WINNING THE '20s

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Preface

The world feels very different at the end of this decade than it did when we started out—and we have no reason to think that the changes in the decade ahead will be any less dramatic. For every business leader juggling short-term goals and the challenges of long-term success, now is the right time to step back and understand what it will take to win in the 2020s.

Our work with organizations across the globe has helped us formulate a clear point of view on how to survive and thrive in the coming decade. We analyzed trends in technology and society, looked at how pioneering companies are embracing new ways of thinking about business, leveraged the expertise of leaders from across BCG, and refined our view during discussions with our senior clients.

With this report, we welcome you to the conversation and would be pleased to hear your reactions and thoughts. The two of us, the experts who share perspectives on the individual themes, and our teams around the world look forward to engaging with you.

Rich Lesser
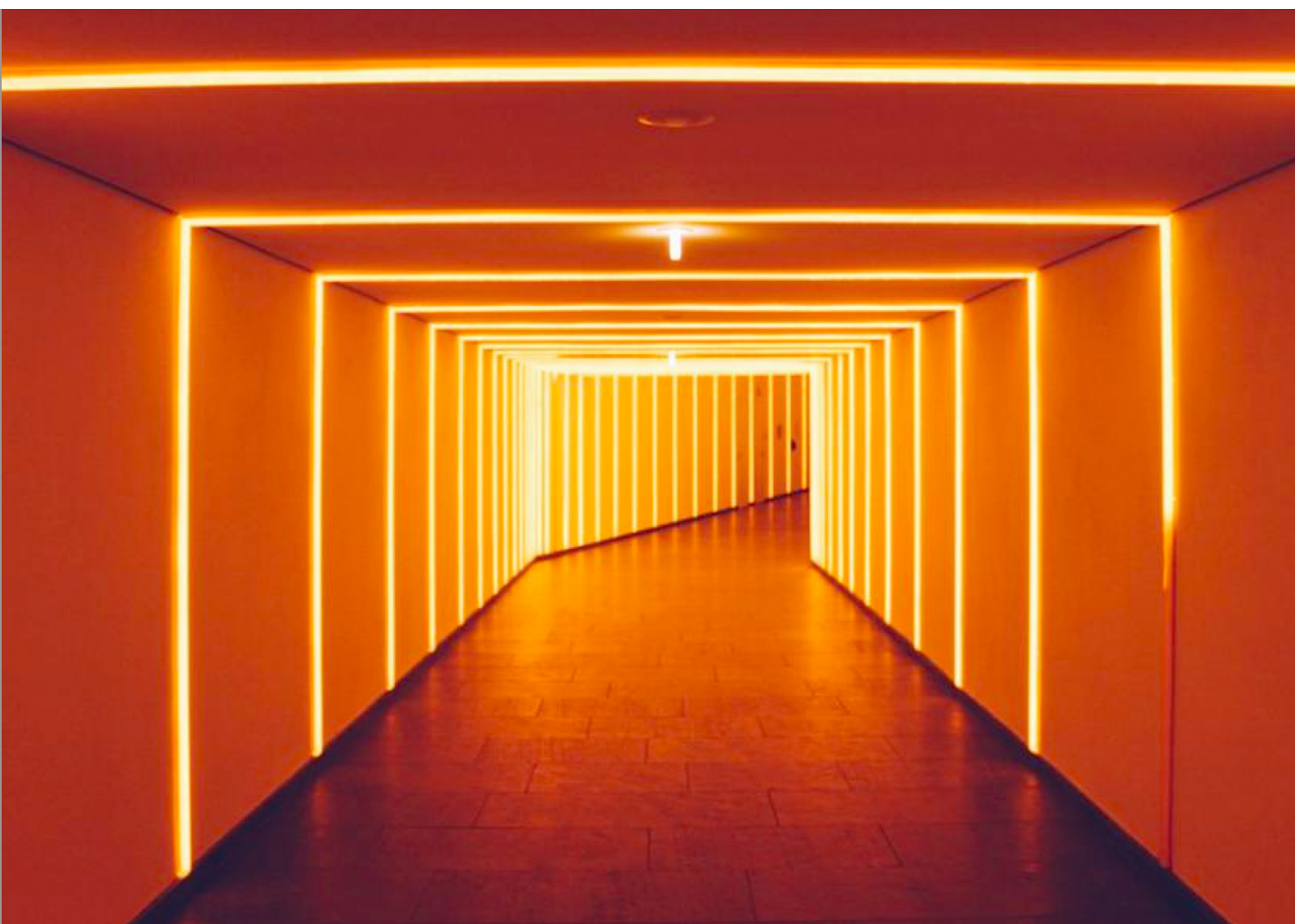*President and CEO*
Boston Consulting Group

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Winning the '20s

Winning the '20s

A LEADERSHIP AGENDA FOR THE NEXT DECADE

By Rich Lesser, Martin Reeves, Kevin Whitaker, and Rich Hutchinson

The winners in business have shifted markedly in the past decade. When the 2010s began, the world's ten most valuable public companies by market capitalization were based in five countries, only two of them were in the tech sector, and none was worth more than $400 billion. Today, all of the top ten are in the US and China, the majority are tech companies, and some at least temporarily have surpassed $1 trillion in value.[1]

Given the relentlessness of change on multiple dimensions, the keys to success are likely to be just as different in ten years' time. What will it take to win in the 2020s?

Emerging Challenges Will Reshape Business

The future competitive environment will likely be shaped by multiple trends that are already unfolding today:

- Artificial intelligence is rapidly advancing, and pioneers are advancing beyond spot applications to implement AI at scale.

- Businesses are increasingly organized into multicompany "ecosystems" that defy traditional industry boundaries and blur the distinction between competitors and collaborators, and producers and consumers.

- Technology is beginning to redefine the nature of work, as well as the relationship between the company and the individual, as both employee and customer.

- The rise of China is challenging the global economic order and the institutions and rules that have defined it.

- Long-term global growth projections have been falling, driven in part by an ongoing deceleration in working-age population growth across major economies.

- Society is increasingly scrutinizing the social impact of technology and the sustainability and broader contribution of business.

- Investor activism and the role of private capital are rising in many parts of the world.

- The combination of these forces is producing multidimensional uncertainty, which confounds traditional forecasting and planning-based approaches for harnessing the future.

To stay ahead of these trends, leaders need to question their current assumptions and retool their companies for the coming decade. This goes for both traditional incumbents and younger digital giants, who will face very different but equally critical challenges in the 2020s—and would do well to learn from each other's strengths.

Many of today's leading tech companies have succeeded by building highly scalable digital platforms. But as purely digital opportunities are depleted (especially the opportunity to dominate broad, consumer-oriented digital ecosystems), new opportunities will come increasingly from combining digital technology with existing physical assets. To succeed, digital natives will need to embrace the messier world of specialized assets and industrial customers. They will also need to "come of age" by managing leadership transitions, avoiding the bureaucracy and inertia that generally come with greater size and a longer history, and developing new strategies to preserve trust among users

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1. Based on market capitalization at the end of 2018 Q3.

and society at large—challenges that traditional companies have considerably more experience with.

Meanwhile, a new era of competition will provide an opportunity for the resurgence of some incumbents. But the ones that succeed in the 2020s will look very different than they do today—they will have evolved their businesses to harness new technologies and reshaped their external relationships, organizations, and approaches accordingly.

So, how should you prepare your company to avoid being left behind in the coming decade and emerge as a winner in a rapidly evolving landscape?

A Leadership Agenda to Win the '20s

While many aspects of the agenda will vary by industry and region, we see five powerful emerging imperatives that will cut across industries and geographies.

Master the new logic of competition. Internet and mobile technology ushered in the information age and profoundly affected technology-intensive and consumer-facing industries such as electronics, communications, entertainment, and retail. But the emerging wave of technology—including sensors, the Internet of Things, and artificial intelligence—will turn every business into an information business. The combination of an exponential increase in data, better tools to mine insights from that data, and a fast-changing business environment means that companies will increasingly need to, and be able to, *compete on the rate of learning.*

Scale will take on a new significance in the learning economy. Instead of the "economies of scale" that today's leaders grew up with—based on a predictable reduction of marginal production costs across a relatively uniform offering—tomorrow's leaders will pursue "economies of learning," based on identifying and fulfilling each customer's changing needs by leveraging data and technology.

The arenas of competition will also look different in the 2020s, requiring new perspectives and capabilities. The familiar picture of a small number of companies producing a common end product and competing within well-defined industry boundaries will be replaced by one where competition and collaboration occur within and between ecosystems. Because ecosystems are fluid and dynamic, and not perfectly controllable even by the orchestrator, companies will need to be much more externally oriented, to deploy influence indirectly through platforms and marketplaces, and to coevolve with ecosystem partners.

Orchestrators of ecosystems can leverage the assets of other participants, and ecosystem-based competition tends to have a winner-take-all nature. These factors are already causing rapidly rising valuations relative to tangible assets for the top companies, as well as an increasing gap between the profitability of high and low performers. But there is not yet any playbook for how to harness this premium: practice is racing ahead of theory, and pioneers who can crack the code on ecosystems will be greatly advantaged.

Finally, companies will increasingly compete on *resilience*. Accelerating technological change, political gridlock, a shifting geopolitical power map, the increased scrutiny of business, and the polarization of society all point to an era of protracted uncertainty, in which corporate life cycles are likely to continue shrinking. Companies will therefore need to worry not only about the competitiveness of their immediate game but also about the durability of that game and their ability to weather unanticipated shocks.

Most of today's incumbents—designed for relatively stable, classical business environments—are not well adapted for this more dynamic environment. Therefore, today's leaders need to fundamentally reinvent the organizational model in order to become future winners.

Design the company of the future. Big data and deep learning have transformed our ability to learn, and the next generation of technologies will undoubtedly bring even more possibilities. History has shown, however, that applying new technologies to existing processes and structures generally yields only incremental gains. To unlock the learning potential of new technologies, leaders need to reinvent the enterprise as *a next-generation learning organization*.

Merely applying AI to individual process steps is not enough: To increase the ability of organizations to learn in aggregate, they must build integrated learning loops that gather information from data ecosystems, continuously derive insights using machine learning, and act on those insights autonomously, all at the speed of algorithms rather than the speed of human hierarchies.

But organizations must not learn only on algorithmic timescales—they must also better understand and position themselves for the slow-moving forces, such as social and political shifts, that are increasingly transforming business.

To learn on *multiple* timescales, leaders will need to design organizations that synergistically combine humans and machines. Algorithms should be trusted to recognize pat-

terns in data and act on them autonomously, while humans should focus on higher-order tasks like validating algorithms, imagining new possibilities, and designing and updating the hybrid "human + machine" organization itself. This division of labor also requires rethinking human–machine interfaces so that humans can trust and productively interact with machines. Collectively, these imperatives demand a massive evolution of organizational capabilities and the creation of new "learning contracts" between employees and enterprises.

Many of these principles are already being implemented in isolated domains, such as the operations of digital marketplaces. But to win the '20s, the same principles must be applied to all parts of the organization in order to create a "self-tuning enterprise" that constantly learns and adapts to the environment. Such organizations must be designed with flexible backbone systems, evolving business models, and, above all, a new model of management—one based on biological principles such as experimentation and co-evolution, rather than traditional top-down decision making and slow cycle planning. Management needs to shift its emphasis from designing hardwired structures and procedures to orchestrating flexible and dynamic systems.

Apply the science of organizational change. Reinventing organizations to compete in the 2020s will not be a trivial task. Whether because of risk aversion or complacency stemming from today's increasingly concentrated industries and elevated profitability levels, leading companies may be understandably reluctant to unleash fundamental change preemptively. But our research shows that the single biggest factor influencing the success of major change programs is how early they are initiated. It is therefore critical to create a sense of urgency within the organization to ensure that everyone truly understands the need for change.

Even for companies that are committed to such transformation, it can be a risky endeavor: our research shows that most large-scale change efforts fail. Therefore, leaders need to employ *evidence-based transformation*—understanding empirically what works and why, rather than relying on plausible assertions and rules of thumb. In an era when many powerful forces are revolutionizing how organizations function, building repeatable transformation capabilities will be more important than ever.

Leaders also need to de-average and differentiate their approaches to change. Large-scale transformation programs comprise multiple change challenges, from exploring new fields and approaches, to adaptively refining new models, to implementing structured change with clear objectives and means. Leaders will need to diversify their approaches to change accordingly, moving beyond the monolithic programs centered only on PMOs and Gantt charts. By adopting continuous change as the default, episodic change programs will give way to change as an ongoing operating imperative.

Embrace the business imperative of diversity. Diversity is not only a moral imperative—it can also make businesses more effective in the long run. Our study of more than 1,700 companies around the world shows that diversity increases the capacity for innovation by expanding the range of a company's ideas and options. And as the speed of change accelerates, innovation and reinvention are increasingly necessary to stay on top.

The most obvious sources of diversity, such as gender, ethnicity, and sexual orientation, are indeed important in driving innovation, but variety of work experience and educational background is also meaningful. Importantly, these factors are mostly additive, so companies that are diverse on multiple dimensions are even more innovative. Structural diversity alone, however, is insufficient. Organizations also need an environment conducive to embracing new ideas, and they must install open communication practices, participative leadership, commitment to building diversity in top management, openness to testing multiple ideas, and other measures to unlock the full potential of diversity.

Diversity also increases resilience. Like biological communities and organisms, companies that encompass more heterogeneity are likely to withstand unanticipated changes better. Enterprises that embrace diverse talent, ideas, and sources of growth will have an advantage in understanding and adapting to external shocks—which increasingly threaten the survival of individual businesses.

Optimize for both social *and* business value. Several trends are fueling resentment toward business. The climate crisis and other negative externalities are increasingly visible, automation is sparking fear about the future of work, trust in technology is falling, inequality has risen markedly within many countries, and the most successful companies are becoming larger, more visible, and more powerful. As a result, the role of business in society is coming under question, risking the sustainability of the current model of corporate capitalism.

Political institutions are not likely to address these concerns effectively in the foreseeable future. Demographics that portend lower global growth, massive public debts that limit investment, tensions resulting from international migration, and a social media landscape that amplifies extreme voices are all likely to continue fueling divisive,

populist politics. The rise of China, and the growing US response, challenge the stability of multinational institutions that businesses rely on. In an era characterized by polarization, everything in business will likely become "political."

To keep the game of business going, business needs to be part of the solution. All stakeholders increasingly expect companies to play a more prominent role in addressing social challenges, which will be reinforced as newly adopted metrics and standards make their efforts and impacts more transparent. Leaders need to focus on their companies' *total societal impact*—in other words, they need to make sure that their businesses create social as well as economic value. Not only can this increase financial performance in the long run, but it can strengthen the social contract between business and society, ensuring that the relationship is able to endure. Leaders will need to master the art of corporate statesmanship, proactively shaping the critical societal issues that will increasingly change the game of businesses.

Winning the present is challenging enough, but the more essential task of leadership is winning the future. The fast-changing world will test our status quo assumptions, and it is critical to look forward in developing an agenda for the next decade. Here we've offered a starting point for that journey. We invite all leaders who aim to win the '20s to join the conversation.

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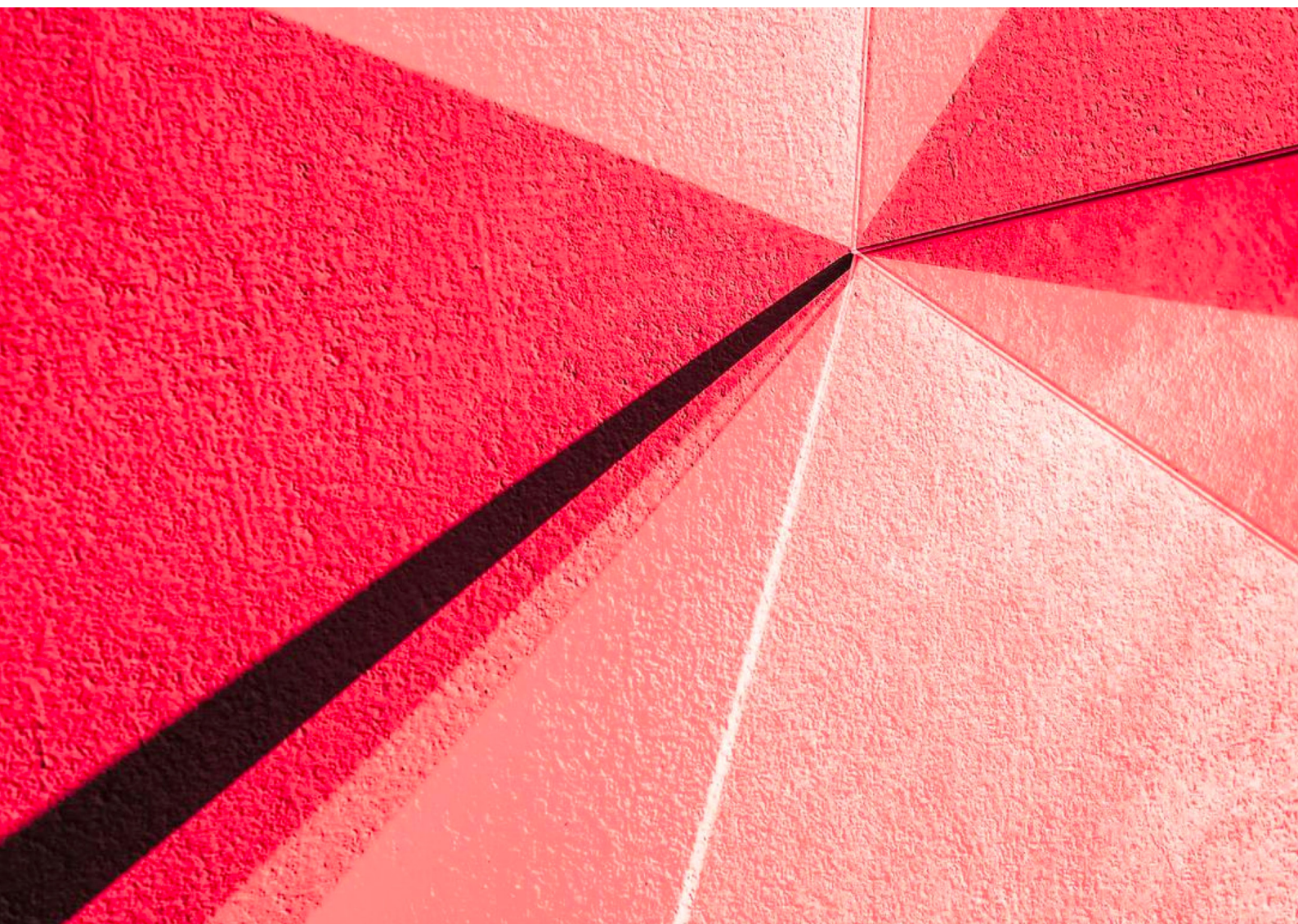
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The New Logic of Competition

The New Logic of Competition

By Ryoji Kimura, Martin Reeves, and Kevin Whitaker

Many of today's business leaders came of age studying and experiencing a classical model of competition. Most large companies participated in well-defined industries selling similar sets of products; they gained advantage by pursuing economies of scale and capabilities such as efficiency and quality; and they followed a process of deliberate analysis, planning, and focused execution.

