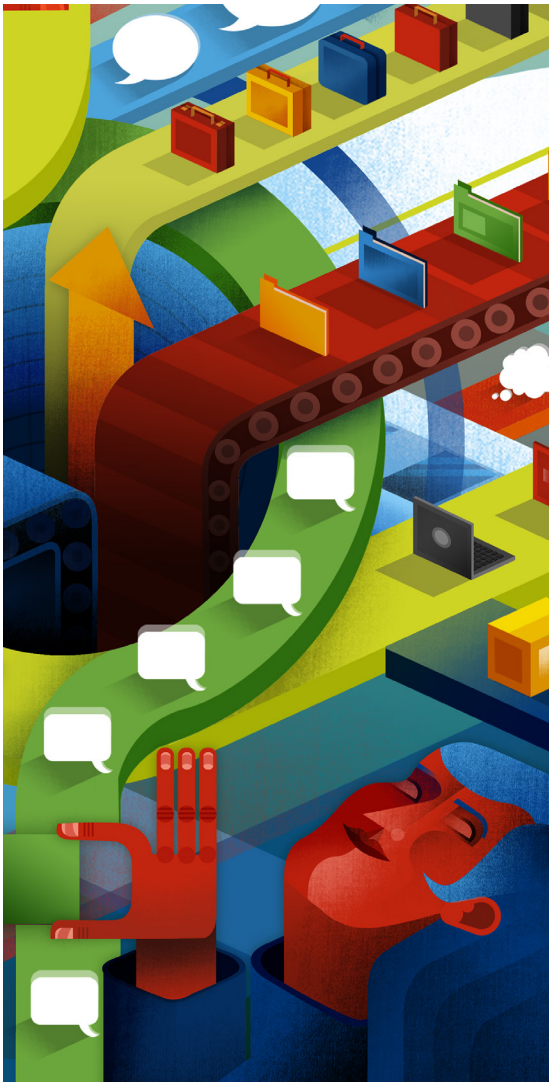
millions of potential customers. Friedman calls this the increasing "power of one." Just look at Joseph Garrett, the 23-year-old Brit whose onscreen Minecraft alter ego Stampy Cat has gained a following of more than 7 million YouTube subscribers.[11] Or take the example of Michelle Phan, who began posting makeup how-to videos in 2007 and now has a lifestyle network, a beauty subscription service, and her own brand with a major cosmetics manufacturer.[12] In a rapidly growing number of cases such as these, social media platforms enable a certain type of flow between producer and consumer that few larger companies have effectively leveraged but are powering young entrepreneurs who use them more instinctively. Individuals can also leverage flows to learn, find collaborators, and fine-tune their ideas.

It's worth stating that mind-sets will likely have to shift before we can effectively get through this transitory period of anxiety and insecurity to embrace the possibilities of a world connected in the Big Shift. And as some of these forms of flow mature, we can learn to use them more effectively and consciously. In emotional terms, we have to move from fear of change and growing inequality to hope that more diverse flows can lead to greater prosperity for all.

Conclusion

We believe this is a transitory phenomenon—the double-edged sword of flow and the anxiety of broad and accelerating change. The natural human reaction to the greater visibility and awareness that comes from digitization and widespread connectivity, on a global scale and in real time, is fear. And there are real risks of what that fear could produce if it continues to grow over time. But over the longer term, these increasing flows present significant opportunities to mobilize people to use these technologies to change their institutions and embrace hope. The good news is that, properly harnessed, these flows enable small moves, smartly made, to set big things in motion. A challenge for all of us is to make these small moves quickly so we can provide more tangible evidence of the positive impact that can spark hope and diminish fear.

At the Center for the Edge, we will continue to measure how these trends impact the future—and how individuals and institutions can best stage their bets and make low-cost, but transformational, moves. Our next journey will tackle a bigger question: In the context of the Big Shift, what would an institution redefined from the bottom up, with the goal of scalable learning, look like? Our future institutions may look very different from today's, with faster learning and a renewed focus on our customers and ecosystems, all interacting to seize the opportunities that the Big Shift is creating.



Appendix

2016 Shift Index metrics

THE Shift Index consists of three sub-indices that measure the rate of change in today's business environment: the Foundation index, the Flow index, and the Impact index. We are currently in the first wave of the Big Shift (measured by the Foundation index) and are still learning to embrace the second wave (captured in the Flow index).

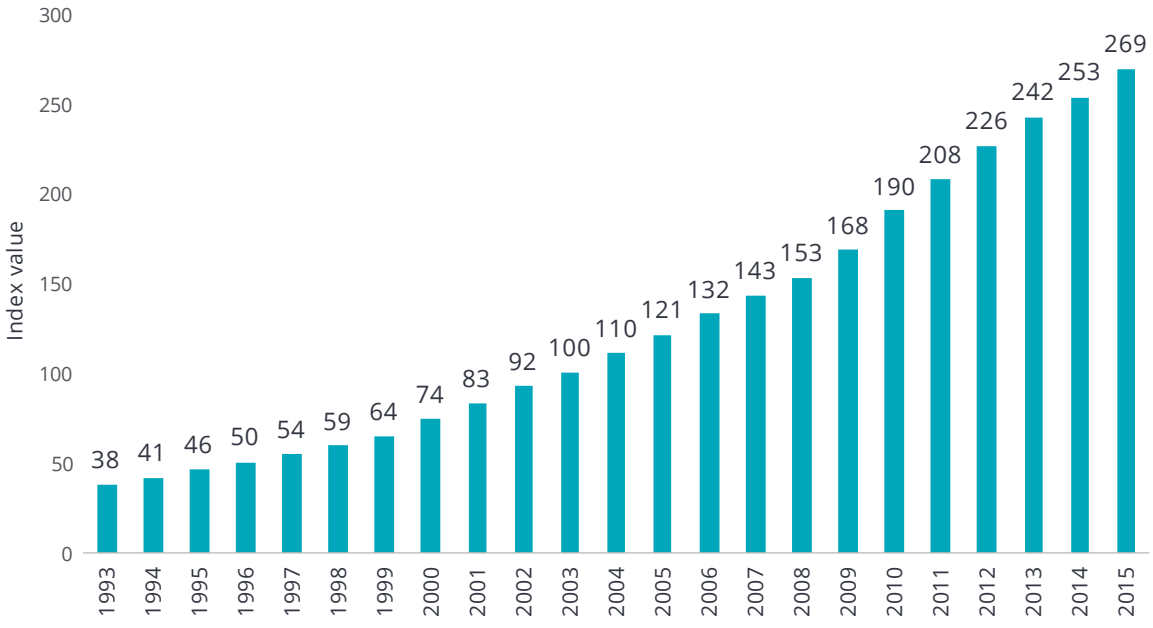
Foundation index

The Foundation Index measures changes that are fundamental to the business landscape, including advances in technology performance, rates of infrastructure penetration, and trends toward liberalization in public policies.

The cost/performance of the core digital technology building blocks has been improving exponentially for decades and at a faster rate than that of previous technologies. As a result, increasingly powerful and affordable mobile devices, combined with robust connectivity, enable individuals and institutions to more easily connect and communicate. At the same time, these core digital components combine in innovative ways to create new tools, including powerful cloud capabilities, that enable new business models and ways of working. Public policies that reduce barriers to the movement of people, resources, and capital tend to reinforce the changes catalyzed by the digital infrastructure.

The metrics in the Foundation Index provide leading indicators for potential change in other areas.

Figure 1. The Foundation Index



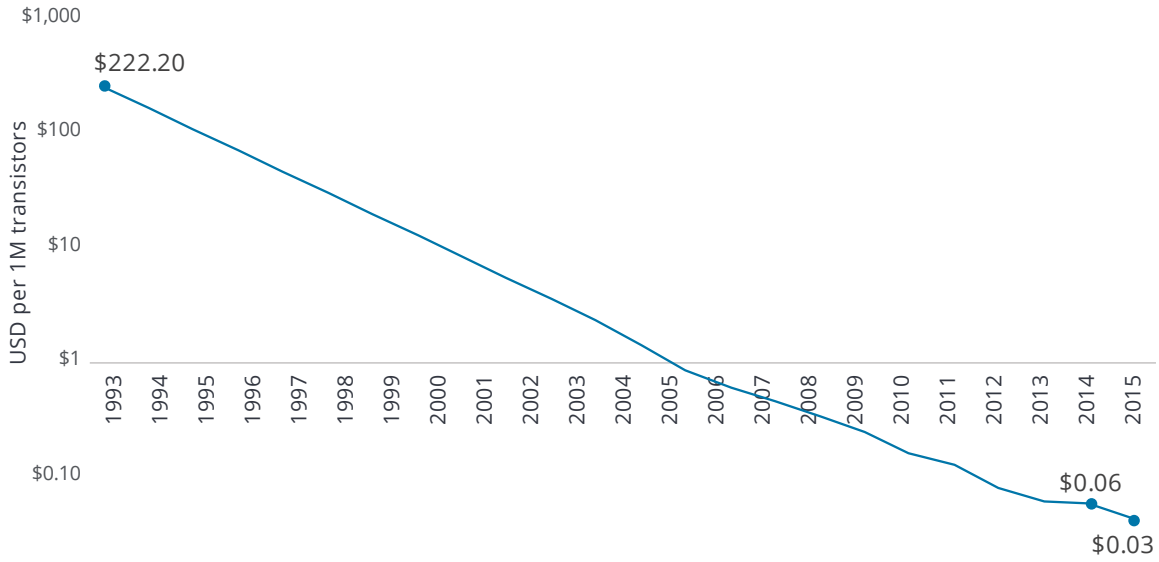
The Foundation Index continues to trend upward with no signs of slowing

Source: Deloitte analysis.

