



Research Insights

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Six crucial strategies that define digital winners

The power of AI-driven operating models

IBM Institute for Business Value



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Talking points

Platform networks drive revenue growth but beware of the ramifications for branding

Platform owners integrate connections, earning income from their own customers and also taking a slice of transactions facilitated for others. Yet because platforms often host competitors, comparison shopping is easier. Brands must earn customer trust and build loyalty with every transaction. The rise of the customer experience has been trending for more than a decade, but new customer demands may outpace anything that's come before.

AI and automation are propelling new and unique customer and employee experiences

Leading organizations use AI to gain insights into customer wants and needs and to create experiential impact through redesigning important aspects of their operations. And they're changing the nature of work with the power of intelligent automation. Where once organizations engineered processes for efficiency and imposed them on workers, AI and emergent technologies are liberating humans to make better-informed decisions on their own.

A culture of inclusiveness that encompasses employees, ecosystems, and digital networks is critical to succeeding in the digital age

In fact, most leading organizations track diversity and inclusion measures, and state that these two measures are key contributors to financial performance.

The digital dance: Bold moves equal bold results

Virtually all of us use companies that have pivoted to successful platform business models, embraced AI, and pioneered other digital technologies. These companies have inevitably taken one step beyond the obvious, and they've inevitably taken intrepid risks. Examples abound.

Netflix competed against storefront retail by introducing cheap, convenient DVDs by mail. Then it became bolder and introduced subscriber-based direct streaming. The one step beyond? Not content to be a clearinghouse for externally produced content, the company developed its own shows, only available on Netflix, of course.¹

Aggregating vendors on a platform? German-based hotel booking site trivago didn't stop there. It became the "re-direction point" to other websites for hotel deals—disrupting the industry in the process.² Uber not only manages an asset-free fleet base, it audaciously introduced a transparent pricing model.³

Line Corporation, the Japanese subsidiary of the Korean internet search giant Naver, publishes webcomics, music, and video games. Its step beyond: developing Gatebox, a holographic, AI-driven virtual home robot companion.⁴

Curious about your heritage? Ask 23andMe to scan your DNA. But the company does way more than process test results. Behind the scenes, 23andMe also monetizes aggregated genetic information to biopharmaceutical companies, and it's working with several biotechs to develop genetically sensitive disease treatments.⁵

Through moving to digital platforms, these companies have reinvented themselves and significantly boosted their sales and market values. Not every company that travels this road will thrive so spectacularly. Still, organizations are asking the same questions: *What is the secret to successfully leveraging platforms, AI, and other digital technologies in today's digital race? What strategies and operating models are winning?*

How Leaders lead



96%

of leading executives in our sample share their corporate vision to unite and inspire employees



93%

of those surveyed cite creating brand reputation as the most critical aspect of their operating models



Close to 90% of our respondents leverage automated workflows with self-learning software to deepen customer relationships



81%

of surveyed respondents are platform orchestrators—building a network of buyers and sellers for integrated communications and optimized workflows

We found out by identifying the characteristics and strategies of the world's most prosperous digital companies. The IBM Institute for Business Value (IBV) conducted a comprehensive worldwide primary research study of 1,500 mostly C-level executives. We wanted to learn about their investments, leading practices, and cultures. We were seeking to define a group of organizations that represent successful strategies and operating models across industries and around the globe. These “Leaders” are winning on almost every front—from growth and profitability to a wide spectrum of digital transformation.

Additionally, we identified three other groups: “Achievers” have high ambitions and intentions, but their performance falls short of Leader-level impact; “Followers” are active in some leading practices, but slower to respond to digital change; and “Observers” are essentially not participating in digital transformation (see “Methodology” section, page 24, for more details).

Reconceiving the customer experience on platforms and establishing deep bonds of trust take center stage.

The six winning strategies of Leaders

The organizations that we call Leaders were selected based on four self-reported attributes:

- Sustained industry leadership (now and in the next three years)
- Significant revenue growth (past three years)
- Significant profitability (past three years)
- Operations integrated with emerging technologies.

These Leaders report their people, processes, products, services, and technologies set them apart. Their operating models include responsiveness, innovation, and brand and market reputation focus, all while providing consistent outcomes.