The traditional playbook for strategy is no longer sufficient. In all businesses, competition is becoming more complex and dynamic. Industry boundaries are blurring. Product and company lifespans are shrinking. Technological progress and disruption are rapidly transforming business. High economic, political, and competitive uncertainty is conspicuous and likely to persist for the foreseeable future.

Accordingly, in addition to the classical advantages of scale, companies are now contending with new dimensions of competition—*shaping* malleable situations, *adapting* to uncertain ones, and *surviving* harsh ones—which in turn require new approaches. And the stakes are higher than ever: the gap in performance between the top- and bottom-quartile companies has increased in each of the past six decades.[2]

Today's business leaders are dealing with complex competitive concerns in the short run. But as the 2020s approach, they must also look beyond today's situation and understand at a more fundamental level what will separate the winners from the losers in the next decade. We see five new imperatives of competition that will come to the forefront for many businesses (see Exhibit 2.1):

- Increasing the rate of organizational learning

- Leveraging multicompany ecosystems

- Spanning both the physical and the digital world

- Imagining and harnessing new ideas

- Achieving resilience in the face of uncertainty

In short, the logic of competition has changed—from a predictable game with stable offerings and competitors to a complex, dynamic game that is played across many dimensions. Leaders who understand this, and re-equip their organizations accordingly, will be best positioned to win in the next decade.
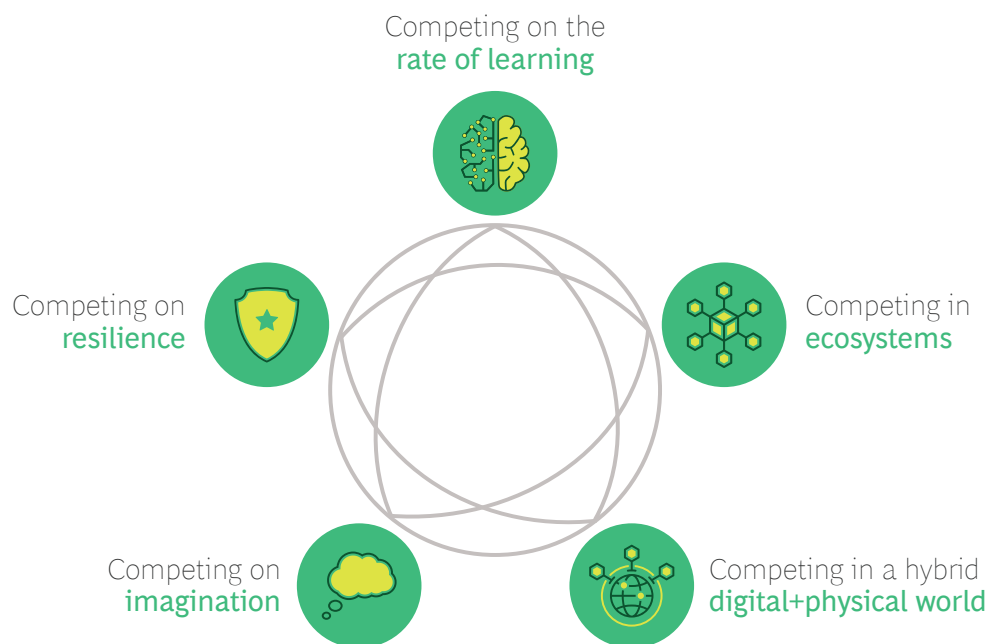
Competing on the Rate of Learning

Learning has long been considered important in business. As Bruce Henderson, BCG's founder, observed more than 50 years ago, companies can generally reduce their marginal production costs at a predictable rate as their cumulative experience grows. But in traditional models of learning, the knowledge that matters—learning how to make one product or execute one process more efficiently—is static and enduring. Going forward, it will instead be necessary to build organizational capabilities for dynamic learning—learning how to do new things, and "learning how to learn" by leveraging new technology.

Today, artificial intelligence, sensors, and digital platforms have already increased the opportunity for learning more

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2. Based on the average difference in EBIT margin between companies ranking in the top quartile and those in the bottom quartile in each of 71 industries (among US public companies with at least $50 million in revenue).

Exhibit 2.1 - Five New Imperatives of Competition

Competing on the rate of learning

Competing in ecosystems

Competing in a hybrid digital+physical world

Competing on imagination

Competing on resilience

Source: BCG Henderson Institute.

effectively—but competing on the rate of learning will become a necessity by the 2020s. The dynamic, uncertain business environment will require companies to focus more on discovery and adaptation rather than only on forecasting and planning.

Companies will therefore increasingly adopt and expand their use of AI, raising the competitive bar for learning. And the benefits will generate a "data flywheel" effect—companies that learn faster will have better offerings, attracting more customers and more data, further increasing their ability to learn.

For example, Netflix's algorithms take in behavioral data from the company's video streaming platform and automatically provide dynamic, personalized recommendations for each user; this improves the product, keeping more users on the platform for longer and generating more data to further fuel the learning cycle. (See Exhibit 2.2.)

However, there is an enormous gap between the traditional challenge of learning to improve a static process and the new imperative to continuously learn new things throughout the organization. Therefore, successfully competing on learning will require more than simply plugging AI into today's processes and structures. Instead, companies will need to:

- Pursue a digital agenda that embraces all modes of technology relevant to learning—including sensors, platforms, algorithms, data, and automated decision making.

- Connect them in *integrated learning architectures* that can learn at the speed of data rather than being gated by slower hierarchical decision making.

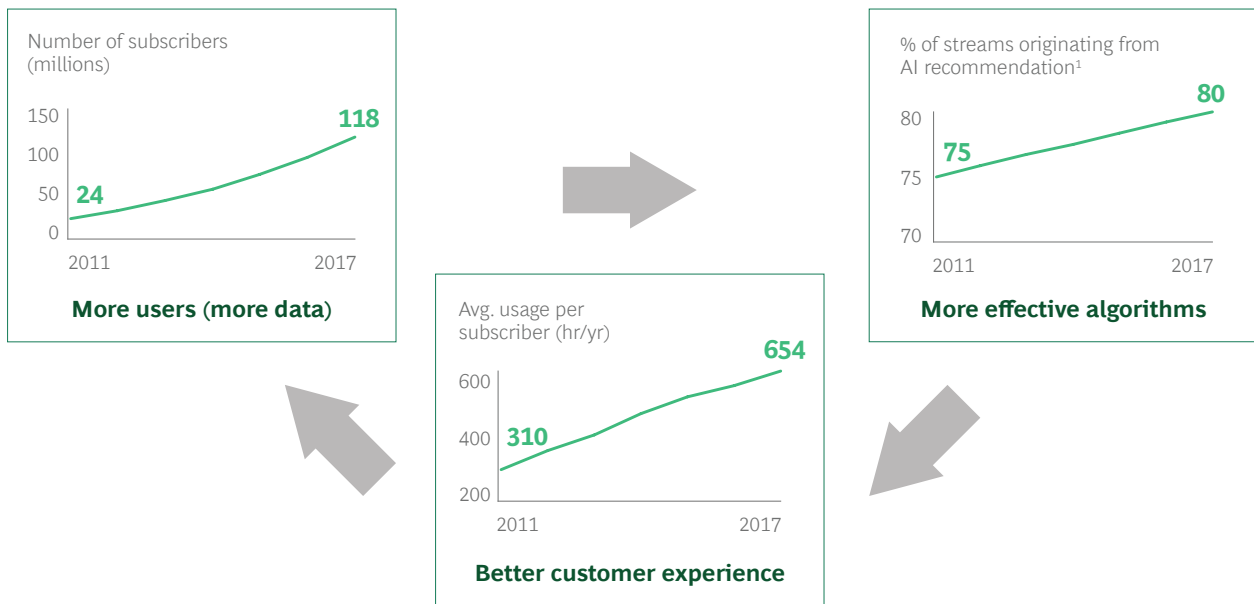- Develop business models that are able to create and act on dynamic, personalized customer insights.

Competing in Ecosystems

Classical models of competition assume that discrete companies make similar products and compete within clearly delineated industries. But technology has dramatically reduced communication and transaction costs, weakening the Coasean logic for combining many activities inside a few vertically integrated firms.[3] At the same time, uncertainty and disruption require individual firms to be more adaptable, and they make business environments increasingly shapeable. Companies now have opportunities to influence the development of the market in their favor, but they can do this only by coordinating with other stakeholders.

3. Ronald Coase, "The Nature of the Firm," 1937.

Exhibit 2.2 - Netflix Leverages a Learning and Data Flywheel

Number of subscribers (millions)

- 2011: 24
- 2017: 118

More users (more data)

Avg. usage per subscriber (hr/yr)

- 2011: 310
- 2017: 654

Better customer experience

% of streams originating from AI recommendation[1]

- 2011: 75
- 2017: 80

More effective algorithms

Sources: Company reports; Wired; Business Insider; BCG Henderson Institute analysis.

[1]Based on company releases and news reports.

As a result of these forces, new industrial architectures are emerging based on the coordination of *ecosystems* —complex, semifluid networks of companies that challenge several traditional business assumptions. Ecosystems blur the boundaries of the company: for example, platform businesses such as Uber and Lyft rely heavily on "gig economy" workers who are not direct employees but rather temporary freelancers. Ecosystems also blur industry boundaries: for example, automotive ecosystems include not just traditional suppliers but also connectivity, software, and cloud storage providers. And they blur the distinction between collaborators and competitors: for example, Amazon and third-party merchants have a symbiotic relationship, while the company competes with those merchants by selling private-label brands.

A few digital giants have demonstrated that successfully orchestrating ecosystems can yield outsized returns. Indeed, many of the largest and most profitable companies in the world are ecosystem-based businesses.[4] One example is Alibaba, which leads China's massive e-commerce market not by fulfilling most functions directly but by building platforms that connect manufacturers, logistics providers, marketers, and other relevant service providers with one another and with end users. By decentralizing business activities across large groups of firms or individuals, the Alibaba ecosystem is rapidly adaptive to consumers' needs

and also highly scalable—resulting in 44% annualized revenue growth for the company in the past five years.

The playbook for how to emulate these ecosystem pioneers has not yet been fully codified, but a few imperatives are becoming increasingly clear:

- Adopt a fundamentally different perspective toward strategy, based on embracing principles like external orientation, common platforms, co-evolution, emergence, and indirect monetization.

- Determine what role your company can play in your ecosystem—not all companies can be the orchestrator.

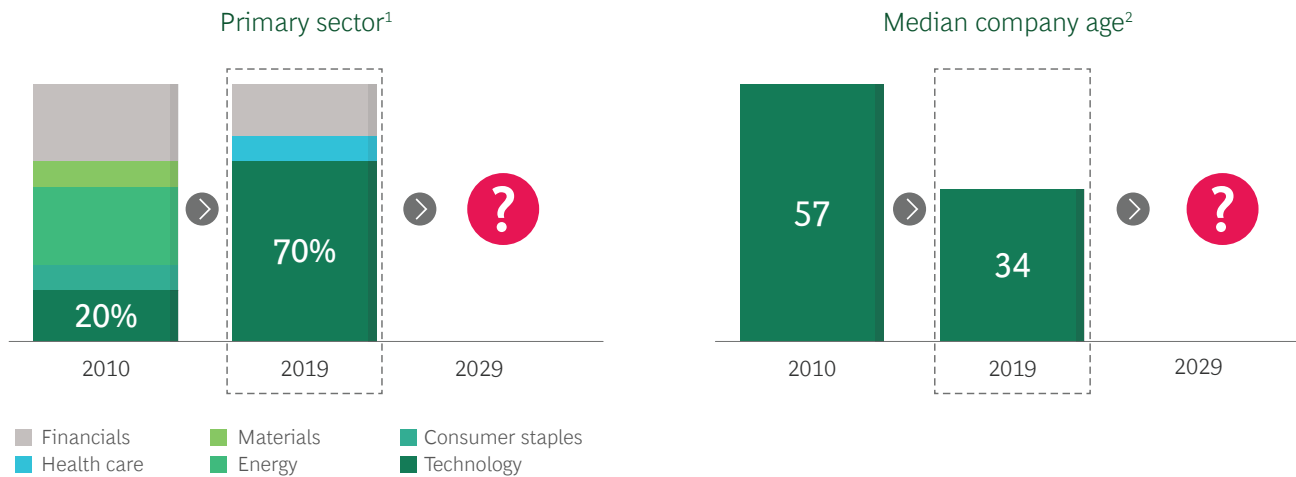- Ensure that your company creates value for the ecosystem broadly, not just for itself.

Competing in the Physical *and* the Digital World

Today's most valuable and fastest-growing businesses are disproportionately young technology companies, which operate ecosystems that are predominantly digital. (See Exhibit 2.3.) But the low-hanging digital fruits in consumer services, including retail, information, and entertainment, seem to have been plucked. New opportunities are likely to

4. At the start of 2019, seven of the world's top ten companies by market capitalization leveraged multicompany ecosystems: Apple, Amazon, Microsoft, Alphabet, Facebook, Alibaba, and Tencent.

Exhibit 2.3 - Young Tech Companies Were the Biggest Winners of the 2010s

DEMOGRAPHICS OF TOP TEN GLOBAL COMPANIES BY MARKET CAPITALIZATION

Primary sector[1]

Stacked bar chart showing primary sector for 2010, 2019, and 2029 (marked with ?). 2010 bar shows Technology at 20%. 2019 bar shows Technology at 70%.

Legend:
- Financials (gray)
- Health care (light blue)
- Materials (light green)
- Energy (green)
- Consumer staples (teal)
- Technology (dark green)

Median company age[2]

Bar chart showing median company age: 2010 = 57, 2019 = 34, 2029 (marked with ?).

Sources: S&P Capital IQ; BCG Henderson Institute analysis.

Note: Based on market capitalization at beginning of year.

[1]Based on GICS classifications; Technology includes information technology, communications services, and internet services & retail.

[2]Years since company founding.

come increasingly from digitizing the physical world, enabled by the rapid development and penetration of AI and the Internet of Things. This will increasingly bring tech companies into areas—such as B2B and businesses involving long-lived and specialized assets—that are still dominated by older incumbent firms.

Early signs of "hybrid" competition at the physical-digital intersection are already emerging. Digital giants are moving into physical sectors: for example, Amazon has opened new retail stores in addition to its acquisition of Whole Foods, while Google has entered automotive and transportation through its Waymo subsidiary. Meanwhile, incumbent companies are furiously pursuing digitization. For example, John Deere has invested heavily in IoT technology by adding connected sensors to its tractors and other equipment. The company collects and analyzes data from each machine, using the insights to provide updates to its equipment or suggestions to users. "Our roadmap is calling for machine learning and AI to find their way into every piece of John Deere equipment over time," said John Stone, the senior vice president for Deere's Intelligent Solutions Group.[5]

These trends point to a new battle between younger digital natives and traditional physical incumbents. But unlike in the past decade, in which upstarts unseated many legacy leaders with purely digital models, the next round is likely to be a more balanced contest. Technology companies no

longer have a limitless social license; in the next decade, they will have to navigate thorny issues like user trust, data privacy, and regulation, which will likely be even more critical in the context of hybrid competition. And incumbents will still have to fight against institutional inertia and the long odds of disruption, but they will be able to better leverage existing relationships and expertise in the physical world. Therefore, the next wave of "natural selection" in business is likely to test *both* digital natives and incumbents—and winners could emerge from either group.

What will make the difference? To succeed in hybrid competition, companies will need to:

- Build strong relationships with actors on both sides of the ecosystem—customers and suppliers.

- Rethink existing business models in order to win the battle for new hybrid markets.

- Adopt good practices for governance of data and algorithms to preserve users' trust.

Competing on Imagination

Companies can no longer expect to succeed by leaning predominantly on their existing business models. Long-run

5. Scott Ferguson, "John Deere Bets the Farm on AI, IoT," Light Reading, March 2018.

economic growth rates have declined in many economies, and demographics point to a continuation of that pattern. Competitive success has become less permanent over time. And markets are increasingly shapeable, increasing the potential reward for innovation. As a result, the ability to generate new ideas is more important than ever.