Technology performance

COMPUTERS

Figure 2. Computing cost performance

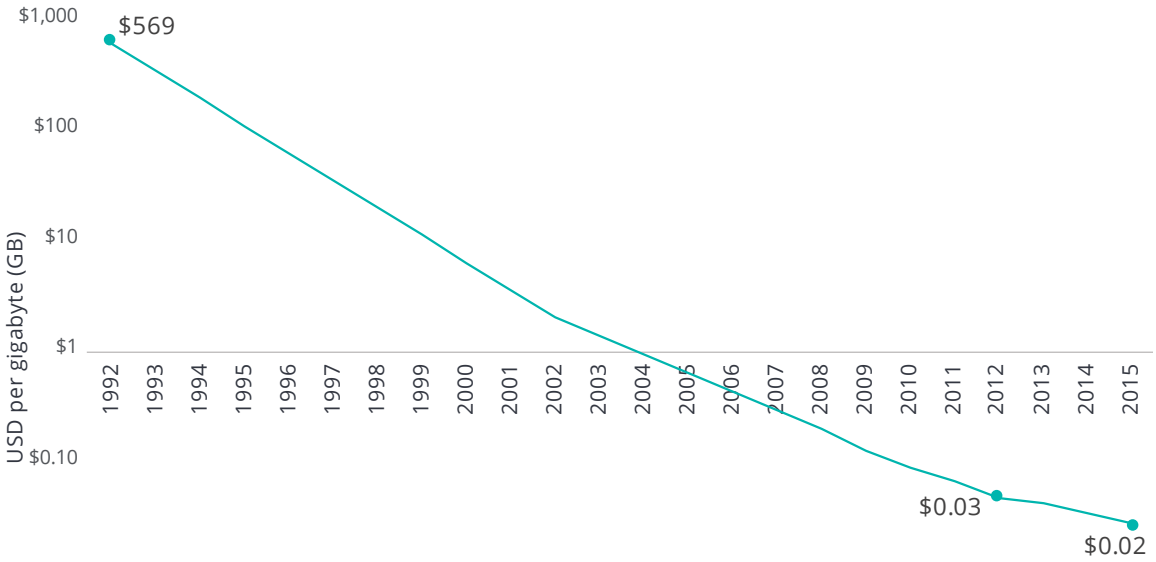


The cost of computing power has decreased significantly, from $222 per 1 million transistors in 1992 to $0.03 per 1 million transistors in 2015. This ongoing trend enables the increasing affordability of the computational power at the core of the digital infrastructure.

Source: Leading technology research vendor.

DIGITAL STORAGE

Figure 3. Storage cost performance (1992–2015)

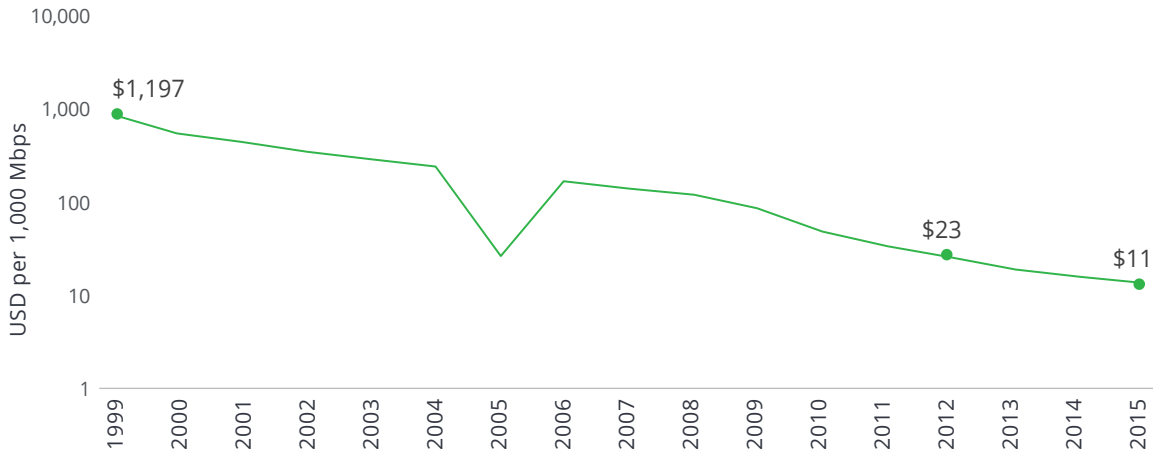


The cost of data storage trends downward, decreasing from $569 per 1 gigabyte of storage in 1992 to $0.02 per 1 gigabyte in 2015. The decreasing cost/performance of digital storage enables the creation of more, and richer, digital information, accessible to more people.

Source: Leading technology research vendor.

BANDWIDTH

Figure 4. Bandwidth cost performance (1999–2015)



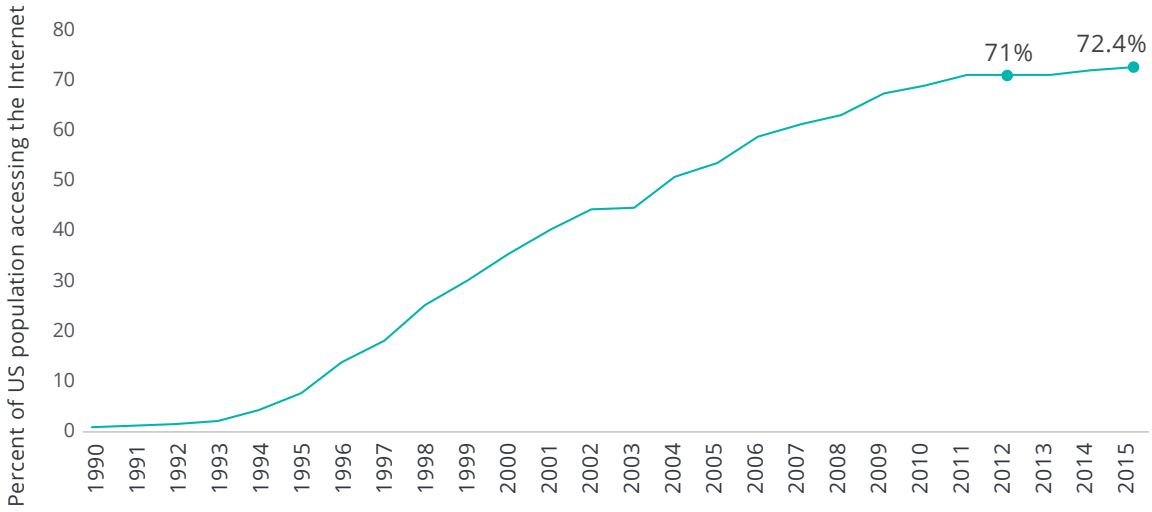
The cost of Internet bandwidth has decreased, from $1,197 per 1000 megabytes per second (Mbps) in 1999 to $11 per 1000 Mbps in 2015. Declining cost/performance of bandwidth enables faster collection and transfer of data, facilitating richer connections and interactions.

Source: Leading technology research vendor.

Infrastructure penetration

INTERNET USERS

Figure 5. People accessing the Internet

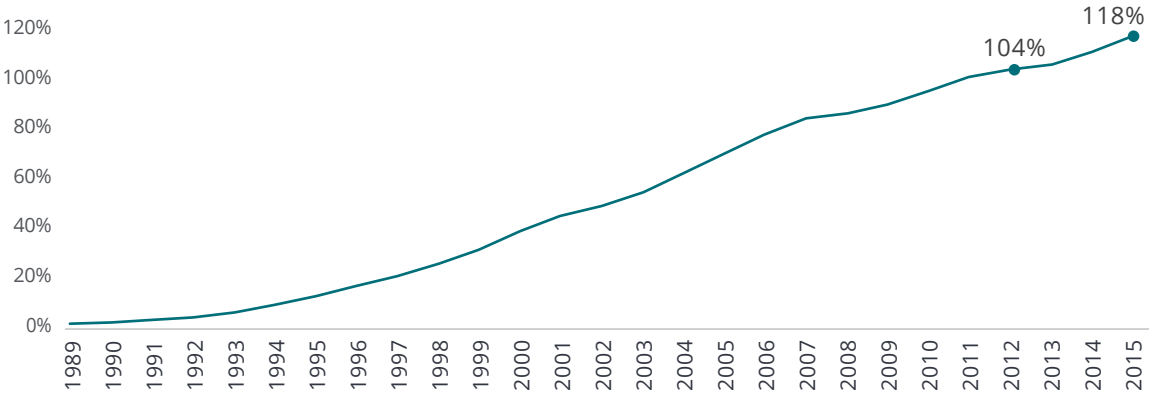


Internet penetration in the US is leveling off. In the 25 years since its inception, the percentage of the US population accessing the Internet each month has reached just over 72 percent, due in part to cheaper bandwidth and more robust connectivity. Widespread use of the Internet enables greater sharing of information and resources and broader access to markets.

Sources: comScore; Deloitte analysis.

WIRELESS SUBSCRIPTIONS

Figure 6. Wireless subscriptions as a percentage of the US population (1989–2015)



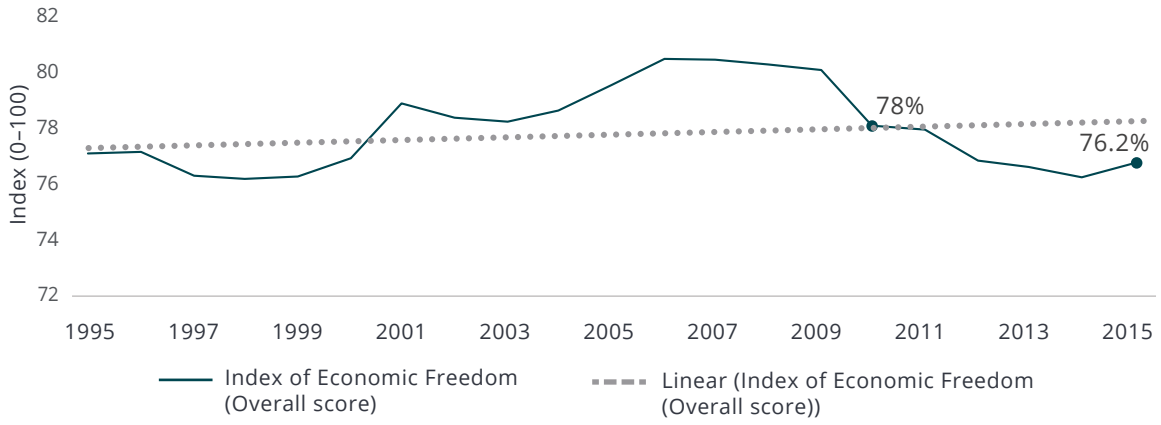
More people are connected to the digital infrastructure via mobile devices. In 2015, the percentage of wireless subscriptions compared to the US population reached 118 percent, meaning there are now more wireless subscriptions than people (although not every individual has a subscription). Widespread connectivity enables the sharing of data, information, and knowledge from nearly any geographic location.

Source: CITA.