The capabilities that differentiate Leaders from others—learning, speed, and ongoing exploration—fuel their strategies. These same capabilities bolster the bets they’re making on new platform business models and support their singular and distinctive focus on mastering a new era of branding. Reconceiving the customer experience on platforms and establishing deep bonds of trust take center stage.

We found Leaders are passionate about developing customer experience-based connections, integrating workflows with artificial intelligence (AI) and automated technologies, and personalizing their brands and employee experiences.

In this Research Insight, we explore the six top strategies Leaders employ to perpetuate success.

1. **Orchestrate digital ecosystems and platforms.**

Leaders report that digital platforms are on the rise, with the potential for advancements in revenue growth and profitability.

2. **Build trust to build your brand.**

Platforms are also influencing the nature of brands, which must adjust accordingly. Trust is a key ingredient.

3. **Reimagine customer behavior.**

Leaders are reimagining the rapid shifts in customer conduct and personalizing their experiences using rapid design and get-to-market techniques.

4. **Curate data that “thinks” and “acts.”**

Leaders are cultivating and curating a plethora of data, turning it into immediate and actionable insights. With their keen senses of speed, they are integrating “thinking” technologies such as AI and automation.

5. **Create an exponential learning environment.**

They are implementing exponential learning—both human and machine—across the entire organization. They use automated processes and self-learning, self-correcting workflows to deepen customer relations and change the nature of work for their employees.

6. **Foster a culture of inclusion.**

Finally, they are inclusive with their employees and larger, extended networks of partners and customers as they co-create customized experiences for all. They know that workforce diversity matters. Leaders understand that bold moves can only be achieved by sharing a compelling vision and creating a united, inspired organization.

Expect—and introduce—the unexpected

These most successful organizations aren't sitting on their laurels; they see entirely new vistas of change and opportunity.

In every aspect of their businesses, they're relentlessly focused on speed. That includes increased operational velocity to respond to environmental changes, as well as the build-out of new goods and services. Leaders connect digital operations to research and development, manufacturing, sales, service, and channel partners to provide the ultimate customer experience. They turn to data and AI to institutionalize exponential learning—learning for their people as well as the machines, infrastructure, and workflow that span increasingly complex value chains.

In the most recent IBM Global C-Suite CEO study, we learned that CEOs continue to recognize the criticality of disruption but, unlike the past, few are intimidated by it.⁶ CEOs today are better at anticipating disruption and no longer consider it unsettling. They've grown accustomed to the barrage of change and have embraced it. CEOs are factoring this reality into their day-to-day operations, organizations, strategies, and cultures.

As a result, a growing number of CEOs are embracing radically new models. And as they reinvent their operating models on new business platforms, they recognize the dramatic benefits from innovating with partners across ecosystems.

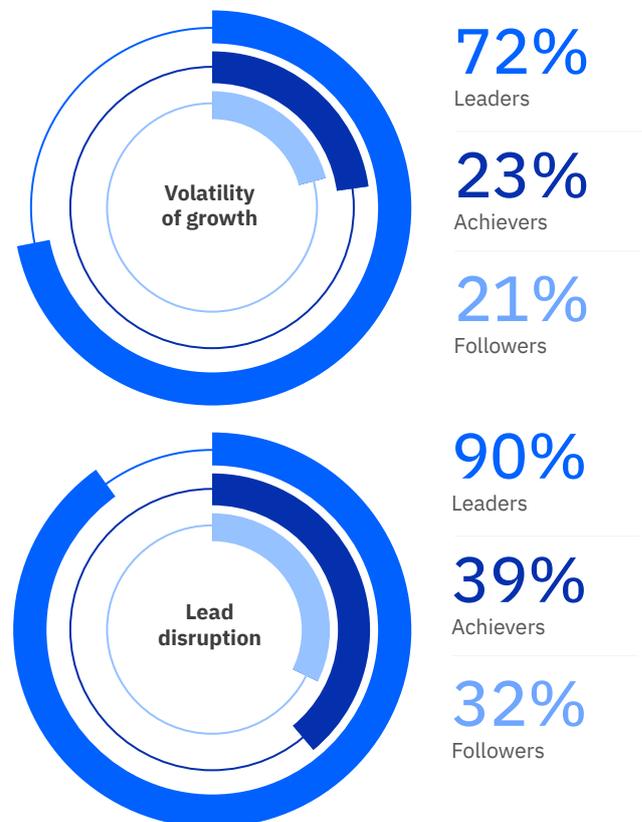
Anticipating an unpredictable future, 96 percent of Leaders say they're very effective at responding to disruptive forces in their markets. What's more unusual and defies conventional wisdom is that these companies are leading the charge to introduce disruption. More than twice as many of this group say they lead disruption than the other groups in our study. These Leaders have their own world views and senses of where markets are heading—perspectives markedly different from other organizations. Nearly three-quarters expect the growth in their regions to become highly volatile in the near future (see Figure 1).