However, creating new ideas is challenging for many companies. Inertia increases with age and scale, making it harder to create and harness new ideas: our analysis of companies around the world shows that older and larger companies have less vitality, the capacity for sustainable growth and reinvention. (See Exhibit 2.4.) And business and managerial theory has emphasized a "mechanical" view—dominated by easily measurable variables like efficiency and financial outcomes—rather than focusing on how to create new ideas.

To overcome these challenges, companies need to compete on imagination. Imagination lies upstream of innovation: to realize new possibilities, we first need inspiration (a reason to see things differently) and then imagination (the ability to identify possibilities that are not currently the case but could be). Imagination is a uniquely human capability—artificial intelligence today can make sense only of correlative patterns in existing data. As machines automate an increasing share of routine tasks, individual managers will need to focus on imagination to stay relevant and make an impact.
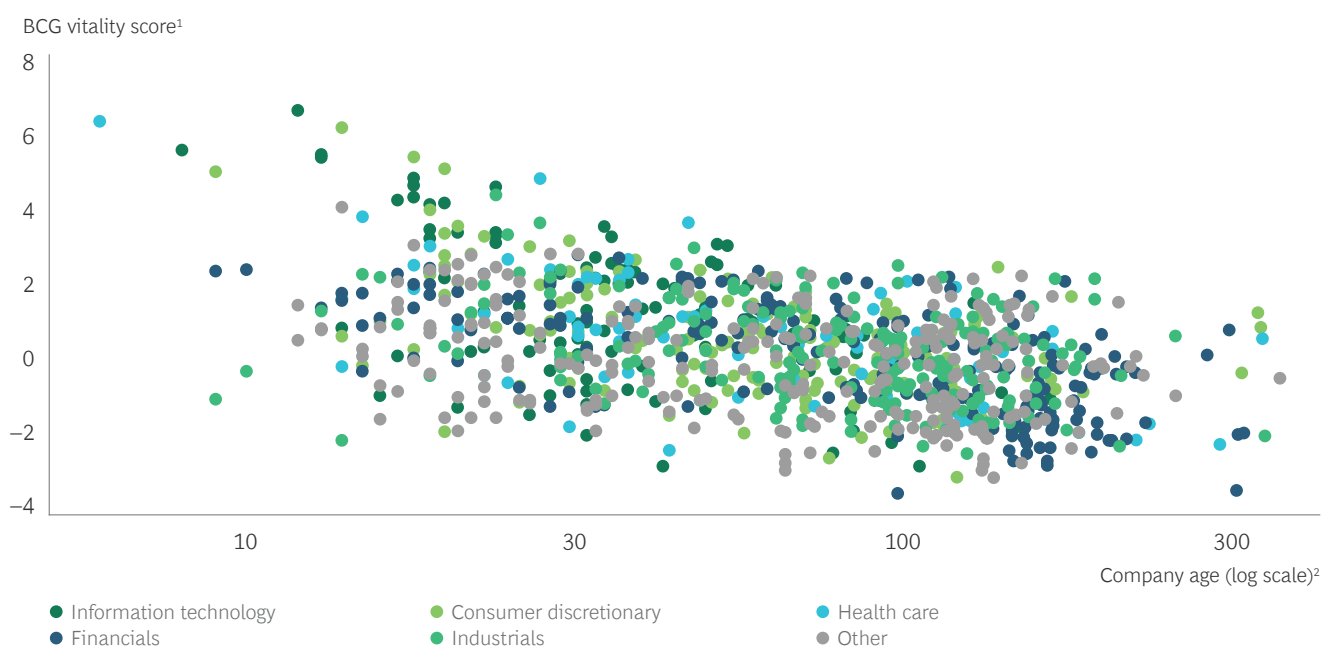
How can companies compete on imagination?

- Focus on anomalies, accidents, and analogies, rather than averages, in order to spark inspiration.

- Enable the open spread and competition of ideas—for example, by limiting hierarchy and empowering employees to experiment and make imaginative proposals.

- Become a "playful corporation" that is able to effortlessly explore new possibilities.

Competing on Resilience

Looking ahead to the 2020s, uncertainty is high on many fronts. Technological change is disrupting businesses and

Exhibit 2.4 - Older Companies Are Generally Less Vital

BCG vitality score[1]

Company age (log scale)[2]

- Information technology
- Financials
- Consumer discretionary
- Industrials
- Health care
- Other

bringing new social, political, and ecological questions to the forefront. Economic institutions are under threat from social divisions and political gridlock. Society is increasingly questioning the inclusivity of growth and the future of work. And planetary risks, such as climate change, are more salient than ever.

Furthermore, deep-seated structural forces indicate that this period of elevated uncertainty is likely to persist: technological progress will not abate; the rise of China as an economic power will continue to challenge international institutions; demographic trends point toward an era of lower global growth, which will further strain societies; and social polarization will continue to challenge governments' ability to effectively respond to national or global risks. (See Exhibit 2.5.)

Under such conditions, it will become more difficult to rely on forecasts and plans. Business leaders will need to consider the larger picture, including economic, social, political, and ecological dimensions, making sure their companies can endure in the face of unanticipated shocks. In other words, businesses will effectively need to compete on resilience.

Survival is already challenging for many businesses today. Building resilience is often at odds with traditional management goals like efficiency and short-run financial maximiza-

tion. But to thrive sustainably in uncertain environments, companies must make resilience an explicit priority:

- Prepare for a range of scenarios to ensure that strategy is robust and risks are survivable.

- Build an adaptive organization that can rapidly adjust to new circumstances—for example, by constantly experimenting to identify new options.

- Proactively contribute to collective action on the biggest issues facing global economies and societies, in order to maintain a social license to operate.

The New Significance of Scale

These new forms of competition are highly intertwined. For example, companies that orchestrate ecosystems will have an advantage in competing on learning, because ecosystems are a rich source of real-time data and digital platforms facilitate experimentation. Many companies will integrate physical and digital assets by leveraging partnerships in hybrid ecosystems. Machine learning and autonomous action will increase humans' need for and ability to focus on imagination. And those shifts will collectively create further unpredictability for business, necessitating strategies for resilience.

Exhibit 2.5 - Global Risks Are Elevated Across Many Dimensions
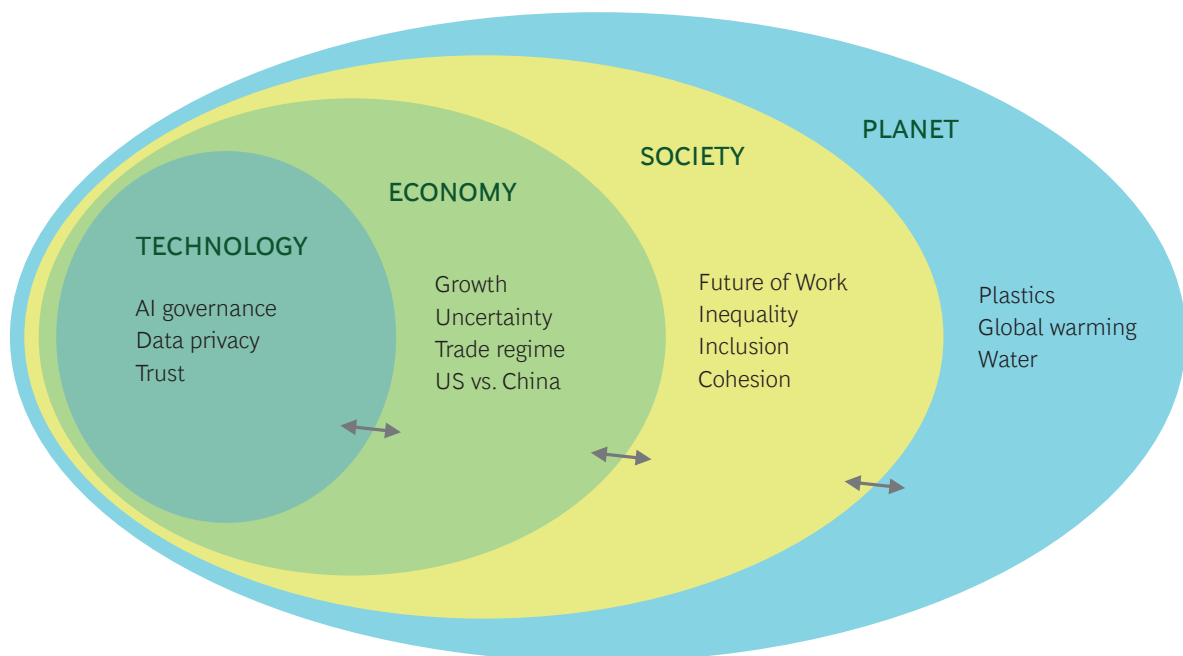
Source: BCG Henderson Institute.

These five emerging aspects of competition point to a new logic for "scale." No longer will scale represent only the traditional value of achieving cost leadership and optimizing the provision of a stable offering. Instead, new kinds of scale will create value across multiple dimensions: scale in the amount of relevant data companies can generate and access, scale in the quantity of learnings that can be extracted from this data, scale in experimentation to diversify the risks of failure, scale in the size and value of collaborative ecosystems, scale in the quantity of new ideas companies can generate, and scale in resilience to buffer the risks of unanticipated shocks.

The capabilities that companies need in order to compete in the next decade will not come automatically. Instead, leaders need to create them by designing the organization of the future—for example, by building autonomous, algorithmic learning loops, by synergistically combining humans and machines, and by rethinking the role of management and leadership.

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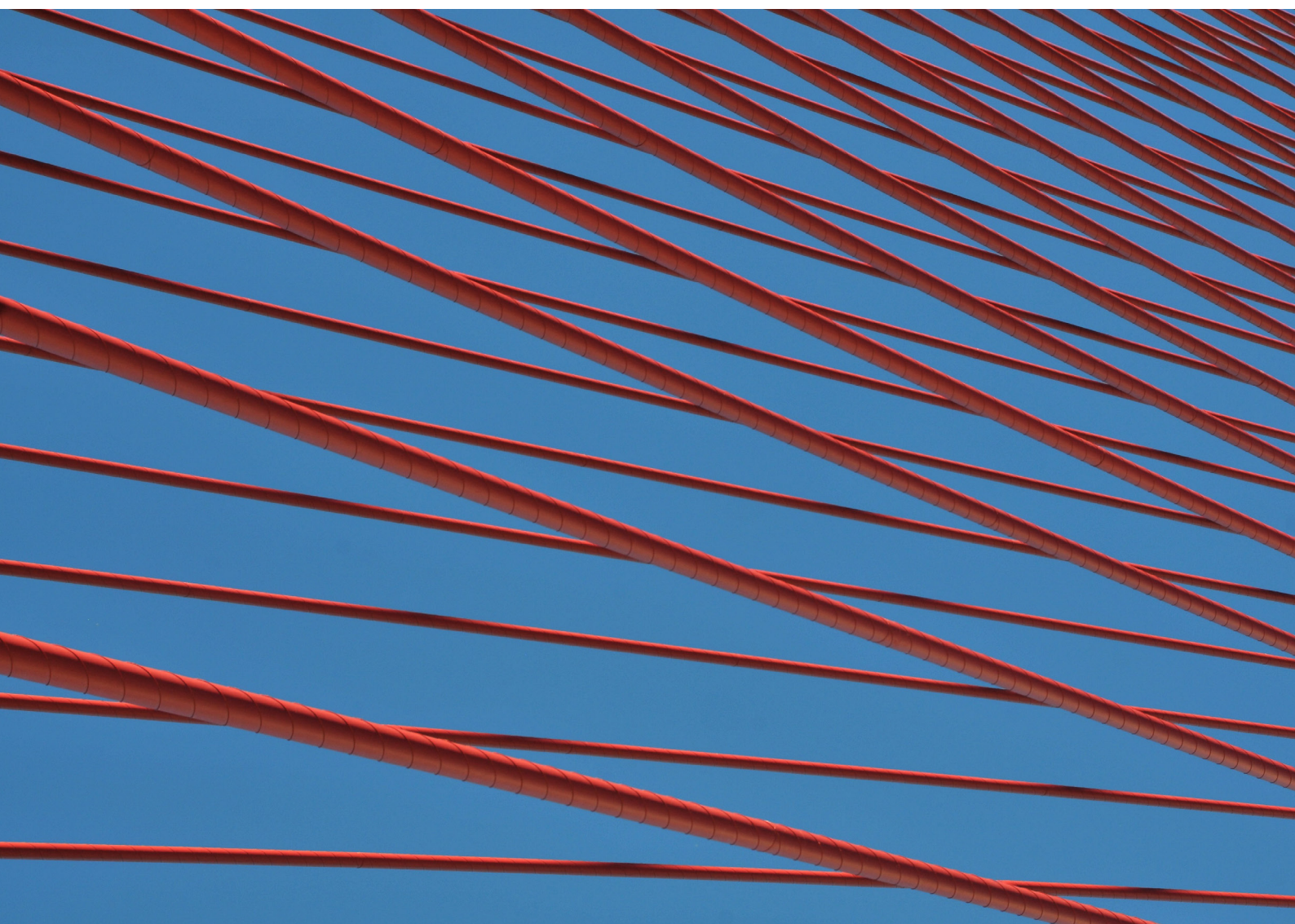
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The Company of the Future

The Company of the Future

By Allison Bailey, Martin Reeves, Kevin Whitaker, and Rich Hutchinson

In the coming decade, companies will increasingly need to compete on the rate of learning. Technology promises to play a critical role: artificial intelligence can detect patterns in complex data sets at extreme speed and scale, enabling dynamic learning. This will allow organizations to constantly adapt to changing realities and surface new opportunities, which will be increasingly important in an uncertain and fast-changing environment.

But for companies to compete on learning, it is not enough merely to adopt AI, which alone can accelerate learning only in individual activities. As with previous transformative technologies, unlocking the full potential of AI—*and* of humans —will require fundamental organizational innovation.[6] In other words, to win the '20s, leaders will need to re-invent the enterprise as a *next-generation learning organization*.

Reimagine the Organization

The next-generation learning organization will need to be redesigned to fulfill several key functions: (See Exhibit 3.1.)

- **Learning on All Timescales.** The growing opportunity and need to learn on faster timescales, driven by technological innovation, is well known—algorithmic trading, dynamic pricing, and real-time customized product recommendations are already a reality in many businesses. But it is perhaps under-appreciated that slow-moving forces are also becoming more important. For example, trade institutions, political structures, wealth stratification, and social attitudes are slowly changing in ways that could have a profound impact on business. Gone are the days when business leaders could focus only on business and treat these broader variables as constants or stable trends. But

such shifts unfold over many years or even decades. In order to thrive sustainably, businesses must learn on all timescales simultaneously.

- **Combining Humans and Machines Optimally.** Machines have been crucial components of businesses for centuries—but in the AI age, they will likely expand rapidly into what has traditionally been considered white-collar work. Instead of merely executing human-directed and human-designed processes, machines will be able to learn and adapt, and will therefore have a greatly expanded role in future organizations. Humans will still be indispensable, but their duties will be quite different when complemented or substituted by intelligent machines.

- **Integrating Economic Activity Beyond Corporate Boundaries.** Businesses are increasingly acting in multicompany ecosystems that incorporate a wide variety of players. Indeed, seven of the world's largest companies, and many of the most profitable ones, are now platform businesses. Ecosystems greatly expand learning potential: they provide access to exponentially more data, they enable rapid experimentation, and they connect with larger networks of suppliers of customers. Harnessing this potential requires redrawing the boundaries of the enterprise and effectively influencing economic activity beyond the orchestrating company.

- **Evolving the Organization Continuously.** The need for dynamic learning does not apply just to customer-facing functions—it also extends to the inner workings of the enterprise. To take advantage of new information and to compete in dynamic, uncertain environments, the organizational context itself needs to be evolvable in the face of changing external conditions.

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6. T. Bresnahan, E. Brynjolfsson, and L. Hitt, "Information Technology, Workplace Organization and the Demand for Skilled Labor: Firm-Level Evidence," *The Quarterly Journal of Economics*, MIT Press, 2002.

Exhibit 3.1 - The Next-Generation Learning Organization
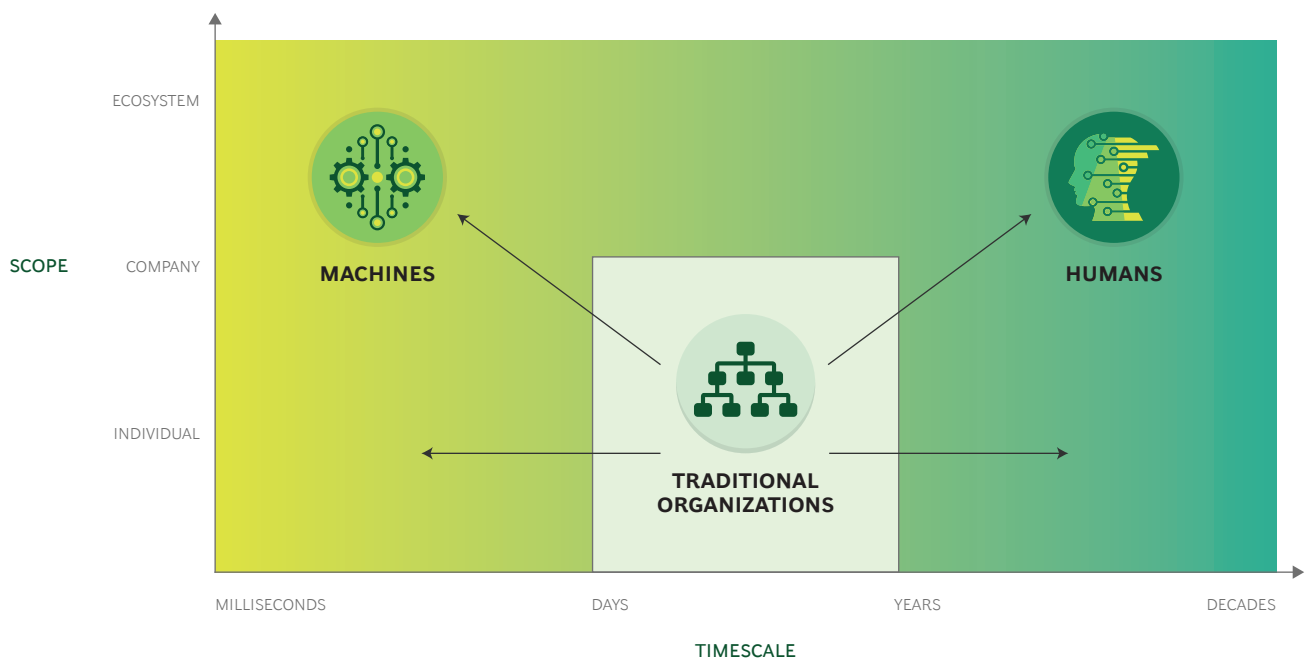
Source: BCG Henderson Institute.