Public policy

ECONOMIC FREEDOM

Figure 7. Index of Economic Freedom (US) (1995–2015)

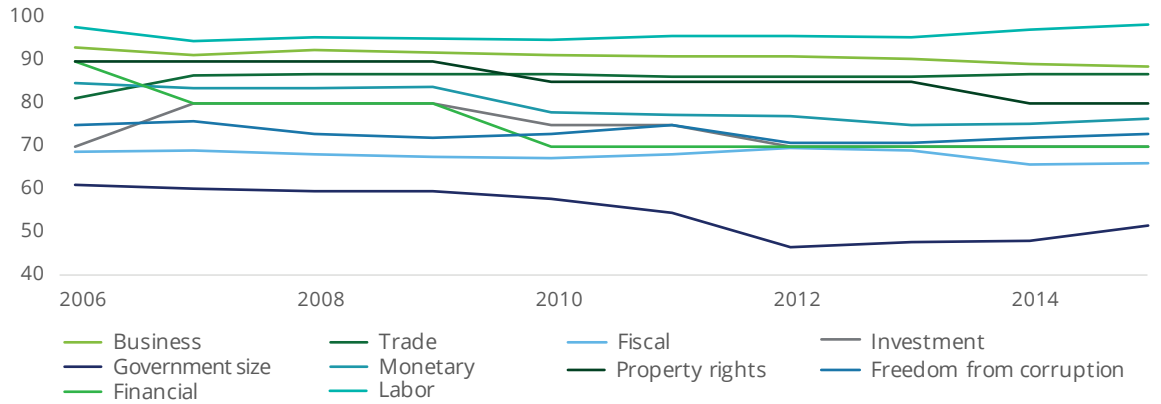


Index of Economic Freedom is moving upward after four years of decline

Source: Heritage Foundation's *2016 Index of Economic Freedom.*

The Index of Economic Freedom, a compilation of 10 indicators measured by the Heritage Foundation, is a proxy for public policies that promote open markets and the movement of capital, labor, product, and resources. Since 1995, the upward trend for the United States has been driven primarily by gains in investment freedom, financial freedom, trade freedom, and business freedom (4 of the Index's 10 components). Greater economic freedom increases competition and collaboration. After dropping in recent years, economic freedom is increasing again, led by changes in government size, monetary freedom, and labor freedom.

Figure 7a. Components of economic freedom (1995–2015)



Index of Economic Freedom is made up of 10 components.

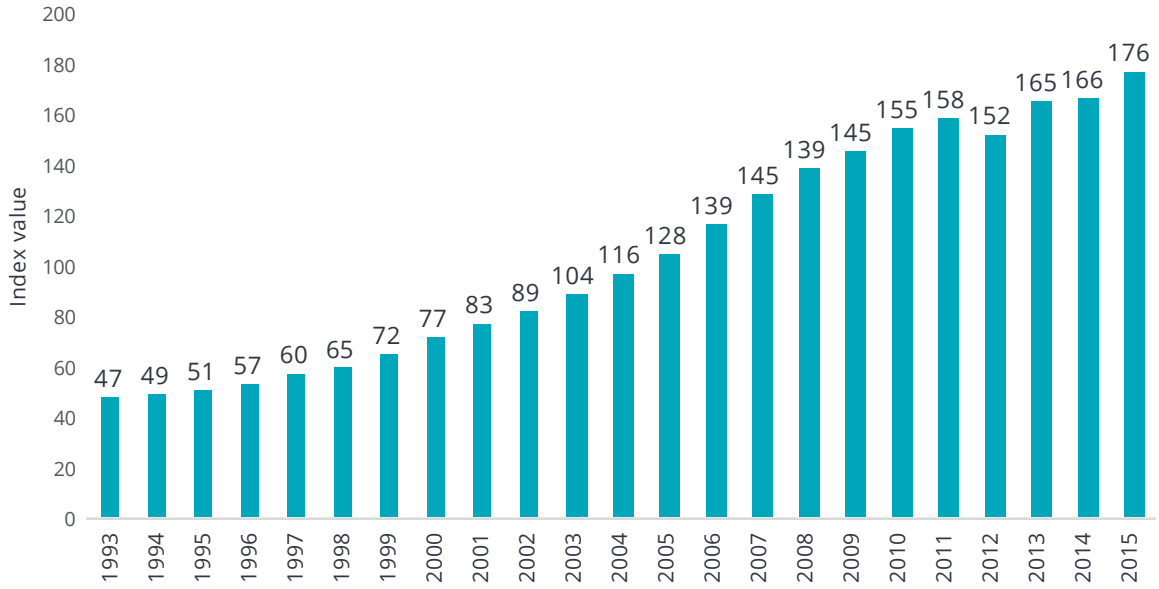
Source: Deloitte analysis.

Flow index

The Flow index measures key performance drivers—flows of knowledge, capital, and talent—unleashed by the forces measured in the Foundation Index. These flows are enabled by the rapidly advancing digital infrastructure and the general trend toward policy liberalization. Worker passion and social media activities amplify the flows.

In the Big Shift, stocks of knowledge are less valuable, and participating in and harnessing knowledge flows become more important.

Figure 8. Flow index

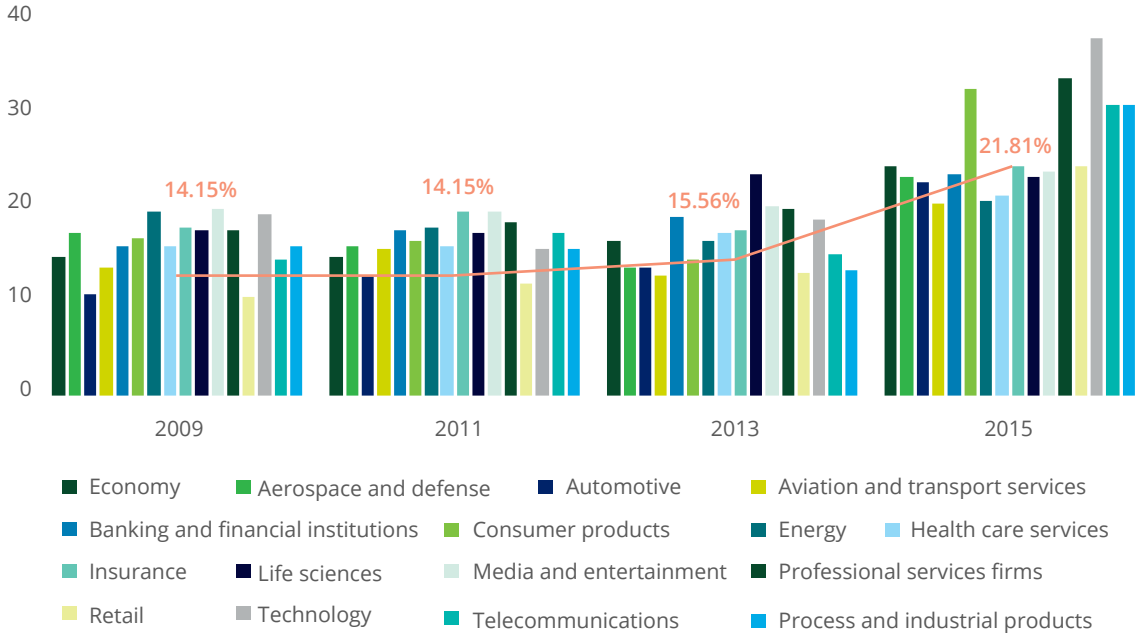


Source: Deloitte analysis.

Virtual flows

INTERFIRM KNOWLEDGE FLOWS

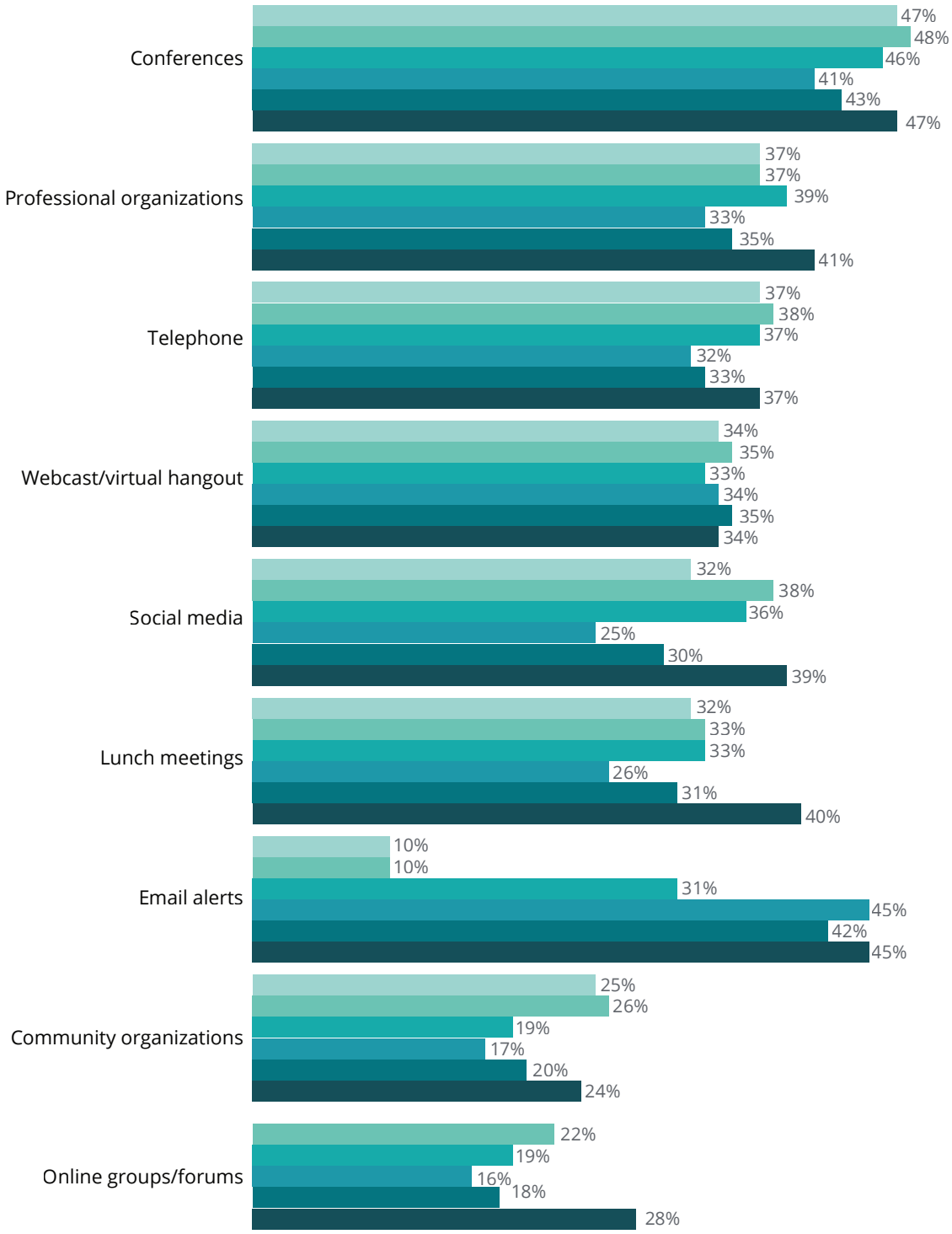
Figure 9. Interfirm Knowledge Flows by industry (2009–2015)



Interfirm knowledge flows have begun to increase as a result of more workers participating and participating more frequently. The technology, professional services, consumer products, and telecommunications industries lead the way.