The eagerness of these leading companies to step outside the norm and disrupt their markets surprises on several counts. First, disruptors are more typically challengers—the upstarts or startups that have little to lose—not organizations that are already prosperous. Second, as market dynamics usually dictate, the increasing competitive concentration across many sectors should lock in success. Those already thriving should be better positioned than others in the future.

Typically, the most successful organizations in our study would be content to stick with what's already working. Instead, they're determined to introduce and undergo radical change.

Figure 1

Anticipate volatility—and create it



Q. State of economic growth: volatility of growth in your region in next 3 years. Rank 1-5. 4/5 responses. Q. To what extent do you agree with the following statement? We lead disruption in our industry. Rank 1-5. 4/5 responses.

Most companies agree on the importance of business platforms to their organizations' future. What sets leading companies apart is what they're doing about it.

Leading strategy #1 Orchestrate digital ecosystems/platforms

In essence, digital business platforms are a vehicle for trusted exchange among multiple producers and consumers. Notable examples include Amazon, Alibaba, eBay, Expedia, and Salesforce. Platform owners coordinate these connections, earning revenues from their own goods and services and also by taking a share of transactions they facilitate for others. Done right, business platforms are able to scale with speed to create new value and capture new markets. This requires intense collaboration among the organizations on the platform, as well as crafting a value proposition that can be shared by all.

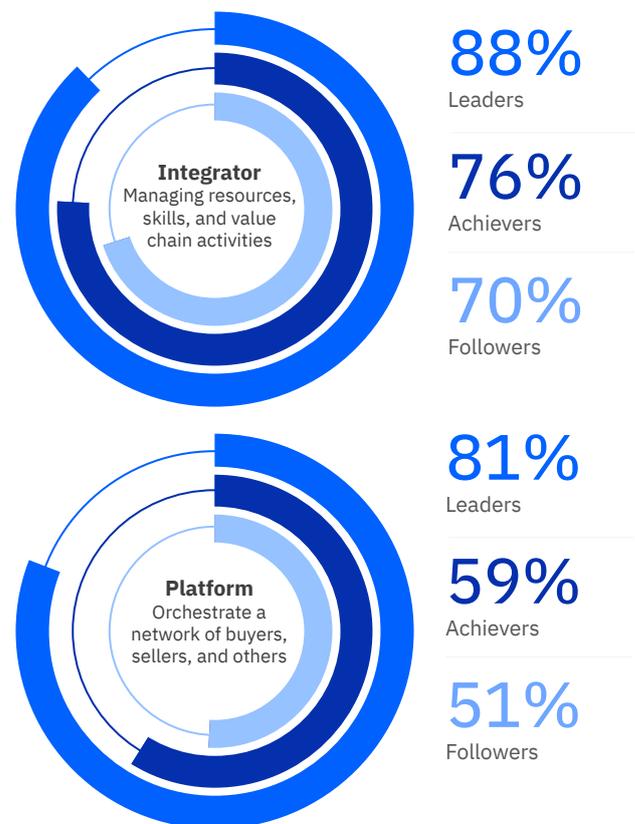
When asked which business and operating models their organizations are adopting or considering for the future, most respondents declared their intention to act as integrators of resources across a value chain. Their preferred position is to derive value from an ecosystem and maintain control of the customer experience. One way to implement this integrator strategy is on a digital business platform.

Most companies agree on the importance of business platforms to their organizations' future. What sets the leading companies apart is what they're doing about it: 81 percent are orchestrators of other businesses on platforms (see Figure 2).

By coordinating direct interactions between consumers and producers, platform orchestrators harness network effects for performance advantage. On average, platform orchestrators grow revenues faster and generate higher profits than other business models, earning market valuations as high as eight times revenue.⁷

Figure 2

Leaders integrate value chains and orchestrate platforms



Q. Which of the business and operating models above are you currently using, experimenting with, or considering in the future?