Today's organizations, which were designed for more stable business environments, are not well-suited to perform these functions. Reinventing the organization for the next decade will require embracing five imperatives: (See Exhibit 3.2.)

1. Integrate technologies for seamless learning.

2. Migrate human cognition to new, higher-level activities.

3. Redesign the relationship between machines and humans.

4. Nurture broader ecosystems.

5. Rethink management and leadership accordingly.

Integrate Technologies for Seamless Learning

As powerful as today's emerging technologies are, they will yield only incremental gains if they simply enhance individual steps of existing processes. The effective rate of an organization's learning is gated by its ability to act on new insights. And classical organizations act slowly, owing to their reliance on human decision making and hierarchy.

In order to truly accelerate the speed of learning to algorithmic timescales, organizations will need not only to

automate but also to "autonomize" significant parts of their businesses. In traditional automation, machines execute a predesigned process repeatedly and consistently. In autonomization, machines use continuous feedback to act, learn, and adapt on their own—without the bottleneck of human intervention.

Autonomous systems are designed by combining multiple technologies into *integrated learning loops*. Data from digital platforms automatically flows into AI algorithms, which mine the information in real time to facilitate new insights and decisions. These are wired directly into action systems, which continuously optimize outcomes under changing conditions. These actions produce yet more data that can be fed back through the cycle, closing the loop and allowing the organization to learn at the speed of algorithms.

Some organizations are already implementing autonomous learning systems. For example, Amazon's pricing and product recommendation engines, among dozens of other functions, are operated by AI systems that learn and adapt as new information emerges. And these systems are interconnected, so new data or insights from one part of the business cascade through all other functions, which react accordingly.[7]

In contrast, traditional organizational approaches—for example, unchanging rules or hierarchical decision

7. V. Granville, "21 data science systems used by Amazon to operate its business," Data Science Central, 2015.

Exhibit 3.2 - Five Imperatives for the Company of the Future
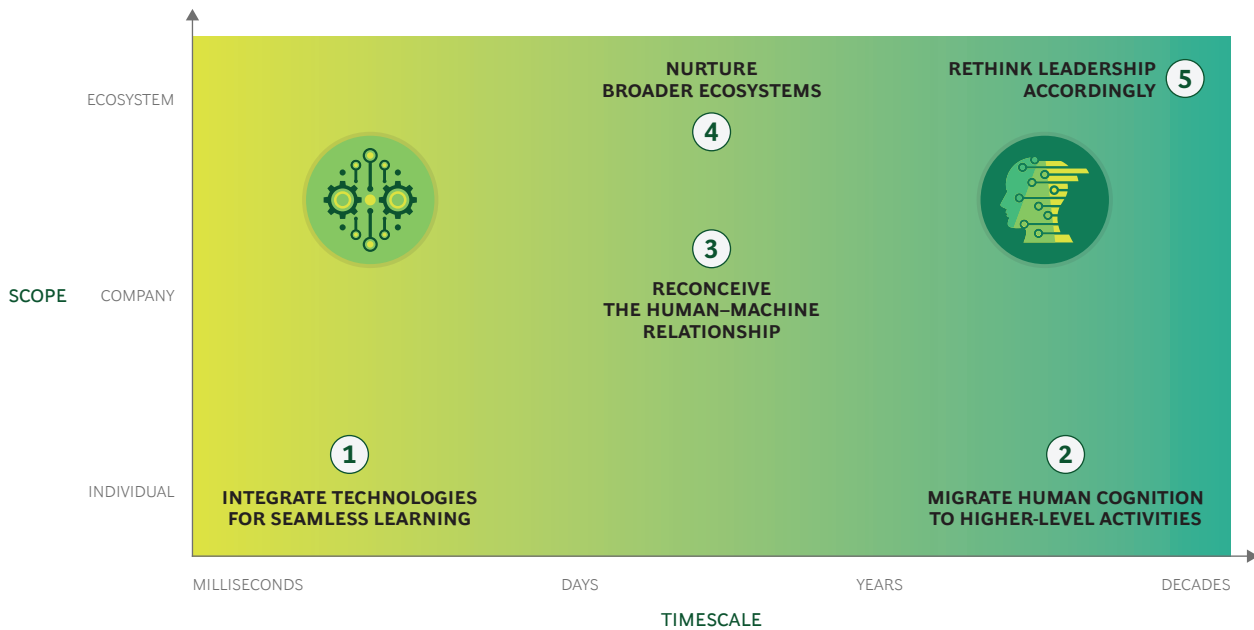
Source: BCG Henderson Institute.

processes—can impede companies' ability to harness the rapid learning potential unlocked by technology. As BCG's research on Smart Simplicity has shown, today's organizations already face the need to reduce bureaucracy and complicatedness in order to promote fluid collaboration. With the introduction of AI and other new technologies, leaders need to redouble their efforts to simplify their organizations in order to enable autonomous learning as well as more effective human-to-human collaboration.

Actions that companies can take to harness autonomous learning include:

- Gather real-time data on all aspects of the business by leveraging platforms, the Internet of Things, and other new technologies.

- Deploy AI at scale, integrated with data and decision-making systems.

- Take human hierarchy "out of the loop" of routine, data-based decision making.

Migrate Human Cognition to New, Higher-Level Activities

The widespread adoption of autonomous learning machines naturally raises the question of what role human

workers will play in the organization of the future. Today, there is already widespread concern about the speed at which technology will disrupt the future of work. To shape this future—and to maximize organizational learning capabilities—businesses need to focus human cognition on its unique strengths.

For all its power and potential, AI is still inherently limited in its cognitive scope. It can analyze correlations in data ("what is the case") at extreme speed, on extreme scales, with extreme complexity. But it cannot reason at higher levels, such as causal inference ("*why* is it the case") or counterfactual thinking ("what is not the case *but could be*").[8]

Humans should increasingly focus their efforts on these higher-level activities. For example, while correlative analysis is generally sufficient for learning about repeated actions on fast timescales, it is less useful for learning about slow-moving forces, such as political, social, and economic trends. These shifts are unique and depend on the historical context and trajectory, which means there is no repeated data set in which to find patterns. Human abilities, such as understanding causal relationships and generalizing from limited data, are necessary to decode these forces and adapt the organization accordingly.

Counterfactual thinking is also critical, as businesses need increasingly to compete on imagination. Existing business models are being exhausted faster, and long-term growth is

8. J. Pearl and D. Mackenzie, *The Book of Why: The New Science of Cause and Effect*, Basic Books, 2018.

declining, which means companies must continually generate new ideas to grow sustainably. But businesses today, which are often implicitly designed for efficiency and the maximization of short-run financial outcomes, are not conducive to imagination. Organizations will need to better facilitate individual and collective imagination.

Apple provides a prescient example. When Steve Jobs returned to Apple as CEO in 1997, he made design the core of the company's culture, instead of functions like engineering and finance, which had previously been dominant. By focusing on design—which leverages human creativity and imagination to generate new ideas—Apple was able to produce the novel products, including the iPhone, that eventually helped it become the world's most valuable company.

In addition to imagination and making sense of non-repeated events, there will be many activities where humans are advantaged, including organizational design, algorithmic governance, ethics, and purpose, to name a few. In these domains of human activity, organizations will need to become more effective at dynamic collaboration to get the most out of their teams. This requires emphasizing self-organization and experimentation by creating an organizational context in which responsive decision making and learning can thrive, rather than by relying on direct instructions.

Finally, organizations will need to recognize that these new activities are cognitively demanding—which is particularly challenging in an age of exploding inboxes, endless meetings, and ubiquitous information. Organizations will have to allow humans to cultivate the art of reflection and avoid cognitive overload.

How can organizations help humans maximize their value?

- Expose employees to unfamiliar or anomalous information, in order to inspire imagination.

- Schedule and protect time for unstructured reflection.

- Promote new ways of working that enable dynamic learning and adaptation.

Reconceive the Relationship Between Humans and Machines

The first two imperatives call for a hybrid learning organization, one that combines the comparative advantages of machines and humans: machines' ability to rapidly identify complex patterns in big data and humans' ability to decode complex causal relationships and imagine new possi-

bilities. Together, these will enable the organization to learn on an expanded range of timescales—faster *and* slower.

But in hybrid organizations, humans and machines will increasingly have to collaborate in new and more effective ways. This includes tasks that require thinking on multiple levels or timescales simultaneously, as well as tasks that demand social interaction, another dimension in which humans are currently far more effective. Organizations will thus need to reimagine the relationship between humans and machines to bring the best out of both and maximize synergies.

Different types of jobs and tasks will require different types of human-AI relationships:[9]

- In jobs that are based predominantly on optimization or pattern recognition, especially at high velocity and scale, humans will likely be substituted by machines. For example, many tasks done today by retail loan underwriters can be performed by AI; in these cases, humans will need to shift their focus to new higher-level tasks to add value.

- In jobs that also require social interaction, machines may take over optimization-related aspects, but a "human layer" will still be critical to deliver messages with empathy and compassion. For example, MIT developed a robot to match nurses with patients and allocate scarce resources in maternity wards, based on patient histories, scheduling constraints, and previous experience.[10] As a result, nurses and doctors can spend more time interacting with patients directly to provide empathy and personalized care.

- In jobs that require more creativity than optimization, humans will likely be complemented by intelligent machines that augment the capacity for creativity and imagination. For example, Maurice Conti, an expert in innovation and technology, describes "generative design tools" that automatically create new possibilities based on a set of predefined parameters, which can spark new ideas for human designers.

- Finally, in jobs that require both creativity and social interaction, humans will have many of the same core responsibilities that they do today, but targeted AI applications will help them maximize their skills. For example, Google and a startup led by former Google employees have developed the Nudge Engine, which uses AI to provide personalized suggestions to employees or managers that enhance their effectiveness.[11]

For these new types of human-machine relationships to succeed, organizations need to develop effective *human-*

9. Kai-Fu Lee, *AI Superpowers*, Houghton Mifflin Harcourt, 2018.

10. S. O'Brien, "MIT robot helps deliver babies," CNN, July 2016.

11. D. Wakabayashi, "Firm Led by Google Veterans Uses A.I. to 'Nudge' Workers Toward Happiness," *New York Times*, December 2018.

machine interfaces that allow for seamless collaboration. Today's AI models tend to be "black boxes" that are not designed for interpretability and may therefore impede trust. Organizations will need to overcome these hurdles by developing and implementing interfaces that provide transparency into how AI makes recommendations, allowing humans to understand and validate machines' actions. Similarly, humans and algorithms are rarely matched for bandwidth and complexity. Choosing the right level of abstraction and compression for communication between humans and computers is critical: too much compression will suppress subtlety and prevent the tinkering through which human innovation proceeds, while too little will overwhelm human overseers.

For example, Google's DeepMind AI system that detects eye diseases was designed to operate in two stages—first identifying what features of the image are associated with eye diseases and then diagnosing diseases on the basis of those features. This structure allows doctors to see what in the image led to each diagnosis, increasing their trust in the system.[12]

The frontier of human-machine relationships is still uncertain, but a few imperatives are emerging:

- Segment tasks and jobs according to the challenges they entail and deploy the right configuration of humans and machines against each.

- Leverage collaborative human-machine relationships more intensively.

- Develop explainable algorithms that humans can trust and understand.

Nurture Broader Ecosystems

In traditional models of production, companies operated in a linear value chain to deliver a narrow range of products. However, economic activity is increasingly organized within ecosystems—complex, semifluid networks of companies that cross conventional industry boundaries.

Ecosystems combine information and capabilities from a wide variety of players, increasing their collective ability to explore new paths and learn about the market. They also enable the rapid development of new offerings in response to emerging opportunities that could not have been foreseen. These benefits will be essential in future business environments, which will likely be more complex and less predictable than those of the past.

However, realizing those benefits requires a new organizational logic. Ecosystems cannot be successfully managed with deliberate planning and control. Instead, organizations need to be adaptive in order to respond to signals that emerge from the ecosystem—for example, by implementing internal processes that are flexible and responsive. And they need to develop shaping capabilities to indirectly influence the ecosystem in more beneficial directions—for example, by designing platforms that incentivize other stakeholders to act in certain ways.

Ecosystems are not only a new method of developing and delivering products; they also provide new opportunities for the "back office" of organizations. The "gig economy" is becoming more prominent, allowing companies to leverage external, freelance talent at scale—thereby enhancing flexibility and giving them access to a wider variety of skills. But harnessing labor-sharing platforms similarly requires indirect forms of management instead of traditional command-and-control techniques.

For example, the Dutch technology company Philips orchestrates ecosystems in many areas of its business. On the product side, its health care division participates in ecosystems at several stages of value creation—including an innovation ecosystem that involves academic labs, robotics companies, and startups; and a sales and servicing ecosystem based on its tele-health app that connects many digital health care partners. The company also created a labor-sharing platform, Philips Talent Pool, which maintains a pool of freelancers familiar with the company and monitors the quality of their work.
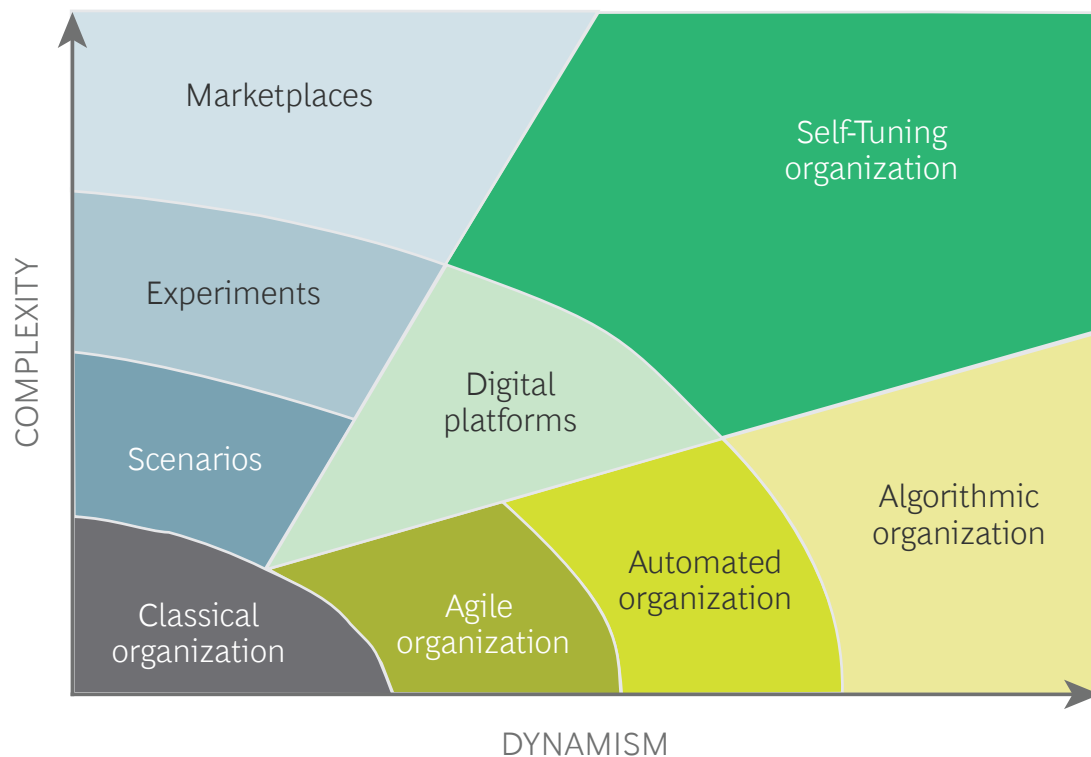
By reconceiving the external *and* internal workings of the organization as a flexible, evolving ecosystem, businesses can handle much greater dynamism and complexity. This requires subjecting all aspects of the organization to market forces, enabling it to learn and adapt in response to new opportunities. And it requires internal systems that adjust automatically to new information, allowing learning and resource reallocation to occur at algorithmic speed. When combined, these capabilities can create a "self-tuning enterprise" that constantly learns and evolves according to its environment. (See Exhibit 3.3.)

To harness the power of ecosystems throughout and beyond the organization, leaders must:

- Engage external partners to create a shared vision of the future.

- Develop capabilities for collaboration and information sharing at scale—for example, platforms and APIs.

12. J. Kahn, "Artificial Intelligence Has Some Explaining to Do," Bloomberg Businessweek, December 2018.

Exhibit 3.3 – The Self-Tuning Organization Embraces Dynamism and Complexity

COMPLEXITY

Marketplaces

Experiments

Scenarios

Classical organization

Digital platforms

Agile organization

Self-Tuning organization

Automated organization

Algorithmic organization

DYNAMISM

Source: BCG Henderson Institute.