Source: IPSOS; Deloitte analysis.

Figure 9a. Percentage participation in Interfirm Knowledge Flows (2009–2015)



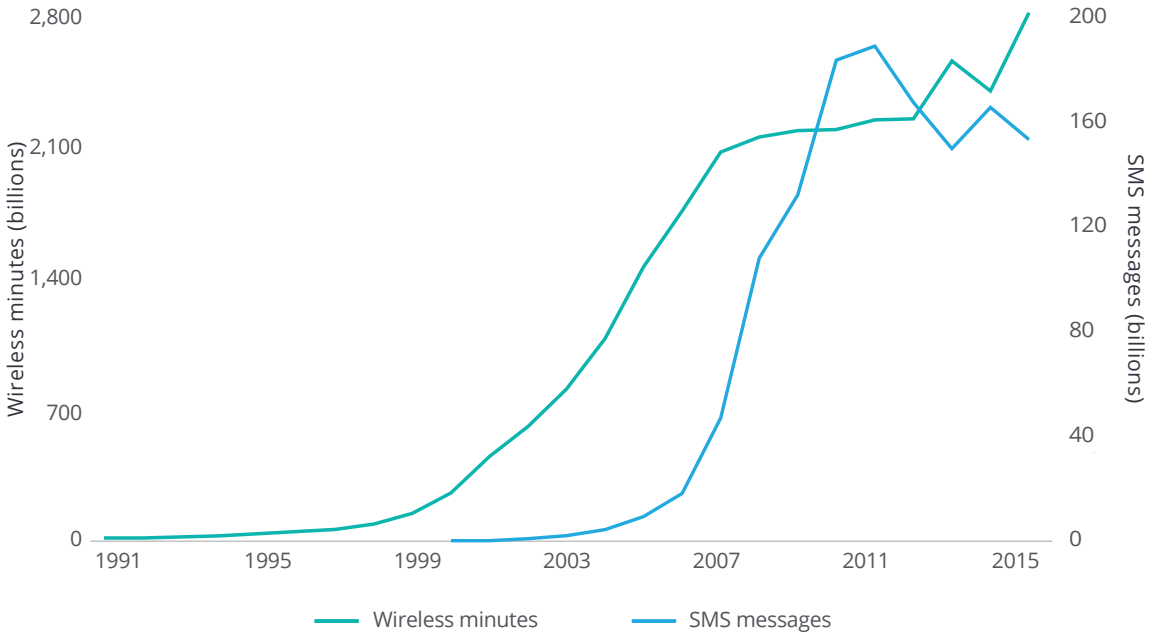
Participation has increased across different types of flows.

Source: IPSOS; Deloitte analysis.

Overall participation in knowledge-sharing activities that extend beyond organizational boundaries have increased for most activities since 2012, and workers are changing the types of activities in which they participate. While conferences are still most common, the percentage of survey respondents who participate in online groups and forums saw a significant increase, as did those who participated in lunch meetings and in professional organizations. The use of social media rebounded from its 2012 low. These results indicate that individuals may be becoming more proficient with their use of flows and more able to choose the right format for the purpose, and that companies may be becoming more comfortable with employees' use of a variety of tools to participate in flows.

WIRELESS ACTIVITY

Figure 10. Wireless minutes (1991–2015) versus SMS volume (2000–2015)



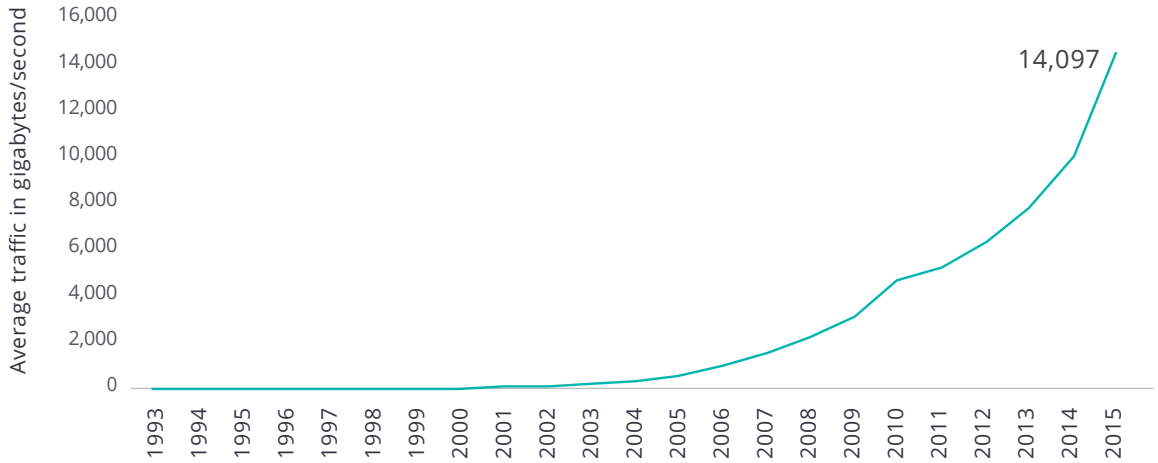
Wireless activity trends show the effect of alternative messaging apps and in-platform chat that bypass need for once-strong SMS.

Sources: CTIA; Deloitte analysis.

Mobile devices are increasingly important for connectivity and access. Despite several years when SMS volume was growing far faster than wireless minutes, in recent years SMS volume has declined as wireless minutes have increased, as a result of cheaper over-the-top (OTT) messaging applications (for example WhatsApp, MessageMe, Google Talk, Viber) and social media-based chat.

INTERNET ACTIVITY

Figure 11. Internet activity for the 20 highest-capacity routes



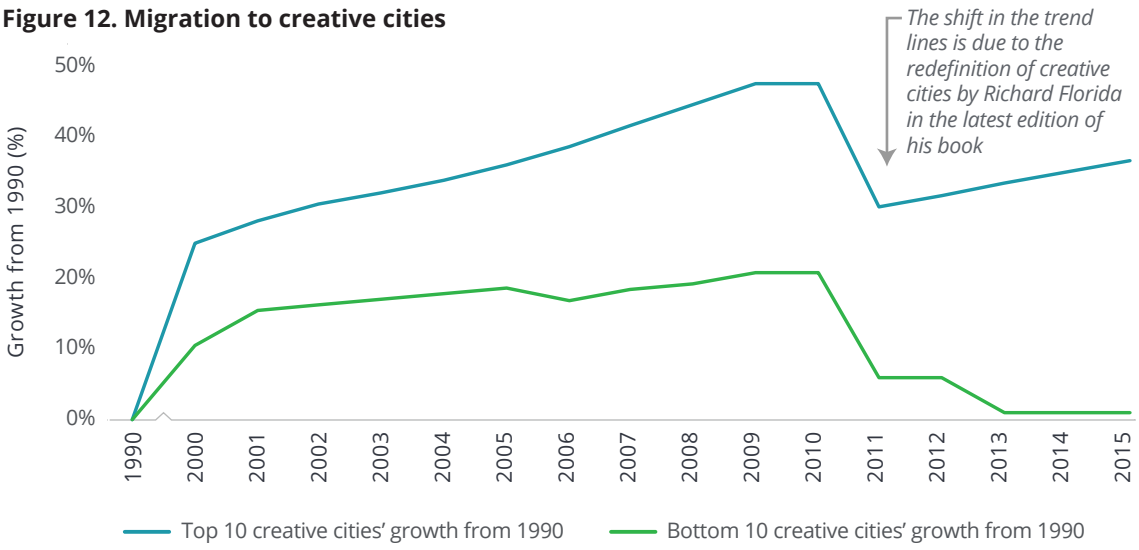
Internet activity shows no signs of slowing. Traffic for the top 20 highest-capacity US routes has grown exponentially since 1993. In 2015, the average traffic rose to 14,097 gigabytes/second, up from 6,237 gigabytes/second in 2012.

Source: Telegeography.

Physical flows

MIGRATION OF PEOPLE TO CREATIVE CITIES

Figure 12. Migration to creative cities

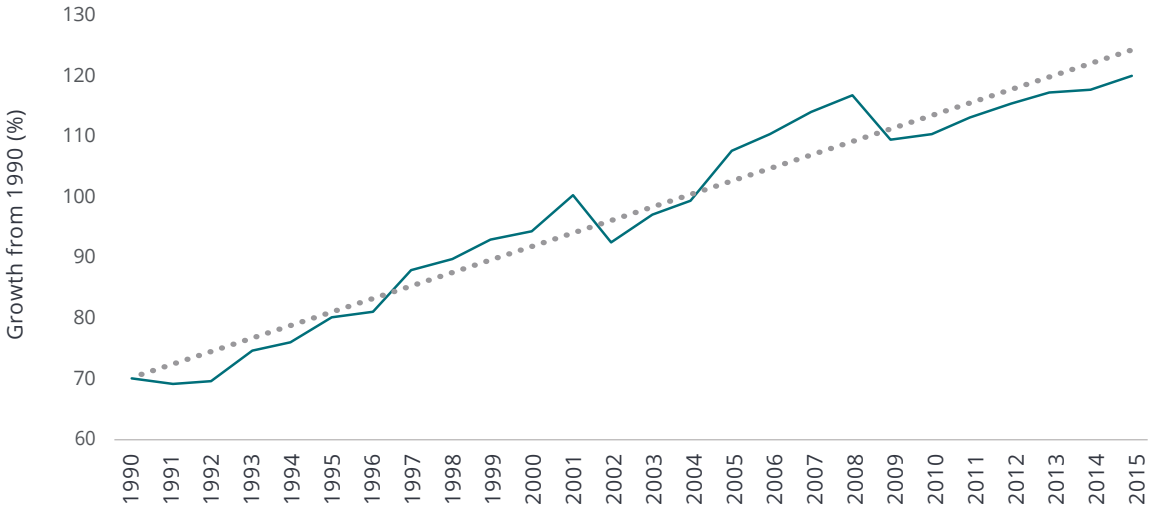


Migration to creative cities continues, increasing the growth rate gaps between the most creative and the least and concentrating certain types of talent and resources. The gap between migration rates for these cities is increasing as people seek productive and enriching interactions in the physical world.