Supply chain business network platform supports growth⁸

To keep pace with fast-changing consumer trends, global beauty and personal care brands are looking for innovative ways to engage their customers. Whether customers see cosmetics on a commercial or in a store, bold packaging is a powerful way to spark their interest while creating a visual brand. Albéa S.A., a health and beauty packaging provider based in France, is one of the world's largest manufacturers of fragrance bottles and packaging.

The company needed a solution that would enable the delivery of reliable trading partner integration 24 hours a day, 7 days a week. They developed a supply chain business network solution, a cloud-based digital business network platform. The solution provides real-time communications with clients and suppliers, but also integrates data between the various applications that control their factory production lines.

The platform has improved operating cost efficiency, accelerated onboarding of new value chain partners, and offers high availability—which supports business growth—to customers.

Platform owners often choose to orchestrate assets rather than own them, freeing up capital to invest in the platform and quickly scale. This can radically change what they do. Starwood Hotels, for example, shifted its core business model from owning property to managing property. And Starwood was later acquired by Marriot to extend Marriot's own platform strategy.⁹

Platforms break down traditional conventions; organizations no longer need to actually own assets. Platforms can also change competitive relationships, because rivals are often invited to join the platform to create better, more seamless services. For example, instead of buying goods from producers and selling them online (the Amazon model), Alibaba brought the retailers online and supported their shop fronts with tools, digital infrastructure, and data.

In every industry, those who operate on business platforms are trading supply-side for demand-side economics, opening up their platforms for participation by others, and otherwise rewriting the rules of the game. Platform owners reconceptualize what their enterprise does and how it does it. To do this, they need to look well beyond current market dynamics.

Consider what's happening in the auto industry. Some automotive manufacturers are turning their cars into "channels" so that passengers can purchase services and goods directly from their cars.¹⁰ Others are helping owners rent their cars to each other.¹¹ Still others are crafting platforms that make it possible for packages to be delivered to unattended parked cars.¹²

It's the data provider role that most sets Leaders apart from Achievers.

On business platforms, different roles delineate the value that can be created. The most common role is platform user. But Leaders and Achievers are gravitating toward two additional roles in particular. They often serve as data providers, facilitating communications with partners across ecosystems. And they are experience providers—coordinating products and services to enhance the customer experience.

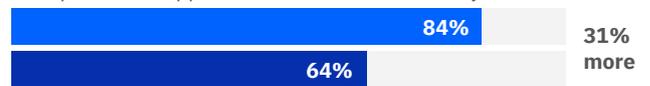
It's the data provider role that most sets Leaders apart from Achievers (see Figure 3). Because platforms include multiple organizations with various types of goods and services, they generate high volumes of heterogeneous data and related insights. Hoarding these acquired insights benefits no one.

Instead, platform orchestrators can use this data to advance continuous learning and performance improvements to organizations across the platform. How? By integrating, analyzing, and feeding continuous data streams to participants. Organizations that excel in data collection, integration, and analysis are well positioned to assume this critical role.

Figure 3

Data criticality, ecosystem access, and experience creation serve as key differentiators

Data provider: Supplies critical or essential ecosystem data



Platform user: Access customers, suppliers, or information



Experience provider: Orchestrate customer experience



Leaders
Achievers

Q. What role/s does your organization plan on or around platform-based business and operating models?

Leaders recognize they must earn customer trust and earn it again with every transaction.

Leading strategy #2 Build trust to build your brand

In a world reconfigured by business platforms, branding challenges emerge. The new dynamics are many. Business platforms often host competitors, facilitating comparison shopping and potentially diminishing brand loyalty. Subscription-based services, which are enjoying exponential growth and proving an increasingly popular platform option, may lock in one brand and shut out others. Voice-controlled devices remove the benefits of visual branding and placement, factors most replenishable consumer goods companies have historically depended on.

The upshot? Online platforms, combined with winner-take-most market dynamics, steadily erode the number of brands. Some big brands are growing, achieving “superstar” status, while many medium-sized brands are losing share. They are “drowning in a sea of sameness.”¹³ And as more organizations add services to their product portfolios, brand attributes important to customers are changing.