- Redesign internal processes to be more adaptive and data-driven, allowing the organization to become "self-tuning."

Rethink Management and Leadership

Collectively, the above imperatives point to a very different way of designing and operating organizations—which in turn will significantly change the role of leadership. In particular, managers and leaders will need to focus on several new challenges.

Developing Governance Principles for AI and Autonomous Machines. As machines play a greater part in learning and action, the role of leadership in setting guardrails and priorities will take on greater importance. In the last decade, tech companies could sidestep these topics, as the promise and potential of new technologies gave them a license to move fast. But as social scrutiny of technology increases, questions about governance, trust, and ethics are coming to the forefront. And as AI is adopted more widely, all businesses will have to deal with these difficult questions.

Some organizations are already beginning to address them. For example, Microsoft created a new leadership position to help companies learn how to deploy ethical principles, including fairness, accountability, and transparency, when implementing AI systems.[13]

Unlocking Continuous Human Learning Capabilities. As humans increasingly focus on higher-level thinking, they will need to learn and practice new skills. This shift will not be "one-shot" learning—the required abilities will continue to evolve unpredictably. Learning will therefore need to be embedded in the workflow, and responsive to changing needs, rather than batched at the beginning of careers. Organizations will also need to invest in "learning contracts" with employees, mutually committing to continuously develop new skills for new roles.

Leading in Ecosystems. As the scope of the organization expands to encompass broader ecosystems, leaders need to adopt a new approach. Traditional "mechanistic" approaches rely on the assumption that organizational actions can be perfectly planned and controlled, which is no longer valid. Instead, leaders need to adopt a "biological"

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13. S. Castellanos, "Microsoft AI Ethicist Guides Businesses on Responsible Algorithm Design," *Wall Street Journal*, October 2018.

mindset, which recognizes that businesses are embedded in complex systems that evolve unpredictably. This involves managing with an experimental approach that seeks to learn about the environment and adapt, rather than assuming that current knowledge is sufficient. And it involves prioritizing resilience in order to prepare for outcomes that cannot be anticipated.

Orchestrating an Adaptive Organization. Similarly, running a self-tuning enterprise requires a different perspective on the role of organizational leadership. Instead of exerting control over teams and intervening directly in operations, leaders should reframe their mandate as orchestrating a complex, dynamic system of individuals and machines, and guiding it to productive outcomes. This can be considered an extension of the shift in leadership mindset from "classical music composer/conductor" to "improvisatory jazz group leader," as was presciently laid out by former BCG CEO John Clarkeson in 1990.

As a consequence, the day-to-day activities of managers will change. Traditional management, in the form of direct decision making, will be reduced—because fewer aspects of the organization can actually be "managed." Instead, managers need to think of themselves as coaches rather than decision makers, and shift their activities to higher levels, such as shaping the conditions and context of the enterprise.

The organizations that will win the 2020s will look much different from today's: they will use different capabilities; they will operate at different speeds and scales of influence; they will contain different structures and responsibilities; and they will embody different leadership models to enable all of the above.

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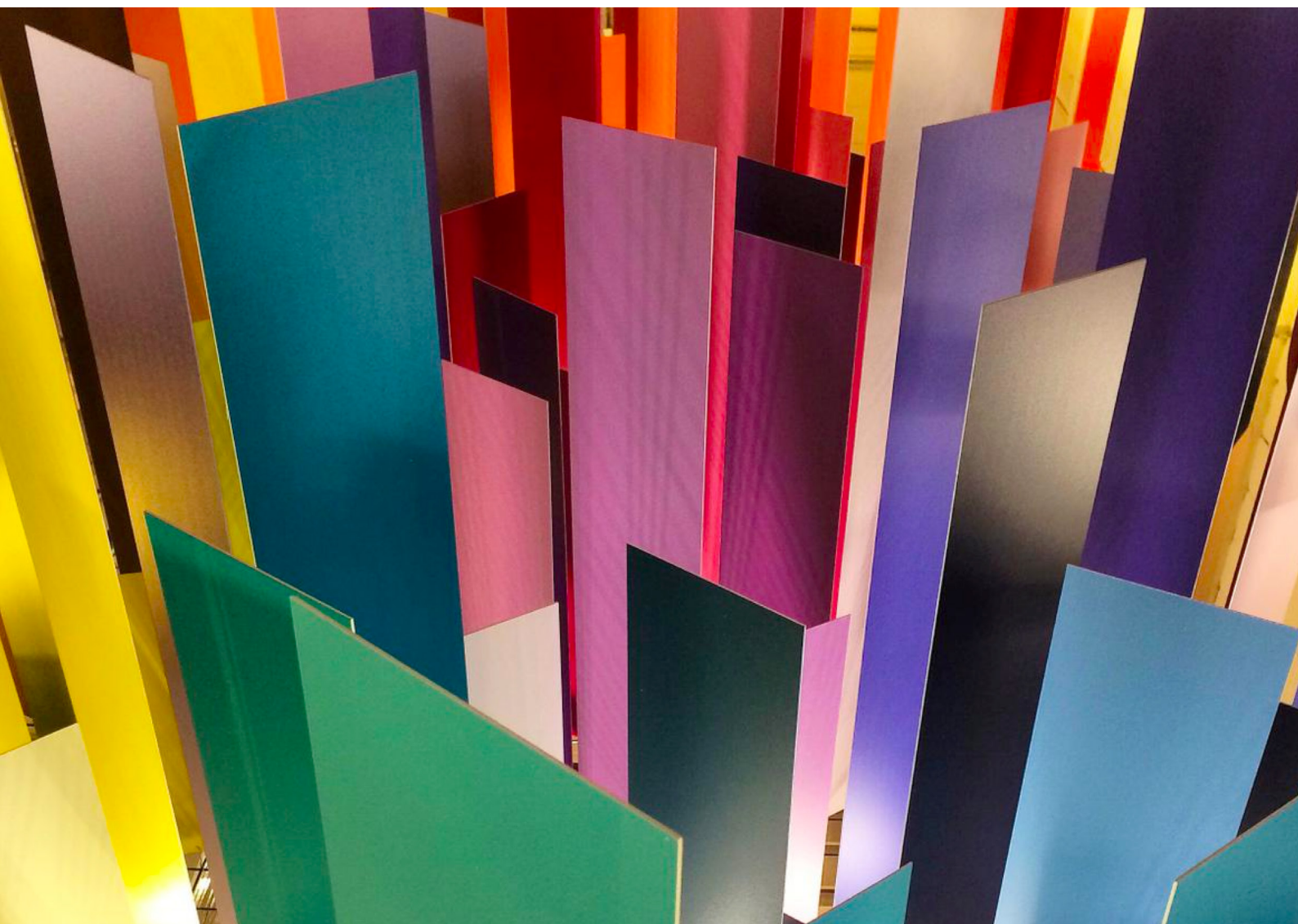
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The Science of Organizational Change

The Science of Organizational Change

By Lars Fæste, Martin Reeves, and Kevin Whitaker

There is a gap between where most organizations are today and where they will need to be in order to succeed in the coming decade. The companies that win in the 2020s will be designed to constantly learn and adapt to changing realities, combine artificial and human intelligence in new ways, and harness the benefits of broader business ecosystems. Reaching this necessary future state will require a fundamental transformation.

This change effort will be challenging. Many businesses have deeply entrenched operating systems that are predicated on hierarchy and human decision making. They will need to redesign their internal processes and build new capabilities and business models.
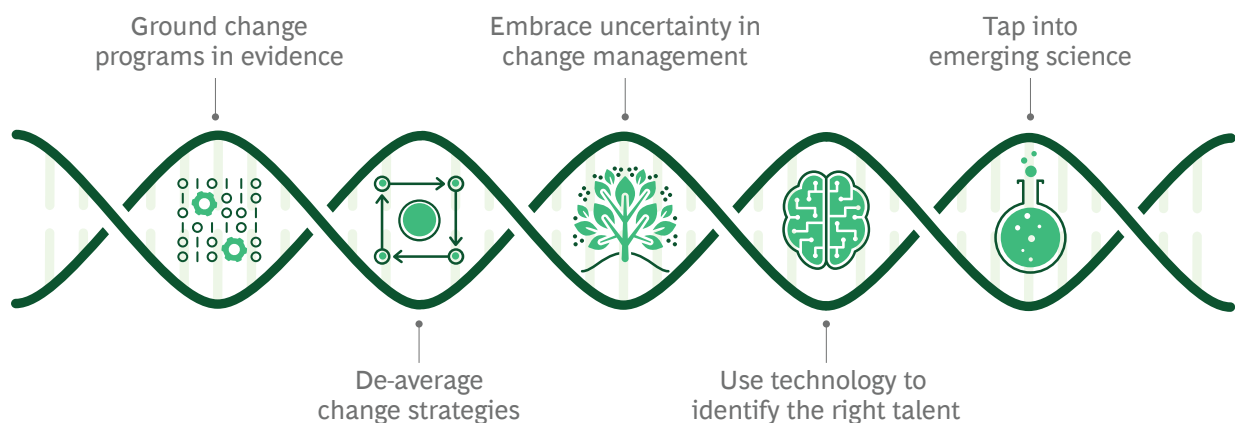
Furthermore, this will not be a one-time change effort: the dynamic nature of business will require organizations to build capabilities for *ongoing* large-scale change to keep up with evolving technology and competition.

Traditional approaches to organizational change are generally not very effective. Change management is usually thought of as one-size-fits-all and based on plausible rules of thumb. But our research shows that only about one in four transformations succeeds in the short and long run, and the success rate has been trending downward. Meanwhile, the stakes are high: the cumulative difference between success and failure for the largest transformations over a decade can add up to the company's entire market value.

Leaders need to take a new approach to change—one that deploys evidence, analytics, and emerging technology. In other words, leaders must apply the emerging science of organizational change, which is based on five key components. (See Exhibit 4.1.)

Exhibit 4.1 - Five Keys to Organizational Change

Ground change programs in evidence

Embrace uncertainty in change management

Tap into emerging science

De-average change strategies

Use technology to identify the right talent

Source: BCG Henderson Institute.

1. Ground change programs in evidence.

2. De-average change strategies according to the nature of the challenge at hand.

3. Embrace uncertainty and complexity in change management.

4. Use technology to identify the right talent to execute change.

5. Tap into emerging science to enhance change programs.

Ground Change Programs in Evidence

When it comes to understanding how to enact change, business leaders have often relied on intuition and experience. In a typical transformation effort, the program design, choice of tactics and value levers, and ongoing management are often based on little more than subjective data such as customer surveys and progress reports. But the increasing availability of data, together with novel analytical approaches, has made it possible to empirically decode what really works and what doesn't. Leaders thus need an evidence-based approach to transformation.

Our empirical analysis of hundreds of large companies that experienced major change reveals a number of lessons. In the short term, the most successful companies articulat-ed a compelling story to reset investors' expectations in addition to improving efficiency. (See Exhibit 4.2.) In the longer term, they took actions to increase revenue growth, such as spending more on R&D. They launched formal transformation programs, rather than a series of ad hoc improvements, and invested in them sufficiently. And they initiated their transformations preemptively, when things were still going well, instead of in reaction to declining performance.

To succeed in the next decade, leaders can apply such an evidence-based approach to all types of change situations—turning transformation from a reactive necessity into a competitive opportunity. For example, empirical analysis can help companies successfully acquire and transform underperforming businesses: our research shows that although such "turnaround M&A" deals are very risky, there are demonstrable ways to beat the odds. These include launching turnaround initiatives quickly and setting ambitious synergy goals, as well as giving attention to key soft factors—for example, companies with a well-defined purpose had significantly better outcomes in turn-around deals, demonstrating the importance of motivating employees on the change journey.

A similar approach can also help companies respond to changing external conditions, such as an economic slow-down: while most companies see performance decline during a downturn, a minority thrive—and historical analy-sis can identify what sets them apart.

Exhibit 4.2 - Evidence Shows That Performance Drivers Vary Across Timescales

Drivers of cumulative TSR outperformance in transformation (%)

	1 year	5 years
Investors' expectations	40	24
Cost reduction	35	37
Revenue growth	25	41
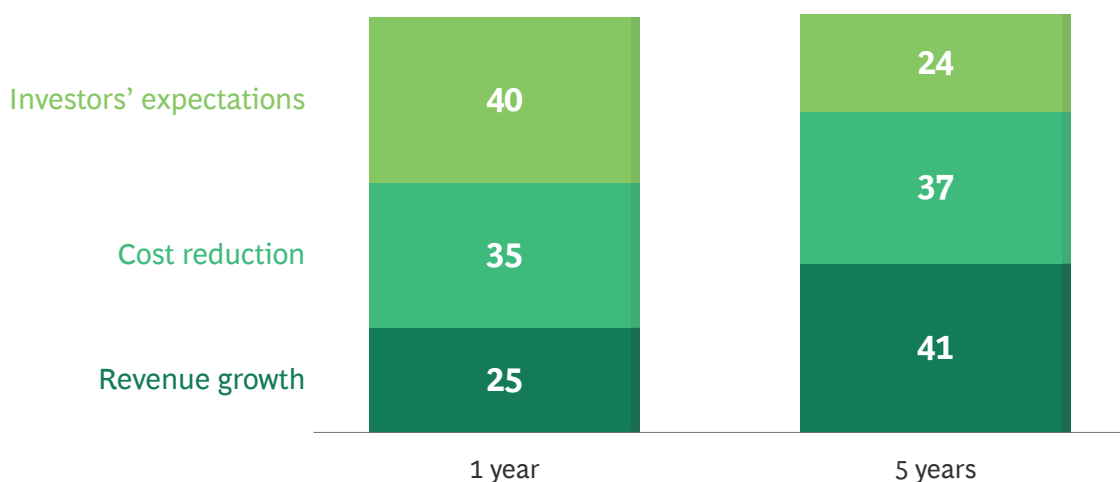
Sources: S&P Capital IQ; BCG Henderson Institute analysis.

Note: Based on total shareholder return relative to industry over given timeframe for 70th-95th percentile performers (to exclude outliers), for companies with two preceding years of severely declining performance.

What steps can leaders take to adopt an evidence-based transformation approach?

- Draw insights from the full range of historical evidence, rather than relying only on personal experience or rules of thumb.

- Build analytical capabilities to be able to identify tailored insights for your individual change situation and optimize program design accordingly.

- Create a sense of urgency in your organization to make the case for preemptive change.

De-average Change Strategies

Organizational change is often seen as a single type of challenge that calls for a single type of change management in all situations. Accordingly, most change efforts follow a recipe with common ingredients: for example, centralized program offices, periodic pulse checks, measurement against predefined milestones, and a one-shot process with a clear end date.

In reality, there are many types of organizational change that present very different challenges and have very different requirements. Leaders need to de-average organizational transformation into various components and understand the right approach for each.

Change can be considered as movement across a "landscape" of possibility, where each point corresponds to a different possible state of the organization. Organizations try to seek "higher ground," which corresponds to higher performance. Different change situations can be considered along two dimensions: Is the target destination clear (the ends)? And is there a clear path to get from here to there (the means)? (See Exhibit 4.3.)

De-averaging the challenge this way reveals five types of change strategies, each of which requires a fundamentally different approach to change management:

- A *planned itinerary* represents the traditional approach to organizational change. This is appropriate when there is a clear goal and obvious steps to get there. For example, HSBC identified a clear opportunity to simplify and streamline its business, through the well-defined means of exiting noncore locations and eliminating excess organizational layers. It executed the program with a typical goal-oriented approach, setting clear cost and profit targets, reporting its progress against those targets, and clearly defining accountability.

- A *river crossing* strategy is more appropriate when there is a clear goal but the path to get there is unknown.[14] For example, Starbucks in 2008 understood it needed to increase customer loyalty but didn't know precisely how to do so. Rather than planning its change program in detail, it took a more experimental approach to find the best path—running pilot programs in emerging areas like social media, learning from those efforts, and amplifying the actions that made concrete progress toward its goal.[15]

- A *hill-climbing* strategy is needed when the means of change are clear but the end state is not. For example, John Deere recognized that the importance of the Internet

Exhibit 4.3 - Different Situations Call for Different Change Strategies
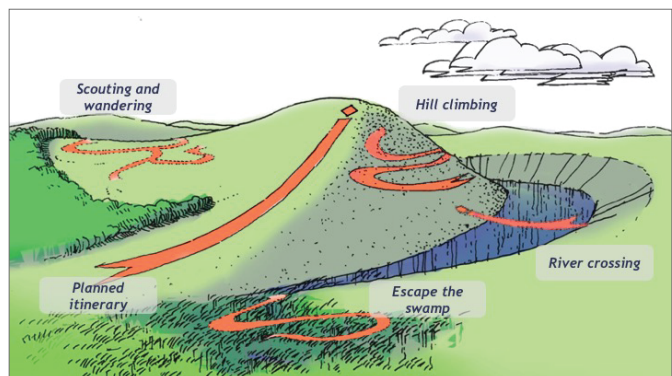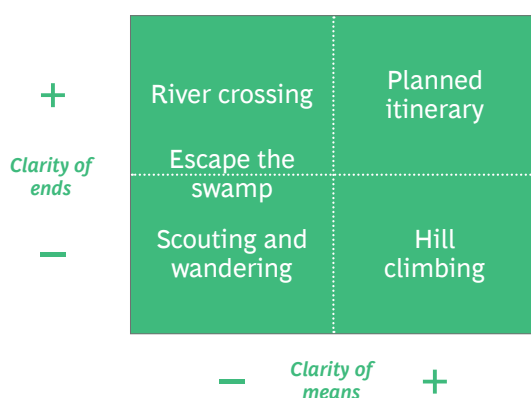
Source: BCG Henderson Institute analysis.