Sources: US Census Bureau; Richard Florida's *The Rise of the Creative Class—Revisited*; Deloitte analysis.

TRAVEL VOLUME

Figure 13. Travel volume



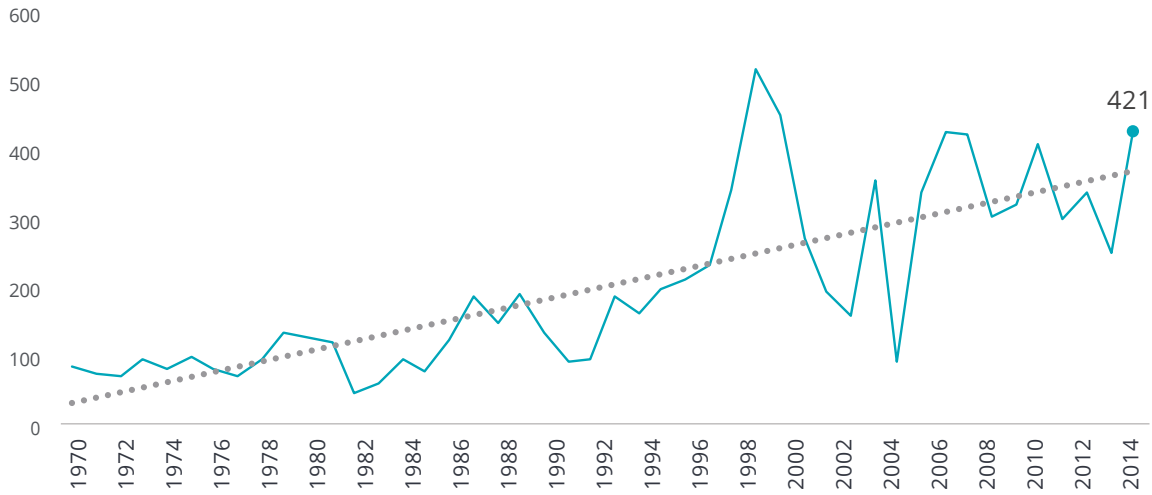
Travel volume, as measured by growth in the Transportation services index for passengers, has climbed 70 percent in the past 25 years despite an increase in other options for communication and collaboration.

Source: Bureau of Transportation Statistics; Deloitte analysis.

Despite better tools to connect digitally, people continue to seek face-to-face interactions. Physical interactions facilitate the transfer of tacit knowledge more readily than other means.

MOVEMENT OF CAPITAL

Figure 14. Movement of capital



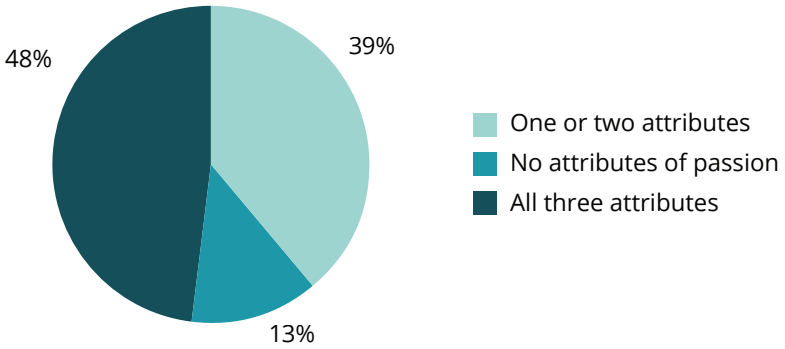
The absolute amount of capital moving between countries has trended upward for the past 30 years. However, foreign direct investment is impacted by many factors, including relative tax rates, interest rates, inflation, and protectionist policies—all of which can be quite volatile year-to-year.

Source: UNCTAD; Deloitte analysis.

Flow amplifiers

WORKER PASSION

Figure 15. Worker passion



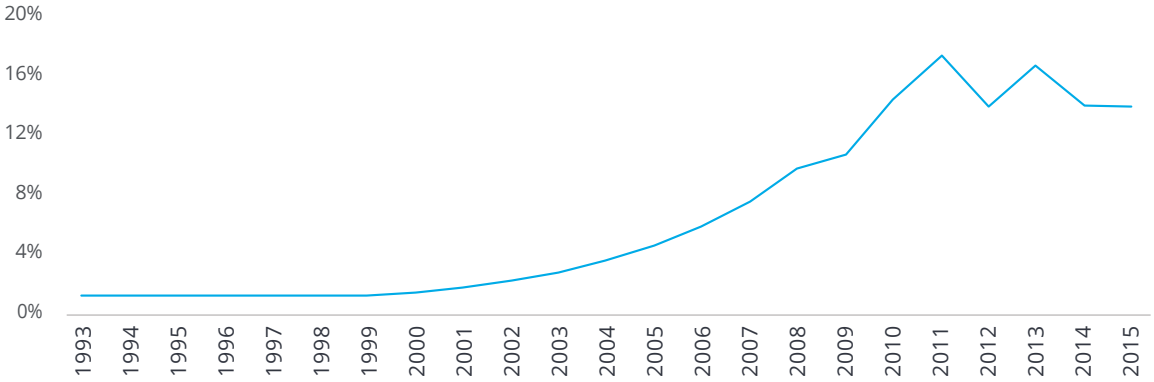
Worker passion remains low in the population.

Source: IPSOS; Deloitte analysis.

In a 2016 survey of 3,159 full-time American workers, only 13 percent of respondents exhibited all three attributes of worker passion: commitment to domain, questing, and connecting dispositions. The results are unsurprising—many institutions were designed for predictability, with inflexible, tightly integrated processes to minimize variances to plan.[13] However, the attributes of passion are important to help companies and individuals navigate the challenges of a changing business environment.

SOCIAL MEDIA ACTIVITY

Figure 16. Percentage of Internet time spent on social media (1993–2015)



Source: comScore.

Social media remains important. The 2015 numbers were nearly identical to 2012, with the amount of time users spend on social media relative to the total amount of time on the Internet on PCs at 13.9 percent. This decrease might reflect use of mobile devices, rather than PCs, for social media; this metric doesn't capture non-PC use. This type of multiway communication opens up opportunities to share knowledge and collaborate.

Impact index

The Impact index demonstrates the consequences of the Big Shift; thus, it is a lagging indicator. Individuals and companies are adopting new technologies and knowledge flows at different rates. In general, companies are still trying to evolve their efficiency-based legacy processes and practices to more fully benefit from the forces of the Big Shift.

IMPACT INDEX

Figure 17. Impact index

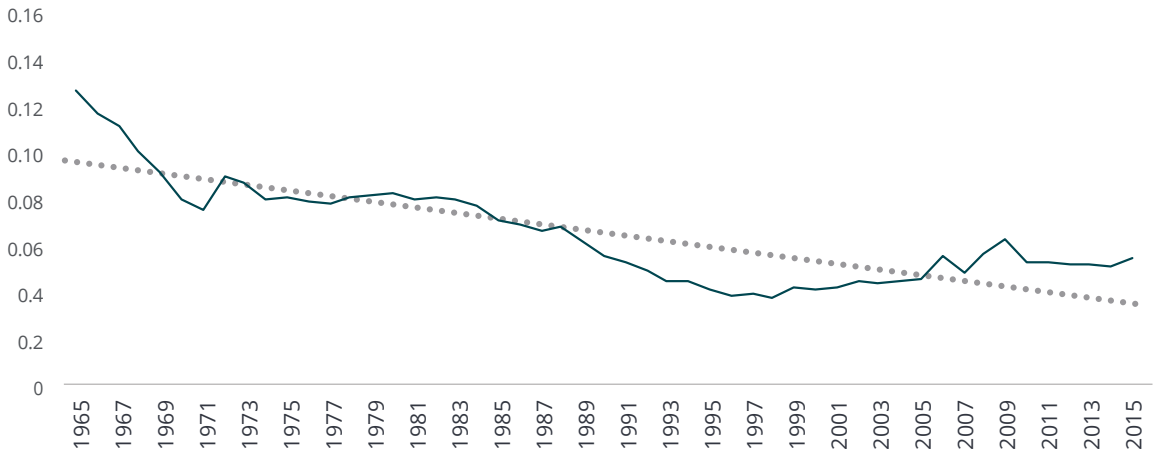
The Impact index reflects the consequences of the Big Shift. In recent years, the impact has been greater on people than on markets or firms.

Source: Deloitte analysis.

Markets

COMPETITIVE INTENSITY

Figure 18. HHI 1965–2015



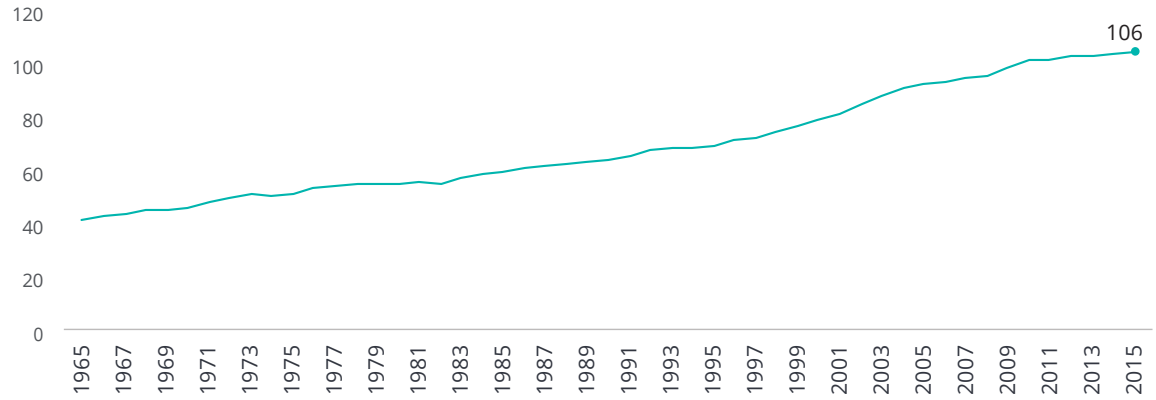
Competitive intensity remained relatively constant since 2010.