14. As coined by Deng Xiaoping, who described China's reform effort as "crossing the river by feeling for the stones."

15. Nancy F. Koehn et al., "Starbucks Coffee Company: Transformation and Renewal," Harvard Business School Case, June 2014.

of Things would continue to grow, but the company has taken an open-ended approach to its investments in the technology: rather than defining an end goal from the beginning, it started with a few minimum viable products that were believed to be heading in the right direction. After learning more about the value of those products, the company aims to "build from those and create a broader service around them"—eventually reaching an end state that likely could not have been foreseen.[16]

- Companies may seek change even when they know neither the ends nor the means—for instance, when they are looking for the next big opportunity. This situation calls for a strategy of *scouting and wandering*. For example, the Japanese company Recruit instituted an exploratory program called Ring, which allows any employee to propose a new business in any field, not only those related to the company's existing products. The program receives more than 1,000 new ideas every year, some of which have become substantial businesses for Recruit.

- Finally, some companies face situations in which the only clear imperative is to change substantially and urgently, which demands an *escape the swamp* strategy. For example, facing severe threats in 2012, Best Buy adopted the philosophy, "If we don't change, we are going to die."[17] The company pursued bold, pragmatic moves without exhaustive evaluation, because they represented the best chance to promptly escape an adverse situation.

Major transformation programs, such as the ones many companies will have to undergo to reinvent themselves for the next decade, require a composite of these strategies—in which various change management approaches are applied in sequence, or in different parts of the business simultaneously. Companies therefore need to develop capabilities to tackle each type of change effectively.

A few key imperatives can help leaders leverage the required variety of change strategies:

- Understand the variety of potential change challenges and the tactics required to succeed in each.

- Divide complex transformation efforts into their components, and select change strategies accordingly.

- Build organizational and leadership capabilities to enact multiple types of change simultaneously.

Embrace Uncertainty and Complexity in Change Management

Businesses have traditionally been managed with a "mechanical" mindset. This mentality assumes that everything that needs to be known can be known, everything that needs to happen can be planned, and all necessary change can be enacted through direct intervention.

However, companies are composed of people who interact with one another and with a complex dynamic environment. So businesses, like other biological systems, behave like *nested complex adaptive systems*. Lower-level systems (such as individuals) are embedded in higher-level systems (such as teams, business units, companies, industries, national economies, and societies)—and changes in any system can cause unintended and unpredictable effects in others.

Interactions between individuals or systems are becoming even more complex today, because employees, companies, and economies are more connected as a result of digitization, and because production is starting to be organized in dynamic multicompany ecosystems rather than traditional static supply chains. Therefore, mechanical approaches to change management are increasingly inadequate. Instead, leaders need to employ a "biological" approach, which is more realistic about what can be known and directly controlled.

Biological management involves several principles:

- Adapt to changing conditions by seeing what works, rather than designing or deducing static solutions.

- Shape the organizational context, rather than dictating individual actions.

- Allow new approaches to emerge from a diversity of perspectives, rather than relying on standardization.

- Observe how the organization behaves as a whole, rather than optimizing individual parts.

- Compete on resilience and preparedness for the unknown, rather than only static efficiency.

These principles point to new strategies for enacting change in business. To address a complex task (for instance, shifting a company's culture), direct interventions (such as mandating individual behaviors) are unlikely to bring about the required change. Indirect interventions —those that change the mindset, assumptions, and context that underpin employees' actions—often prove to be

16. Tim Greene, "John Deere is plowing IoT into its farm equipment," Network World, May 2016.

17. Susan Berfield and Matthew Boyle, "Best Buy Should Be Dead, but It's Thriving in the Age of Amazon," Bloomberg Businessweek, July 2018.

more effective because they touch the deeper, more persistent drivers of behavior.

Biological approaches also enable the orchestration of *external* change, such as shaping the behavior of other players in a business ecosystem. For example, early in the evolution of its Taobao e-commerce platform, Alibaba wanted to expand the range of offerings by making it easier for small or inexperienced sellers to join the market. Rather than addressing this challenge through direct actions, the company set up Taobao University—a platform on which established sellers could produce certified training materials for new sellers. By finding this indirect leverage point, Alibaba was able to capture the best wisdom from its marketplace, transmit it to potential sellers with greater scale and specificity, and improve the quality of services on Taobao, which ultimately became the world's largest e-commerce website.

What steps can leaders take to embed biological thinking in change management?

- Be realistic about what you can predict and what is beyond managerial control.

- Foster trust and reciprocity to coordinate competing interests.

- Experiment frequently and amplify the initiatives and approaches that are most successful.

Use Technology to Identify the Right Talent to Execute Change

Large-scale organizational change often results in a need for new capabilities, which may be found by reallocating workers within the enterprise or by identifying new talent externally. To execute change effectively, it is therefore necessary to develop strategies for identifying individuals' unique skills and matching them to the right roles.

The challenge of aligning skills with positions, like many other aspects of large-scale change, has generally been based on subjective judgments of individuals' track record of performance in different roles. But advances in science and technology are unlocking new possibilities. The study of neuroscience, and advances in testing technology, allow for the rapid, scalable identification of cognitive and emotional traits—which are more objective than self-reported survey measures or judgements based on interviews. And AI can now find and refine complex relationships between these traits and job performance across very large sets of traits and roles.

For example, our research (in collaboration with pymetrics, a startup using neuroscience and AI to help companies improve hiring processes, and Professor TejPavan Gandhok of the Indian School of Business) used digital games to assess individuals' cognitive and emotional traits as well as their capabilities in various simulated problem-solving environments. We found that different neuro-traits reliably predicted success in different situations, suggesting that science can indeed play a helpful role in identifying talent to fill new roles. And we found that very few individuals were successful in *all* environments—demonstrating the need to effectively align skills with roles.

Furthermore, there were clear differences in how well certain capabilities could be learned over time. Some capabilities could be learned effectively, indicating that businesses are able to develop them internally over time—while others could only be learned very slowly, indicating a need to acquire them externally if they cannot be found within the organization. (See Exhibit 4.4.)

How can leaders ensure they have the proper capabilities to successfully execute change programs?

- Use objective measurements of individuals' skills, and de-average talent needs in different parts of the business.

- Base hire-or-build decisions on the learnability and market for different capabilities.

- Maintain a diversity of skills throughout the organization for when new challenges arise.
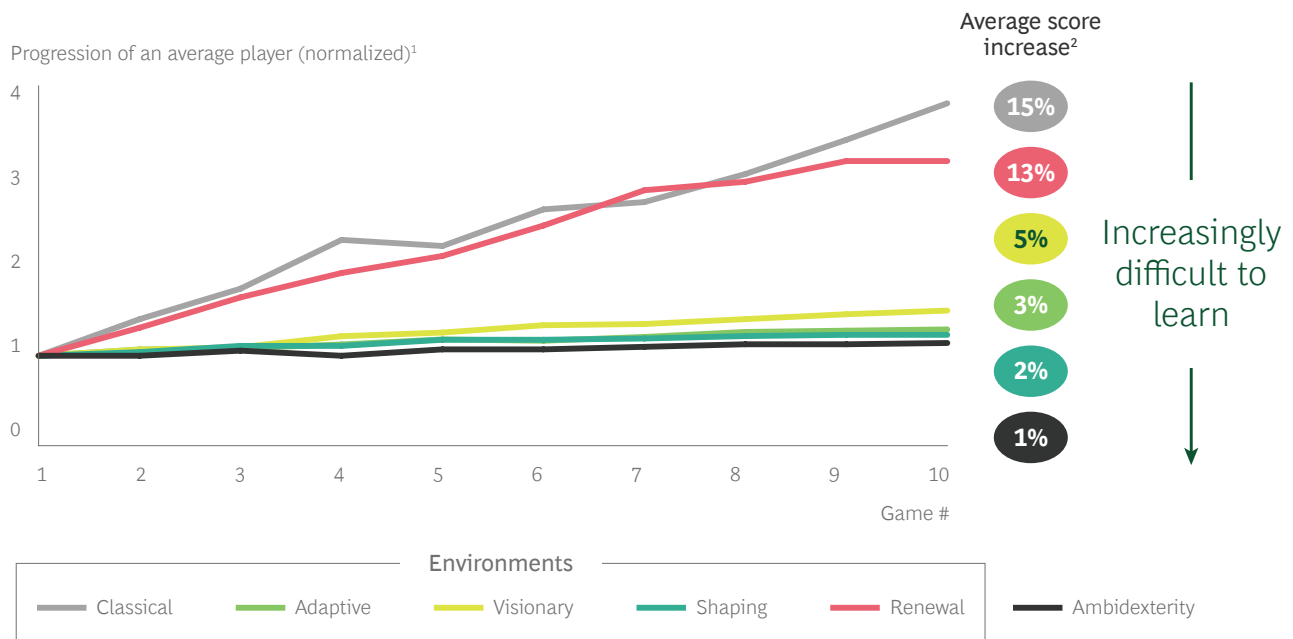
Tap into Emerging Science to Enhance Change

As science and technology advance, more tools for managing change in complex dynamic environments will emerge. The leaders who are willing to let go of established models and embrace this frontier will have an advantage in transforming their organizations in the coming decade.

Some emerging lessons from science and technology include:

- **Identify early-warning indicators.** Understanding when and how change is required is no easy task. By the time traditional performance measures signal a need for change, it is often too late to recover. In some domains, however, scientific study has revealed early-warning signals—higher-order patterns that predict critical changes to complex systems. For example, in ecology, certain configurations of vegetation in a dry region are indicators that the region is about to become completely barren.[18]

18. Martin Scheffer et al., "Early-warning signals for critical transitions," *Nature*, September 2009.

Exhibit 4.4 - Technology Identifies Which Capabilities Can Be Learned Effectively

Progression of an average player (normalized)[1]

Average score increase[2]

15%

13%

5%

3%

2%

1%

Increasingly difficult to learn

Game #

Environments

Classical — Adaptive — Visionary — Shaping — Renewal — Ambidexterity

Sources: Data collected by pymetrics, Professor TejPavan Gandhok, and BCG Henderson Institute; analysis by pymetrics and BCG Henderson Institute.

[1]Normalized score calculated on the basis of average increase between two successive rounds.

[2]Average across ten games.

Businesses may be able to identify early-warning signals of impending shifts—for instance, the threat that their current growth engines will run out of steam—and understand how to change accordingly. For example, Thorton Tomasetti, a leading engineering firm, has adopted new metrics to measure its vitality in order to identify signs of deterioration *before* they show up in measures of financial performance.

- **Learn how to "nudge" behavior.** As business leaders shift from mechanical approaches to indirect ones that account for uncertainty and complexity, they will need to identify influential leverage points in the business that may not be obvious. The emerging study of behavioral psychology can help leaders identify small interventions that may nudge employees into different, more productive behaviors. For example, in a randomized experiment Virgin Atlantic found that giving reminders and fuel use goals to pilots resulted in millions of dollars of cost savings.[19]

- **Leverage new program management technologies.** As companies adopt an expanded array of change strategies, they will need new methods of reporting on and managing their change programs. Emerging technologies may help.

For example, new digital crowdsourcing platforms may offer a template for companies to gamify change initiatives and gather real-time feedback about what works and what doesn't. And dynamic program management platforms can enable leaders to continuously adjust the portfolio of change initiatives instead of following rigid timelines.

- **Use AI to enhance change.** Lots of organizations are enacting major change so that they can use artificial intelligence effectively (often a central goal of digital transformation). But few are using the capabilities of AI itself to enhance major change programs. Instead, change efforts are still largely designed and managed with subjective approaches.

However, in the next decade, forward- looking companies will likely leverage increasingly powerful AI capabilities as an essential part of their change programs. For example, machine learning has already shown remarkable ability in predicting the dynamics of some chaotic systems, such as weather.[20] Similar technologies could identify disruptions in the business environment or diagnose organizational health in real time.

19. Greer Gosnell et al., "A New Approach to an Age-Old Problem: Solving Externalities by Incenting Workers Directly," NBER working paper, June 2016.

20. Natalie Wolchover, "Machine Learning's 'Amazing' Ability to Predict Chaos," Quanta Magazine, April 2018.

For example, according to analytics startup KeenCorp, deep semantic patterns in Enron's internal emails identified latent tensions in the organization, which could have served as a sign of trouble to observers even if they did not know the full extent of its fraud.[21] This type of analysis could be applied not only to legal risks, but to strategic risks as well.

How can leaders use the emerging science of change to their advantage?

- Identify the new metrics and analytical approaches that can provide early-warning signals to your business.

- Use AI to optimize and enhance the change process itself.

- Monitor ongoing technological and scientific advances to identify new opportunities, perhaps including generative AI algorithms, biometrics, or control theory.

Major, ongoing change will be necessary to succeed in the next decade. But successfully enacting organizational change is highly challenging. By recognizing the complexity of change, and using lessons from science and analytics to address it, leaders can ensure their companies are best positioned to win the '20s.

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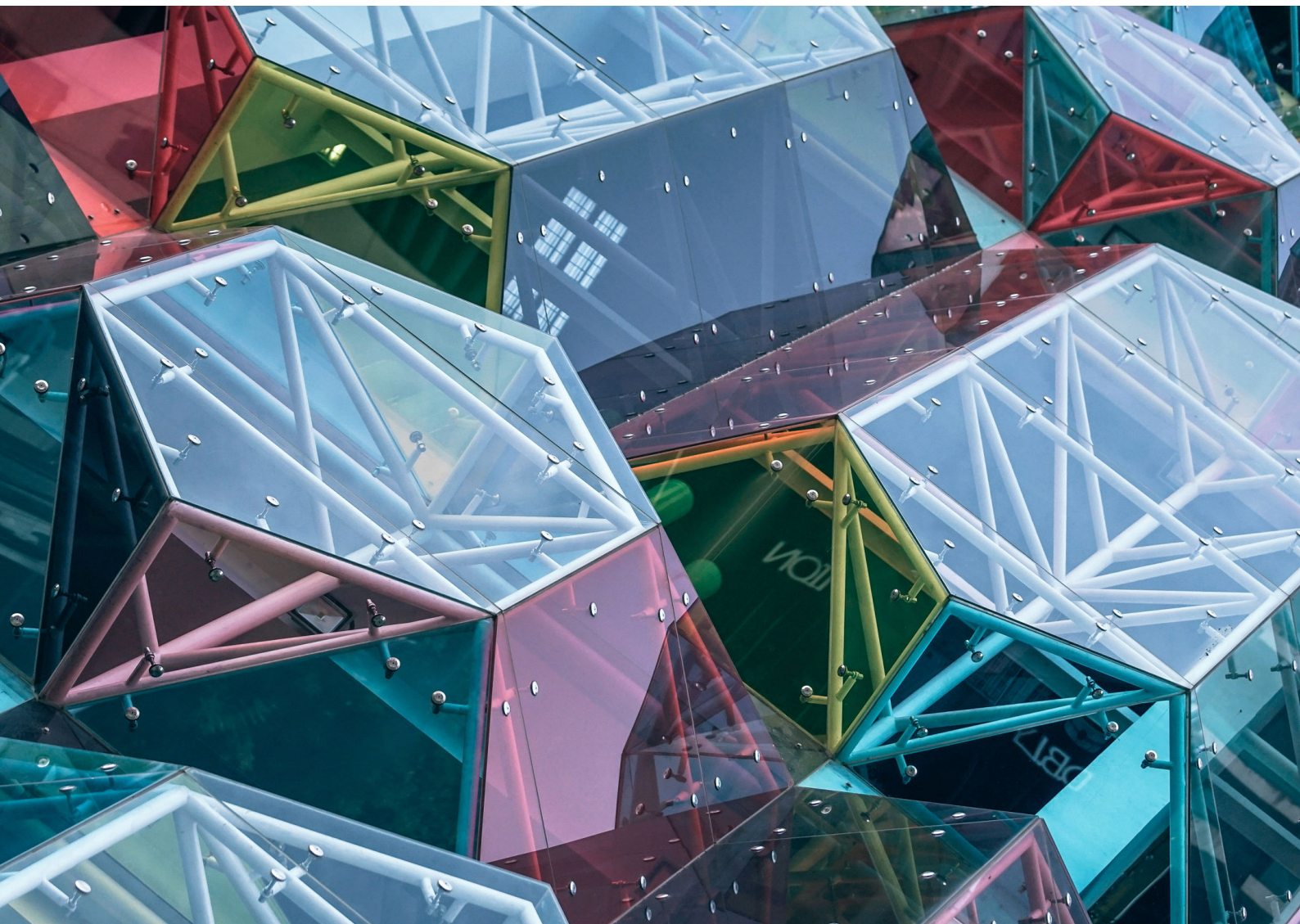
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21. Frank Partnoy, "What Your Boss Could Learn by Reading the Whole Company's Emails," *The Atlantic*, September 2018.

The Business Imperative of Diversity

The Business Imperative of Diversity

By Miki Tsusaka, Christian Greiser, Matt Krentz, and Martin Reeves

The next decade is fast approaching, and there are no spoilers. It's likely that the years to come will be marked by geopolitical and economic uncertainty, with continued disruptions from digital challengers. Organizations that are ready to learn and pivot on the fly will be the ones that not only stay afloat through the 2020s but thrive.

How can business leaders ensure that their organizations are primed for innovation and reinvention—and thus be as prepared as possible for the relentless change the next decade will bring? The not so secret but often elusive answer: diversity.

Increasing diversity is a moral imperative, but it is also becoming a powerful business requirement. Organizations equipped with a range of voices and perspectives throughout the ranks are better able to innovate, take risks, solve problems creatively, bounce back from failures, and turn challenges into opportunities. But progress around the world, especially in leadership roles, has been lackluster. (See Exhibit 5.1.)

Now is not the time, however, to be discouraged. To not only cope with the uncertainties of the global economy in the next ten years but gain advantage, leaders must make diversity an urgent priority in their strategy playbook.

The Link Between Diversity and Innovation

Instinct tells us that diversity should spark innovation. When a team is made up of people who have a great deal in common, we risk "group think"—a sameness of perspectives that can lead to complacency, stagnation, and even downfall. Such homogeneity also inhibits a company's ability to respond to challenges in a resilient manner.

And it turns out that our instinct is right: we can move beyond assuming the benefits of diversity and back it up with data. A BCG study of more than 1,700 companies around the world shows that diversity increases the capacity for innovation by expanding the range of a company's ideas and options, leading to better financial performance. And the BCG Henderson Institute recently demonstrated that gender diversity, for example, not only correlates with but is predictive of future growth.

Diverse and inclusive organizations generate unconventional solutions and offer up more ideas, increasing the likelihood that they will deliver winning products and services and greater long-term growth. Over the long haul, growth is the predominant driver of outperformance. And in an environment of declining aggregate economic growth globally, innovation provides the necessary fuel for an individual company to grow.

In the corporate world, the primary types of diversity that come to mind—gender, ethnic, racial, and sexual orientation—all drive success. But so do other kinds, including work experience, age, educational background, and nation of origin.

Cognitive diversity—people with different ways of solving problems working together—is also key. Joint research by BCG and AI-neuroscience startup pymetrics shows that large companies need diversity in cognitive skills in order to master the range of strategies—from classical to adaptive to visionary—needed to cope with the complex and dynamic environments they face.

Exhibit 5.1 - Little Progress on Gender Diversity in the Past Ten Years

Average share of women managers at large companies (%)

Parity: 50%

2009	2012	2015	2018
26	26	25	27
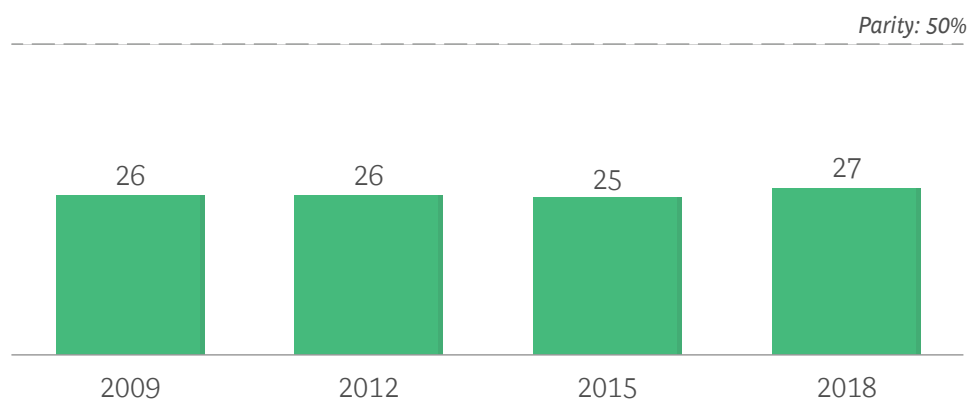
Sources: Thomson Reuters; BCG Henderson Institute analysis.

Note: Includes listed global companies with at least $10 billion in sales or $20 billion in market capitalization that are reporting gender diversity data.

And the more types of diversity, the merrier. Companies that have achieved diversity on multiple dimensions are stronger innovators than those that haven't. In addition, when an organization invests in digital innovation, the advantages of diversity multiply, allowing it to better capitalize on those investments.

Furthermore, diversity is most important at the top. There is a clear correlation between the diversity of management teams and an organization's overall level of innovation. For example, nearly half the revenue of companies that have more diverse leadership comes from products and services launched in the past three years. And those companies have higher EBIT margins as well, delivering 9 percentage points more than those with below-average diversity on their management teams.

The composition of the boardroom—a topic in the spotlight of late—is also important, as its diversity leads to a broader range of ideas and publicly expresses how committed the company is to embracing diversity overall. Gender diversity on boards has become mandatory in some countries, but good board governance has always encouraged diversity, starting with the basics of including people from outside the organization.

Diversity Also Builds Resilience

The most innovative companies will be at an advantage in the coming years, but that won't be enough. Rapid changes in technology, the complex dynamics of globalization, and political uncertainty worldwide are creating an unpredictable business environment that will make it harder for companies to endure. Public companies today have a one-in-three chance of ceasing to exist in their current form over the next five years, owing to failure, takeover, or other causes. That's a rate that's six times higher than the rate 40 years ago.

Greater diversity fosters innovation, but it can also strengthen resilience—the capacity to survive the unexpected—which is an equally important weapon heading into the next decade. Diverse companies are better than their more homogenous counterparts at withstanding unanticipated changes and adapting to external threats.

In fact, diversity is a pivotal feature of all long-lived natural and social systems, including companies. When a company can deploy a range of perspectives and ideas, it effectively has more ways of hedging the unexpected. Diversity not only mitigates against the risk of system collapse but is also the grist for evolutionary adaptation. It allows for constant variation and experimentation with products, strategies, and business models—essential in maintaining fitness in a changing environment.

Not surprisingly, when smaller, short-term failures occur within a resilient workplace culture, winning companies learn and thrive. A crisis provides an opportunity to adapt, as long as the company has a wide range of perspectives

to pull from and the means to choose the best ideas and act upon them.

And as the business environment grows more complex and dynamic, a uniform and steady approach to strategy and execution isn't sufficient. Instead, companies need to apply a diverse set of approaches to succeed in different environments. That kind of constant adaptation will promote longevity, since in a changing environment it is not enough to focus on the traditional question of strategy: How good is my game? An equal emphasis needs to be placed on the question, How long will my game last?

One executive from a Fortune 500 company used half of each management meeting to open up a conversation about recent failures and the lessons those failures provided. Jeff Bezos of Amazon is likewise well known for embracing failure, writing to shareholders that "failure and invention are inseparable twins." The goal is to avoid a success trap—an overreliance on the approaches that produced yesterday's success, often at the expense of tomorrow's—by constantly seeding new approaches.

Unlocking the Potential of Diversity

Achieving diversity in the workplace has been a struggle globally—more so in some regions than others—with progress being slowest in the leadership ranks. And even when companies can impress the outside world with increased diversity numbers or commitments, they're not always able to convert that structural progress into business success.

Leaders need to focus on three primary areas in order to push for progress on diversity and unlock its potential.

Build an Inclusive Workplace
Diversity has become top of mind for business leaders everywhere. But so far they're not only not getting the numbers they need; they're also not gaining as much as they could from the numbers they have.

Hiring more diverse talent is only the first step. Leaders have to move beyond compositional diversity and create a workplace that allows diversity to thrive. In other words, diversity won't work for companies if they aren't working to build an environment that unlocks the potential of diversity and ensures that the best ideas and practices can emerge and be embraced.

Explaining the challenge of building an inclusive workplace, Citigroup CEO Michael Corbat recently said, "I think we've been okay at bringing women and minorities into the firm, but I don't think we've created the environment that creates the sustainability of them wanting to be there."

As in biological evolution, taking advantage of diversity within an organization requires the ability to select and amplify the best approaches. When that kind of adaptive mechanism is baked into the environment and operations of the organization, diversity can do its best work. And the resulting adaptive, inclusive workplace will allow for easier maintenance of a diverse pool of talent over time, including a pipeline of leaders contributing to the innovative capabilities and resilience of the organization for the long term.

There are five enabling factors needed to create this kind of inclusive environment: participative leadership, with different views readily heard and appreciated; a strategic emphasis on diversity led by the CEO; frequent and open communication among teams; a culture of openness to new ideas; and fair and transparent employment practices, including equal pay. When a corporate ecosystem has all of these in place, the organization will be able to reap the true business benefits of diversity and be ready for the next decade.

Don't Become Complacent About Progress
As companies improve their diversity numbers and build an environment conducive to unlocking the power of diversity, leaders may think their job is done. In fact, building and maintaining diversity will become even more mission critical over time and has to stay at the top of the agenda. Rather than being satisfied with 30% diversity in leadership, for example, it may be time to aim for 50%.

Three steps can accelerate the progress of diversity initiatives and build the innovation capabilities and resilience of organizations:

- **Come to an honest consensus on how much progress the company has made on its diversity initiatives and how much further it needs to go.** Express a sense of urgency about the need for real change, ensuring that the workforce hears a strong, vocal leadership commitment—and hears it often.

- **Define ambitious, realistic, and specific targets.** Leaders must tailor goals to the unique needs of the organization and revisit them periodically, since strategies for diversity today may not respond to the challenges of the future. For example, a company may make strong progress on gender diversity in leadership, but a new corporate acquisition could necessitate a different type of diversity, such as in geographic or academic background.

- **Apply the specific measures that will achieve those targets, including the tried-and-tested measures, such as antidiscrimination policies and bias awareness training.** Also don't overlook the "hidden gems"—the measures that work but tend to be undervalued by senior-level management—as well as specific measures that may be necessary for a particular company, such as boosting cognitive diversity.

Increase Diversity—and Win the Race for Talent

How companies attract and retain talent in the next decade—and how they populate their leadership positions—will be a strong predictor of their success or failure. Talent will be in short supply in the world's largest economies, and specific capabilities will be even rarer: 30% of the skills that will be needed just by 2020 are lacking or are seen as not critical in today's talent pool. It will therefore be especially important for companies to activate an always-on recruiting, retention, and retraining strategy in the coming years.

Technology will play a powerful role—for better and for worse—in shaping how diverse the workforce of the future will be. AI, for instance, could erode progress in gender diversity. The IMF projects that more jobs currently held by women are at risk of elimination as a result of AI than those held by men.

Offsetting this risk, technology could likewise help. AI and neuroscience-based skills assessments, for example, can actually reduce bias in hiring by focusing on empirical patterns, thus expanding the potential talent pool.

Those that don't address their diversity failings will be missing out on hiring and retaining top talent and will not survive technological upheaval. But an ambitious strategy to increase diversity—and a plan to create a workplace environment that embraces it—will lead to an innovative and resilient company poised for growth and long-term wins.

Achieving innovation and resilience through diversity is crucial for succeeding in the 2020s. The push for diversity is visible everywhere—in headlines every day and as a regular part of business strategy conversation. As a largely internal matter, it should be controllable and predictable, but it remains an underleveraged opportunity to create a competitive edge.

No matter the industry, diversity and inclusion have to be a business imperative—a core part of a company's collective purpose. If leaders successfully drive diversity and establish the workplace environment that allows it to thrive, companies will gain the ability to innovate, grow, and withstand the shocks of the coming decade.

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Optimize for Both Social and Business Value

Optimize for Both Social and Business Value

BUILDING RESILIENT BUSINESSES, INDUSTRIES, AND SOCIETIES

By David Young, Wendy Woods, and Martin Reeves

As we approach a new decade, we are also approaching a tipping point for business, with new benchmarks for what constitutes a good company, a good investment, and a good leader. The defining expectation: good companies and investments will deliver competitive financial returns while helping society meet its biggest challenges, and in so doing will enable sustainable business.

Leaders with foresight and courage will use this dynamic to create new opportunities for growth, sustained returns for shareholders, and greater societal impact. To do this, they will need to think in new ways, create new modes of competitive advantage, pursue deep and broad business model innovation, and engage strategically with ecosystems. They must merge the two currently disconnected uses of the "S-word" in business: sustainability and sustainable competitive advantage.

The implications for companies, capital, and capitalism are profound. Here, we share our take on the emerging era of business value, and the CEO agenda for value and the common good.

Why Is Corporate Capitalism at a Tipping Point?

Stakeholders are beginning to pressure companies and investors to go beyond financial returns and take a more holistic view of their impact on society. This should not surprise us. After all, we have lived through two decades of hyper-transformation, during which rapidly evolving digital technologies, globalization, and massive investment flows have stressed and reshaped every aspect of business and society.

As in previous transformations, the winners created new dimensions of competition and built innovative business models that increased returns for shareholders. Many others found their businesses at risk of being disrupted, with familiar formulas no longer working. To meet the unwavering demands of Wall Street, many companies relentlessly optimized operating models, streamlined and concentrated supply chains, and specialized their assets and teams—leaving them less resilient and less adaptable to shifting markets and trade flows. The resulting waves of corporate restructuring, consolidation, and repositioning have fractured companies' cultures and undermined their social contracts.

Furthermore, this hyper-transformation cascaded beyond individual companies and created socio-economic dynamics that left many people and communities economically disadvantaged and politically polarized. Combined with the increasing shared anxiety that the earth's climate is changing faster than the planet can adapt, a global zeitgeist of risk and insecurity has emerged. We will enter the 2020s with more citizens, investors, and leaders convinced that the way business, capital, and government work must change—and change quickly.

We now must rethink the sustainability of the whole system in the face of extreme externalities—or risk losing social and political permission for further progress. The 2030 UN Sustainable Development Goals (SDGs) identify the moral and existential threats that we must meet head-on. While some question the SDGs' breadth and timeline, most agree that, if achieved, they would create a more just, inclusive, and sustainable world. Goal 17 calls for new engagement by companies and capital in partnership for collective action across the public, social, and

private sectors. Five years into the SDG agenda, there is ample evidence that governments, investors, and companies are beginning to exercise their capacity to create much-needed change.

Change Is Underway but Is Hardly Sufficient

Many institutional investors are racing to integrate ESG (environmental, social, and governance) assessments into their decision making, and they are expecting companies to report on how they deliver on those metrics. New efforts promote radical disclosure, like the Bloomberg/Carney TCFD (Task Force on Climate-Related Financial Disclosures), which encourages signatories to report on the climate risks of their financial holdings. New standards initiatives are creating a foundation for nonfinancial performance accounting, and the prospect of widespread "integrated reporting" seems realistic. Companies are investing in "purpose" and defining their contributions to society against material ESG factors and SDG goals. Corporate sustainability and CSR (Corporate Social Responsibility) functions, historically on the sidelines, are now being integrated into line business activity, with progressive companies expanding the scope of competition to include differentiation on environmental and societal dimensions. And through industry consortia, many companies are taking collective action on issues that both threaten their right to operate and open up new opportunities for their industries.

Such examples are important early signals that the context for business is changing. However, for all the progress on commitments, agreements, metrics, and policies, there has been little aggregate progress against top-level goals, like reducing CO2 emissions, cutting plastics waste, or narrowing social and economic inequality within nations. Without demonstrable impact and collective progress, social and political pressure will only build, further threatening the legitimacy of corporate capitalism.

A New Societal Context for Business

Companies will face escalating social activism by investors, stakeholders, social mission organizations, and policymakers on issues of climate risk, economic inequality, and societal well-being. Governments and local communities will set a higher bar for a company's right to operate, and in a connected world a company's local performance will quickly affect its global reputation and trigger social and regulatory consequences. Stakeholders will expect radical transparency on ESG performance. This will shift investors' perceptions of a company's risk

and opportunity, skewing capital toward those that deliver both financial returns and positive societal impact. To satisfy a growing demographic of socially minded consumers and businesses, companies will need to demonstrate "good products doing good" and anchor their brands and identity around a credible purpose. Talent will gravitate toward companies that give employees a line-of-sight to making the world better while also providing a fulfilling career.

To win, companies will need to define competition more broadly, adding new dimensions of value through environmental sustainability, holistic well-being, economic inclusion, and ethical content. This will require radical business model innovation to enable circular economies for precious resources; to provide assets that are shared rather than owned; to broaden access and inclusion; and to multiply positive societal impact.

At this critical moment for corporate capitalism, business is more trusted than government, according to the Edelman Trust Barometer. Farsighted corporate leaders will see the opportunity for their industries to mitigate environmental and societal threats, catalyze collective action to discover new solutions, shape wider ecosystems, and expand trust with stakeholders. Such actions will be indispensable to strengthen social permission for corporate capitalism before it is further undermined.

Management Will Need a Value and Mission Mindset

As in previous transformative eras for business, it will take a shift in managerial mindset to unlock new ways to win. We need a fundamental rewiring of managerial imagination and decision making, underpinned by an equation for corporate value that goes well beyond delivering a predictable P&L and a steady dividend stream.

The starting point is to instill an inspiring purpose that captures the broader ambition of the business beyond profit and gives employees meaning in their daily work. "Purpose" should not be a comforting and self-congratulatory statement of what the company already does, however—that would be an impediment to progress. Rather, it should define the aspirational societal contribution of a company based on its unique attributes, and inspire awareness of the broader context and progress toward business and societal value.

Armed with purpose, leaders can promote a culture of curiosity and courage to stretch their business models in new ways, into their surrounding economic, environmen-

tal, and societal ecosystems. Knowing that such transformative thinking can be impeded by traditional metrics, which only tell us *how* to ascribe value, farsighted leaders will work to change *what* we value. They will break from the tyranny of quarterly financial reporting by engaging investors and stakeholders in the company's performance against a more balanced scorecard, demonstrating how their actions will transform the business model, better positioning the company to deliver returns and societal impact over time. They will think beyond designing their operations and organization mainly for efficiency, and thoughtfully engineer-in redundancy, diversity, and flexibility for more resilience and adaptability. And they will enrich their decision making by including staff with nontraditional business skills.

Success in the coming decade will take management teams that both know the business and envision its larger potential to compete differently, with benefits for both shareholders and the common good.