Source: Compustat; Deloitte analysis.

Competitive intensity is inversely related to industry concentration (as measured by the Herfindahl-Hirschman Index). Before 1995, industry concentration had trended downward for 30 years, indicating a steady increase in competitive intensity. Despite ticking upward in recent years, industry concentration is still less than half of what it was in 1965.

LABOR PRODUCTIVITY

Figure 19. Labor productivity



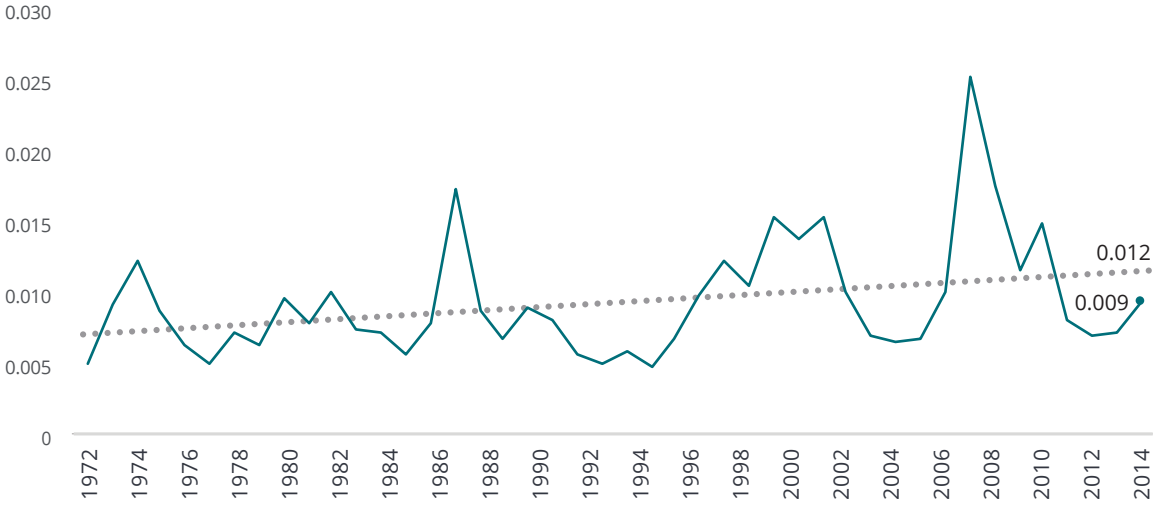
Although labor productivity continues to improve, these gains are largely competed away.

Source: BLS; Deloitte analysis.

As a whole, productivity in the US economy has steadily improved for nearly five decades, from 45.3 in 1965 to 106 in 2015 (as measured by the Tornqvist aggregation, which shows how effectively economic inputs are converted into output).

STOCK PRICE VOLATILITY

Figure 20. Stock price volatility (standard deviations) increasing after decline



Stock price volatility is increasing again after a multiyear decline following the 2008 recession.

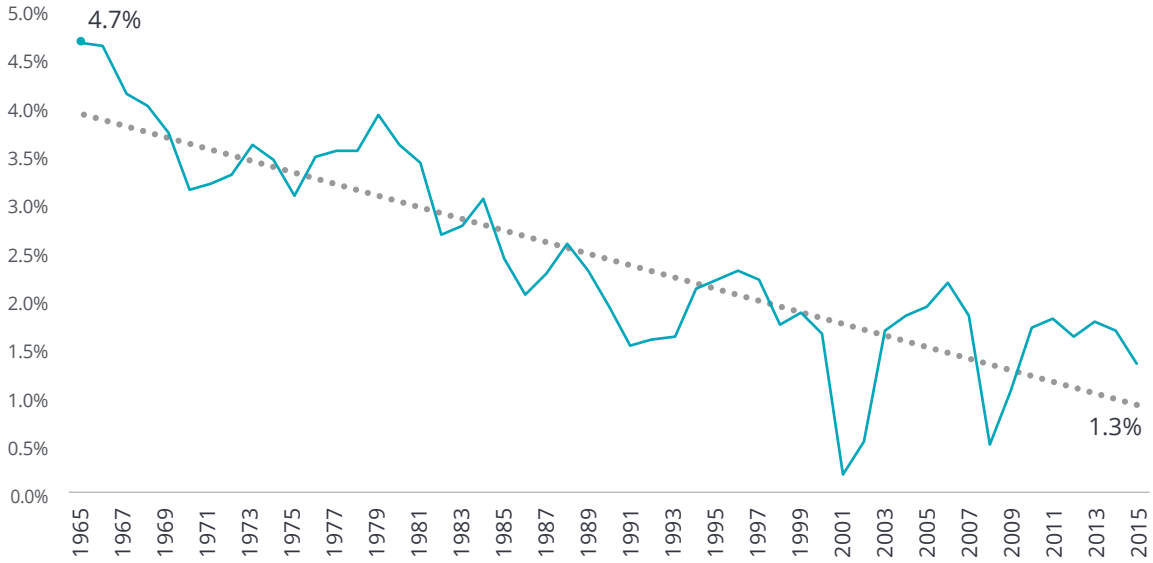
Source: CRSP US Stock Database; the University of Chicago Booth School of Business.

Over the last 40 years, stock prices have become more volatile. This volatility can be seen as a reflection of investors' reactions to increasingly volatile global events and greater uncertainty about the future. The increased volatility also reflects the impact of the market adjusting in real time to increasing flows of information, in part due to algorithmic trading.

Firms

ASSET PROFITABILITY

Figure 21. Economy-wide ROA

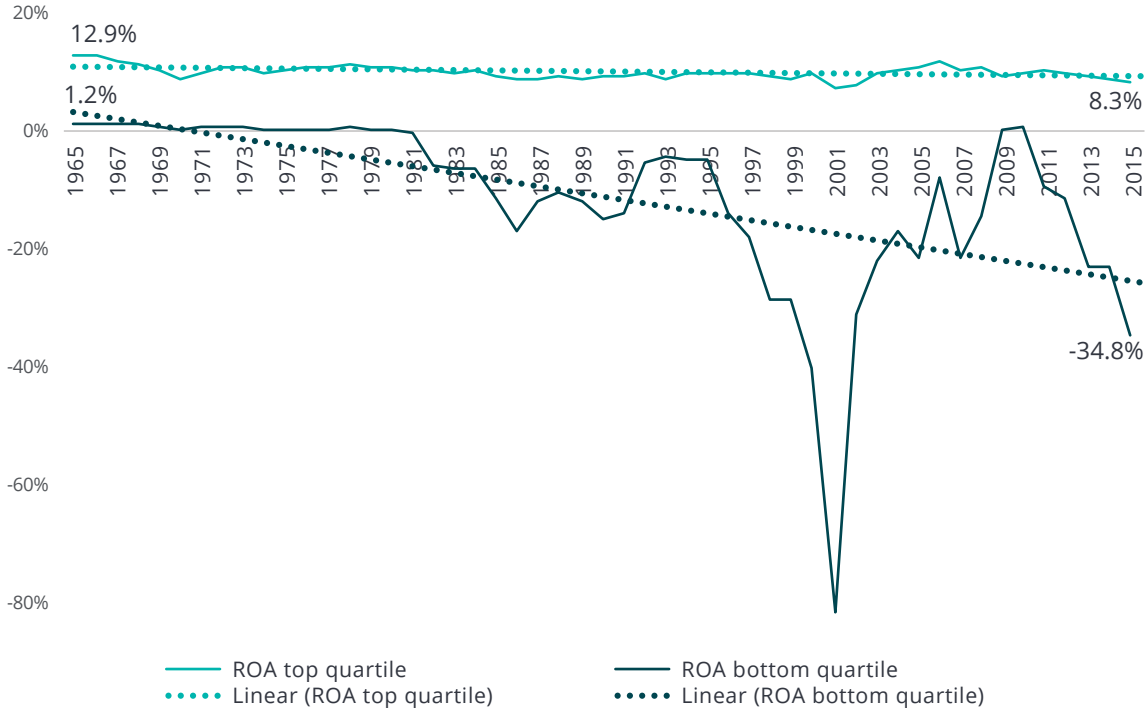


Firm performance, as measured by ROA, continues to decline.

Source: Compustat; Deloitte analysis.

The aggregate ROA of US firms fell to less than a quarter of its 1965 levels in 2015. To increase—or even maintain—asset profitability, firms should find new ways to generate value from their assets. The decreasing performance of US firms suggests that firms are not yet developing the new practices needed to benefit from the Big Shift. (For more discussion of ROA and the rationale behind this measure of firm performance, see our paper *Success or struggle*.)[14]

Figure 22. ROA performance gap



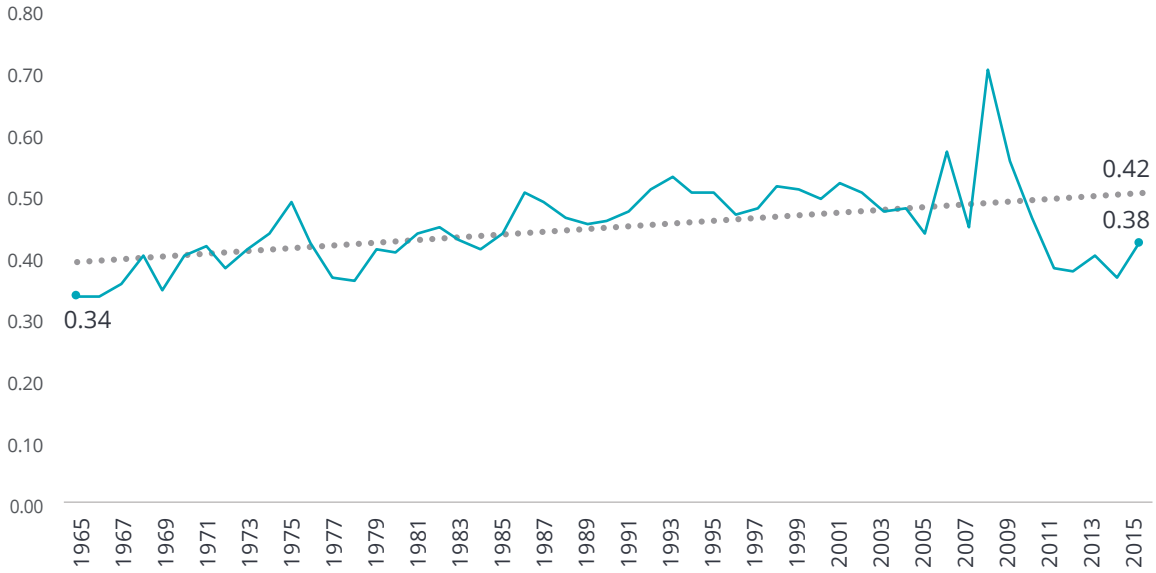
ROA performance among the bottom quartile of firms is in steep decline.