CEOs Need an Agenda for Value and the Common Good

We frame the journey to new corporate value and the common good around six imperatives. It begins with reimagining corporate strategy, then involves transforming the business model, reframing performance and scorekeeping, leading a purpose-filled organization, practicing

corporate statesmanship, and elevating governance. (See Exhibit 6.1.) While challenging to execute, we argue that this agenda will be essential to create a great company, a great stock, a great impact, and a great legacy.
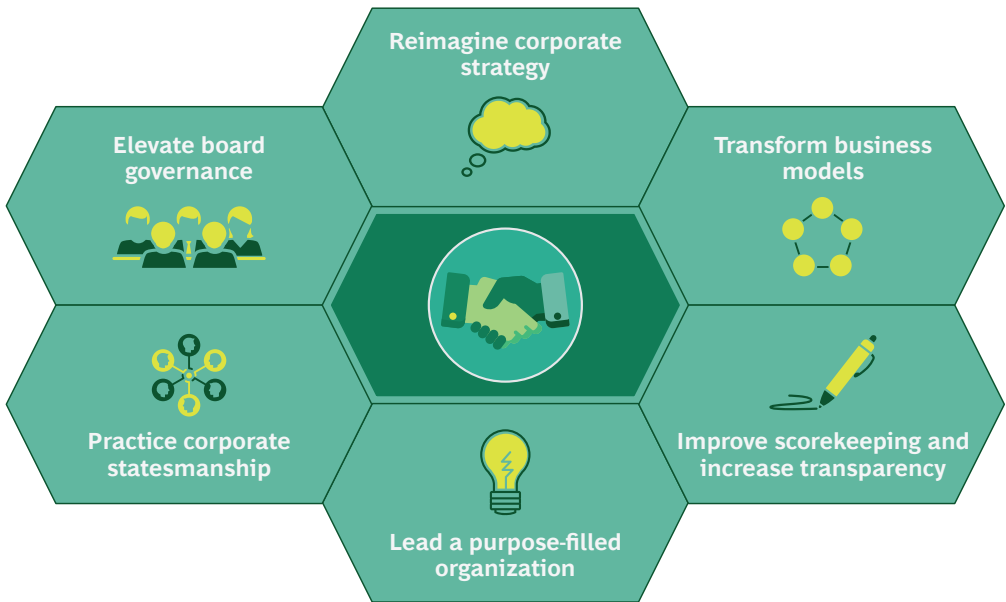
Reimagine Corporate Strategy

We believe few companies have strategies for this new era of business. Exhibit 6.2 illustrates the ambition of such a strategy, which establishes competitive advantage at the intersection of shareholder value, corporate longevity, and societal impact. The "quality" of the strategy is thus judged by how it delivers both total shareholder returns and total societal impact.

Consequently, it widens the scope of competition to encompass creating rich differentiation and relative advantage in multiple areas of societal value. It embeds "social value" into new business constructs, shared value chains, and reconstructed ecosystems. It also opens, broadens, and deepens markets to enable access and inclusion. And it expands the scope of business by calling for coalitions for collective action that address existential risks to environmental and societal ecosystems.

This new type of strategy flips leadership's perspective from "company-out" to "societal needs-in," by asking how a specific SDG target could be met by extending the company's capabilities, assets, products, services, and

Exhibit 6.1 – An Agenda for Value and the Common Good

Source: BCG Henderson Institute.

Exhibit 6.2 - Corporate Strategy Cannot Separate Social Impact from the Business
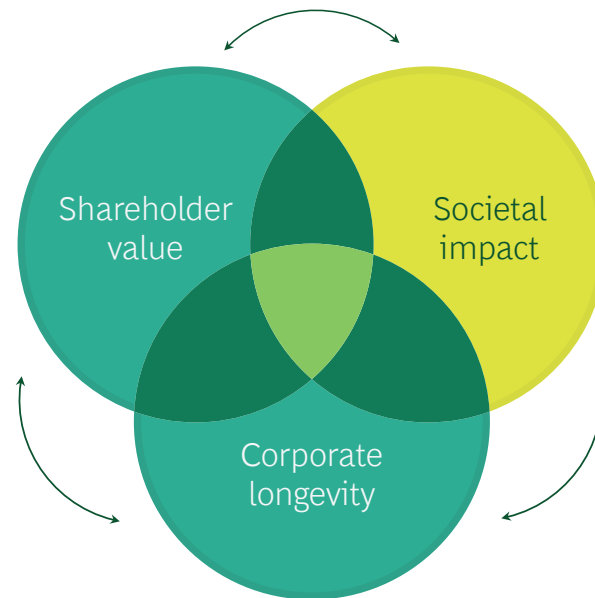
Source: BCG analysis.

ecosystem—and those of its industry. Exhibit 6.3 lists ten questions that strategists should incorporate into their strategy processes to ensure that they embrace the opportunity to create both shareholder returns and societal impact.

However, these new strategies cannot simply be grafted onto existing business models. Business models themselves will need to be transformed. Sustainable business model innovation (S-BMI) takes a much wider perspective than traditional business model innovation by considering a broader set of stakeholders; the system dynamics of the socio-environmental context; longer time horizons for sustaining adaptable advantage; the limits of business model scale, viability, and resilience; the cradle-to-grave production and consumption cycle; and the points of leverage for profitable and sustainable transformation.

Transform Business Models

We can already observe seven topologies for sustainable business model innovation, sometimes in combination, all with the potential to increase both financial returns and societal benefits.

- **Own the origins.** Compete on capturing and differentiating the "social value" of inputs to production

processes, products, or services. For example, pursue cleaner energy, sustainable practices, preserved biodiversity, recycled content, inclusive and empowering work practices, minimized waste, digitized traceability, fair trade, and so on. Performance here will require differentially advancing the societal performance of the supplier base and its stewardship of resources, communities, and trade flows. Achieving this may require backward integration to ensure fast and complete upstream transformation and then holding and using these new capabilities for competitive advantage and differentiation.

- **Own the whole cycle.** Compete by creating societal impact through the whole product usage cycle, from creation through end of life. This competitive typology puts a wide aperture on the business and requires systems analysis to uncover business models that offer the richest competitive and financial options. For example, designing for circularity, recyclability, and waste to value; creating offerings that enable sharing rather than owning to ensure high utilization of resources and end-of-life value; constructing infrastructure to facilitate circularity and repurposing; integrating into other value chains to capture societal value; educating and enabling consumers to choose whole-cycle propositions on the basis of value to people and planet. To achieve these ends, expect to reposition operations, reinvent supply chains and

Exhibit 6.3 - Ten Questions for Strategists in a New Era of Business

1 Does our purpose lead to sustainable value creation? Is our self-interest aligned with social value?

2 Are we "on purpose" and, if not, are we taking corrective action accordingly?

3 Are those actions sufficient in impact and speed?

4 Are we defining the boundary of what we measure and manage appropriately?

5 Are other stakeholders represented in or part of our strategy process?

6 Are we measuring the long-term competitiveness of the business? Have we balanced the present and the future?

7 Where does our business model fail first as a result of ESG-related risks?

8 How will we address this weakness with sustainable business model innovation?

9 Do we have the right collective-action platforms to address pressing problems?

10 Are we exercising corporate statesmanship to effect external change?

Source: BCG Henderson Institute.

distribution networks, pursue new backward or forward integration, acquire business adjacencies, or undertake unconventional strategic partnering.

- **Expand "social value."** Compete by expanding the value of products or services on six dimensions: economic gains, environmental sustainability, customer well-being, ethical content, societal enablement, and access and inclusion. Then advocate new standards, increase transparency and traceability, tune marketing and segmentation, engage customers on the product's wider value and their involvement in bigger change, and seek premium pricing. In business-to-business offerings, help customers integrate the full social value of your products, services, and business model into their own differentiation and ESG ambitions.

- **Expand the chains.** Compete by extending the company's value chain, layering onto other industries' value chains to extend the reach of your products and services and the societal impact for both parties, while changing the economics and risks of doing so. For example, use the reach of a consumer products distribution system to extend payments and financial services to small merchants; layer one company's health services onto another company's physical supply chain to benefit its workers and their families while expanding markets for health services; or use the byproducts of one company's operations as feedstock in other companies' value chains.

- **Energize the brand.** Compete by digitally encoding, promoting, and monetizing the full accumulated social

value that is embedded in products and services, along the whole value chain—from origins to customer, from cradle to grave. Use such data to rethink differentiation, the brand experience, customer engagement, pricing for value, ESG reporting, investor engagement, and even potential new businesses. For example, strengthen the brand with promotions that showcase the business's performance on the open, clean, green, renewable, and inclusive attributes of its operations; and increase customer engagement and loyalty by using data on the product's environmental and societal footprint to empower customers in choosing how their lifestyle affects the planet and its people.

- **Relocalize and regionalize.** Compete by contracting and reconnecting global value chains to bring societal benefits closer to home markets in ways stakeholders value. For example, build local and regional brands that better express local tastes and values; source from smaller local producers to minimize logistics emissions and strengthen local economies; reimagine production networks against total environmental and societal costs; capture local waste streams as feedstocks for other activities; or reconstitute jobs for microwork to use local talent.

- **Build across sectors.** Compete by creating models that include the public and social sectors to improve the company's business and societal proposition, particularly in emerging and rapidly developing economies. For example, work alongside governmental bilateral aid institutions and NGO development organizations to

improve the agricultural capacity of small farmers so they become reliable sources of agricultural inputs to the agro-processing value chain; partner with global environmental organizations and governments to promote the reuse of ocean plastics as feedstocks to production systems; partner with governments to strengthen social safety nets and prevent corruption through digitization and electronic payments; or partner across sectors to restructure recycling systems to enable higher penetration of waste-to-value business models. Extend this into industry coalitions for collective action that reshape broader rights to operate and generate new opportunities.

All seven types of S-BMI create new sources of differentiation, operating advantage, network dynamics, and societal value—enabling more durable and resilient businesses that benefit shareholders and society. But to assess and improve the performance of these business models and communicate their value, we need to expand today's scorecards.

Improve Scorekeeping and Increase Transparency

Managers will need new scorecards for a fuller equation of business value to assess and reward performance and inform decision making. While today's ESG measures are a start, their use and the mindset they represent, as for most nonfinancial reporting, remain anchored in compliance, not business advantage. Consequently, scorecards and reporting must go beyond mapping general ESG materiality. Instead, they should focus the business and its stakeholders on insightful metrics that directly connect the company's unique purpose and business models to the way the company creates differentiated value and societal impact—its *full business value (FBV)*.

These metrics will assess performance throughout the value chain—from procuring inputs, to owning the post-use cycle, to establishing the company's full societal footprint. As with financial performance, good companies will integrate these metrics into their managerial software—operating plans, target setting, investment decisions, executive compensation, and employee recognition. Further, the company will promote radical transparency of its FBV scorecards, fully reflecting them in investor relations and corporate communications, quarterly calls, and annual meetings, and making them integral to marketing, social media, public relations, and government affairs. As a result, stakeholders will see the company in new ways and its advantages relative to peers on new dimensions.

Lead a Purpose-Filled Organization

Talent prizes purpose. Consequently, winning and engaging the best talent depends on reinforcing a motivating purpose that captures ambitions beyond profit and gives employees meaning in their work. Research shows that companies with a motivating purpose have higher employee engagement, and that higher engagement correlates to better financial performance. So purpose is a win for recruiting employees with "mission-mindedness" and enhancing the organization's energy and performance.

But building a stronger organization will take rethinking the skills and capabilities that can truly differentiate performance on both financial and societal metrics. The organization can no longer delegate sustainability and social responsibility to individual departments; rather, those considerations need to be fully integrated into operations and decision making. That requires augmenting line businesses with nontraditional business skills—finding people capable in systems thinking, anthropology, social dynamics, behavioral economics, sustainability, and development policy.

Those workers will become part of agile teams that conceive innovative operating models optimized for both operational effectiveness and societal benefit within value chains, markets, and customer segments. That requires developing and rewarding new ways of working that are more flexible, embedding rapid cycles of learning and deployment, and reaching into the wider business and societal ecosystem to create positive change and performance. Successes in doing so create the stories that bring purpose alive for the organization and energize its culture.

Practice Corporate Statesmanship

It will take the scale and capacity of entire industries and their ecosystems to help solve society's biggest challenges, such as reducing plastic and food system waste. Thus, farsighted leaders will turn threats to their industry's right to operate into opportunities for reinvention and expansion. Rather than ignoring these risks or mobilizing their government affairs groups to block change, they will instead practice strategic statesmanship and build coalitions for collective action within their industry, and sometimes across industries, to find and scale new solutions.

As in their own companies, they will articulate a compelling purpose and vision for how the industry and ecosystem could expand the total value delivered to society, while ensuring the industry's longevity,

profitability, and resilience. They will promote platforms that foster pre-competitive R&D, scale solutions, expand access and inclusion, accelerate industry learning and standards, and build capacity in the larger industry ecosystem. They will seek new partnerships with the public and social sectors to multiply what the industry could accomplish alone and shape new models of collective action for positive societal change.

Elevate Board Governance

Boards need to build new capacity to responsibly guide management toward setting an ambition for the *full role* the corporation will play in society. As with current management, most directors spent their careers focused on financial performance, with some sidelined activities in CSR and sustainability. However, to steer the company in this new era of business and hold the CEO accountable for the company's financial, environmental, and societal performance, boards will need to be educated on societal needs and the SDGs; they will need directors with different skills and life experience in the social sectors; and they will need to restructure committees, charters, and policies to provide oversight on social performance. They must challenge long-held views about the boundaries and time horizons of business, about what makes a good CEO, about new risks and rights to operate, and about measuring performance, and they will need to expand their view of managerial competence beyond the ability to hit annual business targets. They must also assess whether management is building a more resilient and adaptable company that delivers for shareholders and society even at the expense of short-term financial performance.

This ambitious agenda challenges us to reconceive business, commit to purpose, and pursue sustainable business model innovation. Doing so will open up new opportunities for growth, shareholder value, and benefits to society and the planet. CEOs and their boards can wait to be pushed into this agenda by competitors, customers, and regulators. Or they can embrace it proactively and use it to reinvent the company, reshape the industry, propel the stock, deliver remarkable impact, and leave a notable legacy of corporate public good.
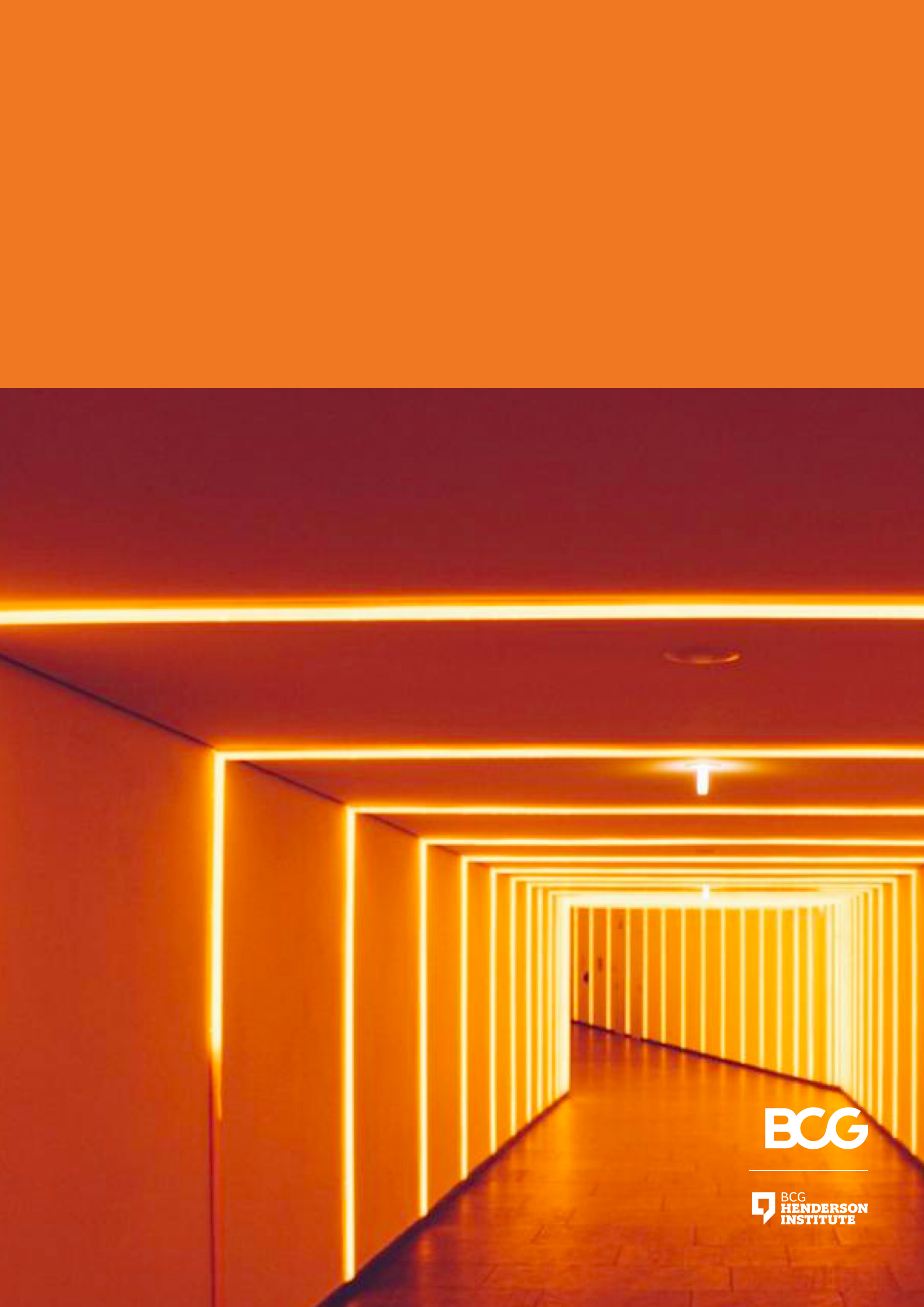
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