Source: Compustat; Deloitte analysis.

The continuing ROA gap between top performers and bottom performers isn't unexpected—those in the bottom quartile are harder hit by the type of unexpected challenges that are more common in the Big Shift. It is significant, however, that even for the top quartile ROA has declined, from 12.7 percent in 1965 to 9.7 percent in 2012 to 8.3 percent in 2015.

FIRM TOPPLE RATE

Figure 23. Firm topple rate

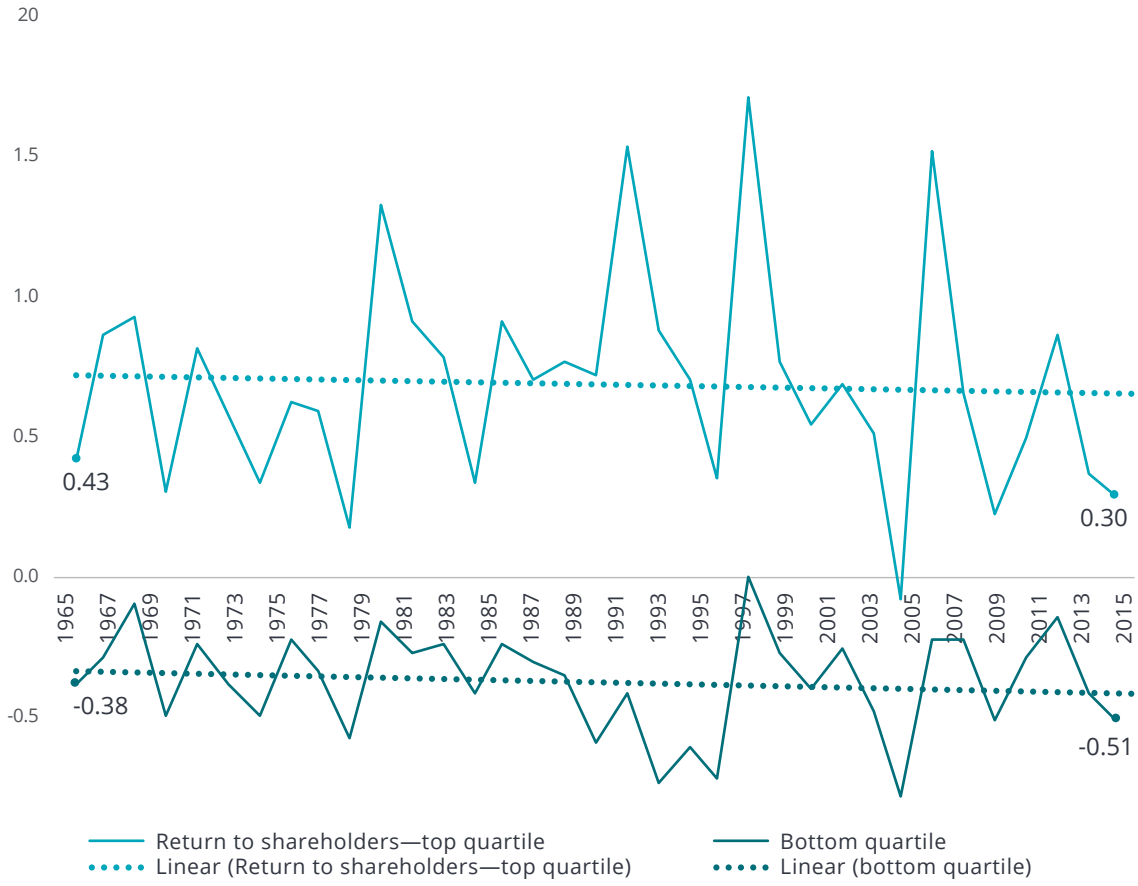


Source: Compustat; Deloitte analysis; Thomas C. Powell and Ingo Reinhardt, "Rank friction: An ordinal approach to persistent profitability," Strategic Management 31(11), November 2010, pp. 1244–55.

The topple rate reflects the difficulty companies have sustaining performance. Between 1965 and 2012, the topple rate (the rate at which companies change ranks) for all companies with more than $100 million in annual net sales increased as competition exposed low performers and ate away at returns. The topple rate fell after spiking in 2008 but has begun to rise again.

SHAREHOLDER VALUE GAP

Figure 24. Returns to shareholders by quartile



Returns to shareholders vary widely year to year; however, the trend for bottom-quartile companies is declining.

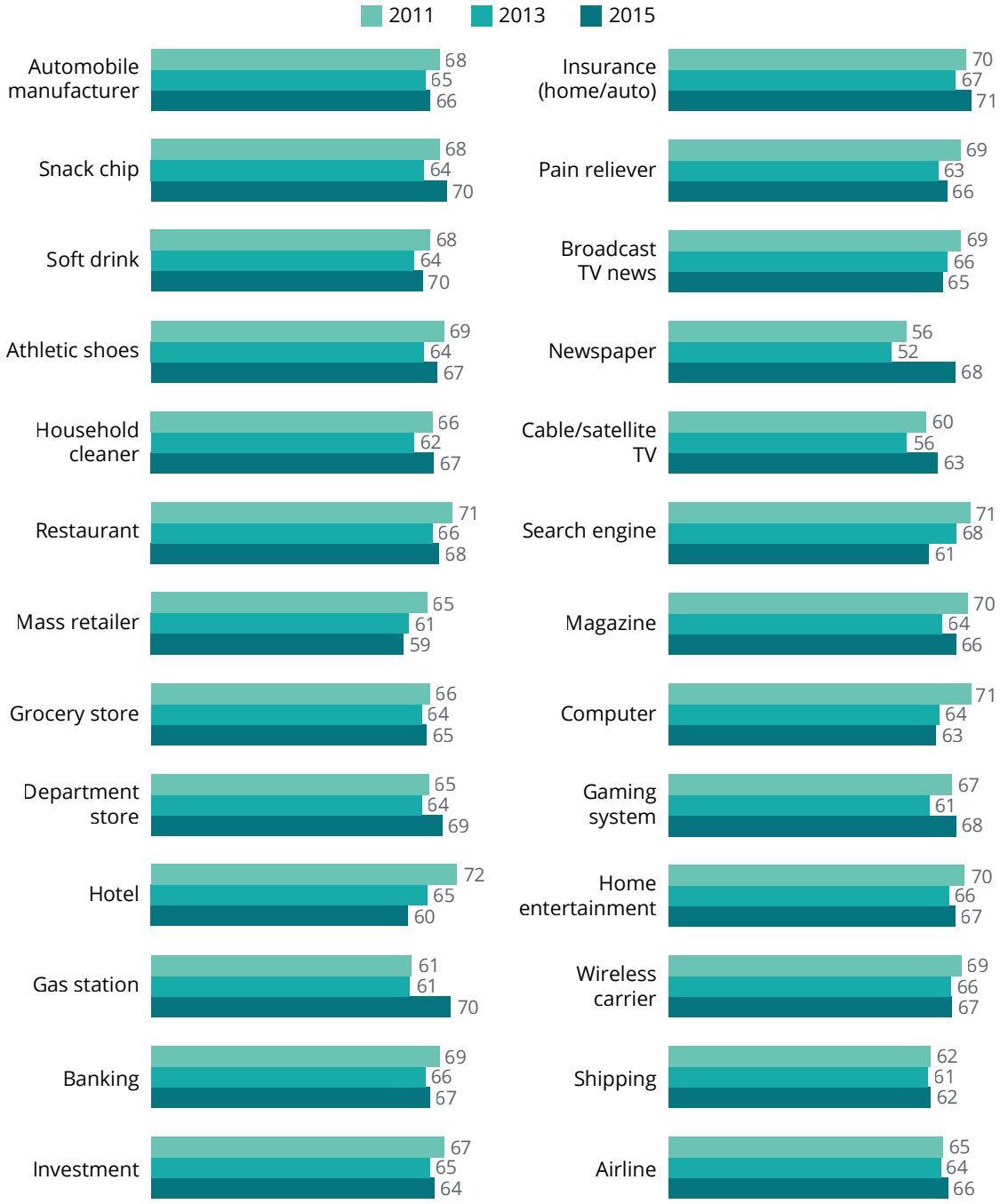
Source: Compustat; Deloitte analysis.

Over the long term, the upper quartile of companies—the "winners"—have only slightly increased the rate of return to shareholders. Meanwhile, in the lower quartile, firms are destroying shareholder value at a faster rate.

People

CONSUMER POWER INDEX

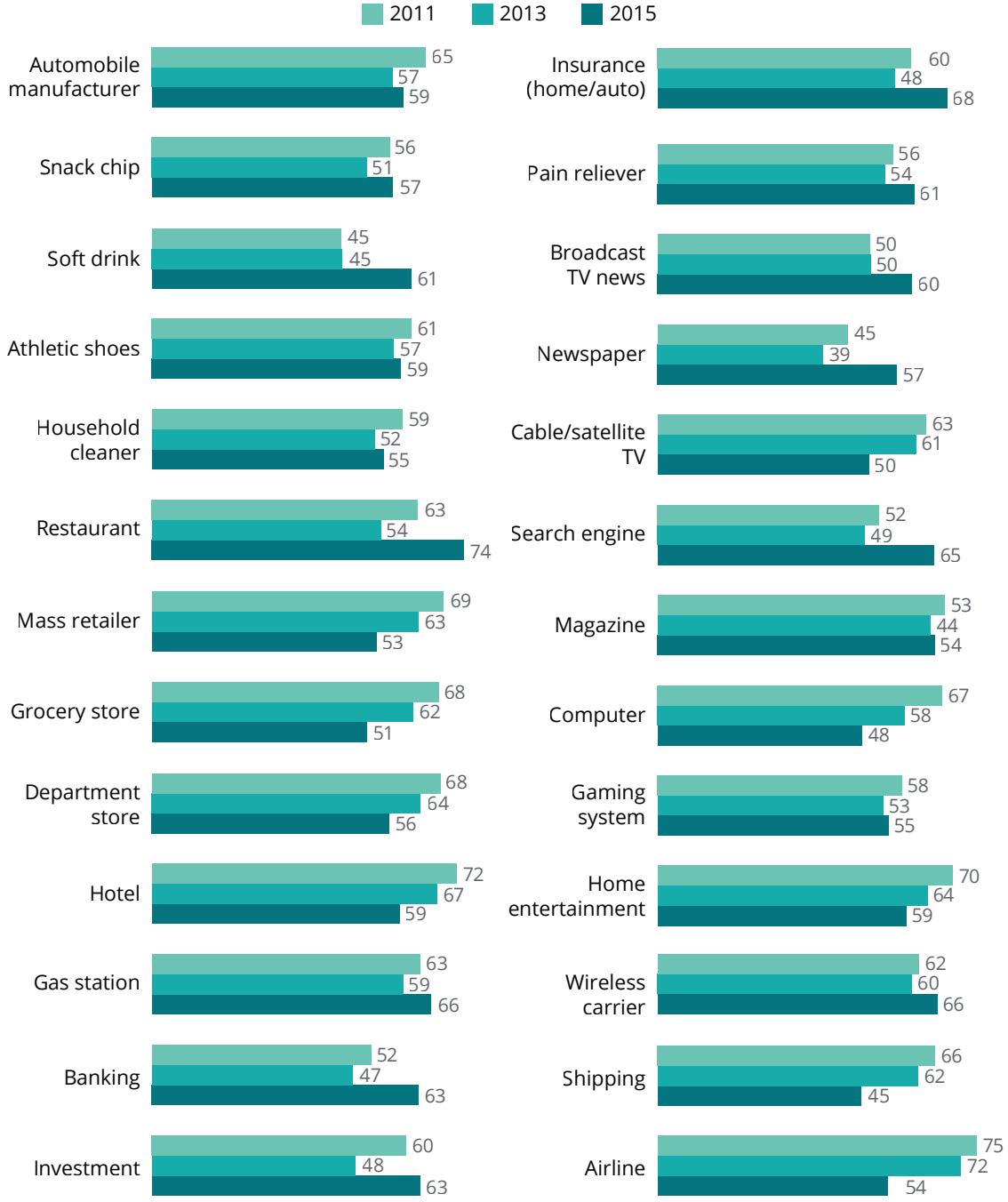
Figure 25. Consumer power by category (2009–2015)



Higher scores indicate more consumer power. Across most consumer categories, consumers' perception of their power is high. Even at the low end, newspapers and cable/satellite TV, the balance still favors the consumer.

Source: IPSOS; Deloitte analysis.

Figure 26. Brand disloyalty index

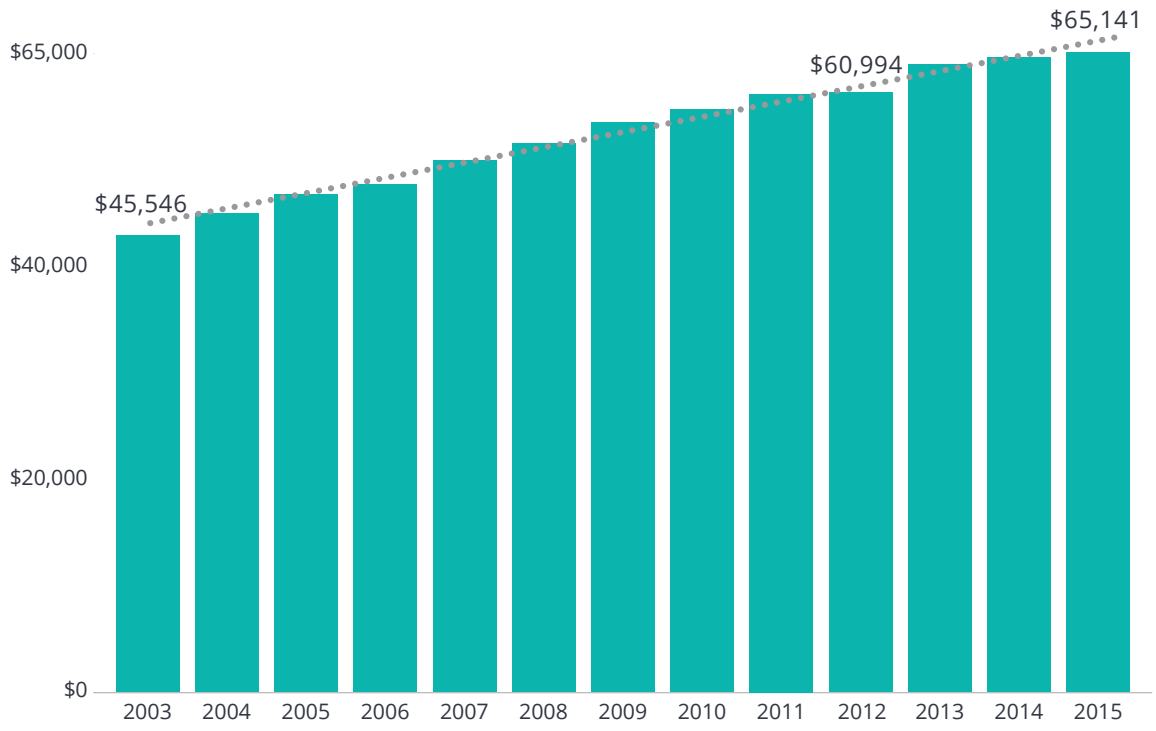


Higher scores indicate higher brand disloyalty. Consumers continue to be less loyal to brands overall than a decade ago. Airlines, shipping, computers, TV, hotels, retailers, and grocery stores have all seen a decrease in brand disloyalty, potentially a sign that some brands are learning to connect with and personalize to customers in more effective ways.

Source: IPSOS; Deloitte analysis.

RETURNS TO TALENT

Figure 27. Returns to talent: Creative class compensation gap

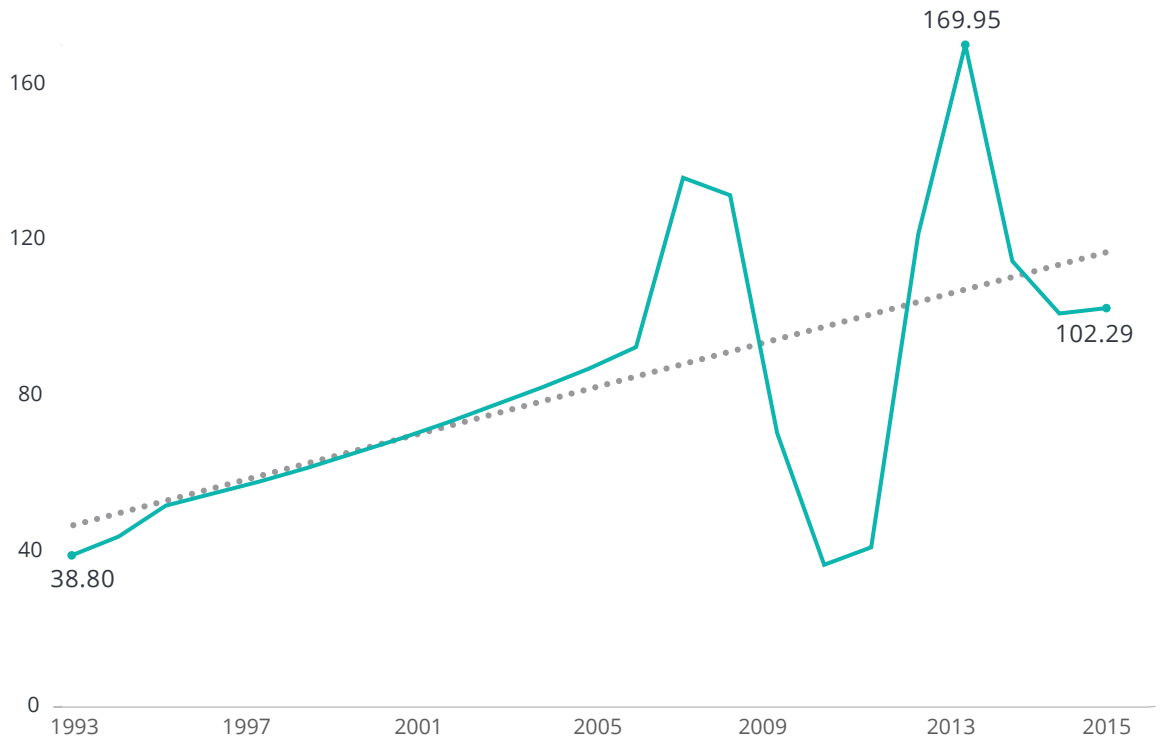


Sources: Bureau of Labor Statistics; Richard Florida's *Rise of the Creative Class*.

Workers in the "creative" class, as defined by Richard Florida, are reaping relatively more rewards (in the form of compensation) than the rest of the US labor force. The compensation gap between the creative class and the rest of the workforce has steadily widened over the past 10 years.

EXECUTIVE TURNOVER

Figure 28. Executive turnover index



Executive turnover has declined after a sharp spike 2010–2012.

Source: Leading technology research vendor.

Over the long term, executives are leaving their positions (resigning, retiring, or joining different companies) at an increasing rate. Turnover may accelerate as a result of increasing performance pressures but also depends on the perception of other options available to executives.

ENDNOTES

1. For further discussion of the cumulative effect of exponentials and advances in adjacent domains on the pace of change, see John Hagel, John Seely Brown, Tamara Samoylova, and Michael Lui, *From exponential technologies to exponential innovation*, Deloitte University Press, October 4, 2013, https://dupress.deloitte.com/dup-us-en/industry/technology/from-exponential-technologies-to-exponential-innovation.html.

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11. Stuart Dredge, "Joseph Garrett, the children's presenter with 7.8 million subscribers," *Guardian*, August 28, 2016, www.theguardian.com/technology/2016/aug/28/stampy-joseph-garrett-youtube-childrens-presenter-millions-of-viewers.

12. David Yi, "Michelle Phan is starting over," *Mashable*, February 13, 2016, http://mashable.com/2016/02/13/michelle-phan-starting-over/.

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14. John Hagel, John Seely Brown, Tamara Samoylova, and Michael Lui, *Success or struggle: ROA as a true measure of business performance*, Deloitte University Press, October 30, 2013, https://dupress.deloitte.com/dup-us-en/topics/operations/success-or-struggle-roa-as-a-true-measure-of-business-performance.html.

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