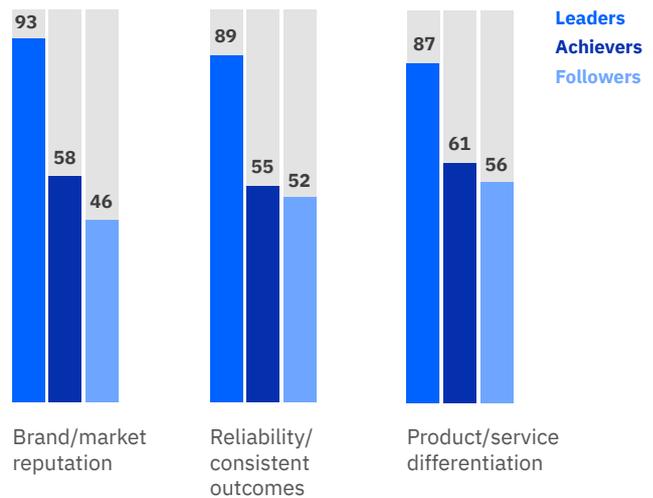
Leaders appear to be aware of what’s at stake. An astounding 93 percent of them identified building their brand reputations as one of the most critical aspects of their operations (see Figure 4).

Leaders recognize that, with the emergence of business platforms, brands can no longer rely on blind loyalty. Instead, they must earn customer trust and earn it again with every transaction. Standing apart from the pack requires something more, a deeper engagement with the customer that builds upon that trust. For more than a decade, pundits have been talking about new customer demands and the rise of the customer experience. Leading companies recognize that these trends could pale in comparison to the changes ahead.

Leaders also understand that every touchpoint—from product and service acquisition to delivery—contributes to the customer experience. Speed and responsiveness are critical across end-to-end operations. Eighty-five percent are already accessing real-time information to optimize processes and networks for quick actions and results. Their mantra: reliable, consistent customer outcomes—outcomes that customers can trust.

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Figure 4
Strong operating models lead to strong brands



Q. What are the central elements of your organization's operating model?

A successful product differentiation strategy also creates brand loyalty among customers, allowing businesses to compete in areas other than price. Often this strategy creates the perception of exclusivity: When you focus on quality and design, there's no substitute. Eighty-seven percent of Leaders report that providing differentiated product and service offerings sets their organizations apart from competitors. Over the next three years, launching new products and services is one of their most important business objectives, along with an emphasis on improving the customer experience at every step.

Establishing deep trust is an integral part of a differentiated brand proposition. How to earn this trust? Seamless, personalized customer interfaces and operational execution, including reducing bottlenecks and breakdowns, go a long way.

While real-time, data-driven personalization of brand experiences is an imperative, it also presents a hazard. People tend to trust each other more than they trust institutions. With extensive personalization, the collective dynamic is diffused. Leveraging the power of peer influence—perhaps by offering the perks of “membership” in something greater than themselves—is important. The result? A holistic brand experience that emphasizes interdependence.

The community, connecting people to people, is the product. The business acts as a platform for creating experiences designed to elevate peer-to-peer conversations, transactions, and trusting relationships. The brand provides a sense of structure and norms, playing an indispensable role. Yet it allows the community to develop its own energy, growth, and culture of trust.

BEHR sees 17 percent lift in purchase consideration across target demo¹⁴

BEHR Paint was looking to reach and engage consumers on a one-to-one level with personal recommendations that make the interior paint color selection process easier. Since selecting paint colors is an individual experience, an AI-powered conversational marketing experience provided a perfect way for BEHR to offer personalized paint color recommendations at scale, helping to take the indecision out of the interior painting process.

To that end, BEHR launched the first AI-powered conversational marketing experience for the retail industry, showcasing BEHR's top-of-the-category benefits, and helping increase brand favorability and purchase intent.

The AI-powered advertising solution leverages AI application programming interfaces (APIs), such as natural language processing (NLP) and tone analysis, plus extensive training on BEHR paint colors to deliver a unique paint color recommendation for each user.

Through this AI-powered conversational marketing solution, BEHR exceeded brand benchmarks and saw meaningful time with consumers, including:

- More than 15,000 one-on-one conversations between BEHR and consumers, helping each user find their own personalized paint color recommendation
- 45 seconds average time spent within the advertising unit per session
- 17 percent increase in purchase consideration for BEHR among their target audience
- 8.5 percent incremental lift in foot traffic to BEHR exclusive retailer locations

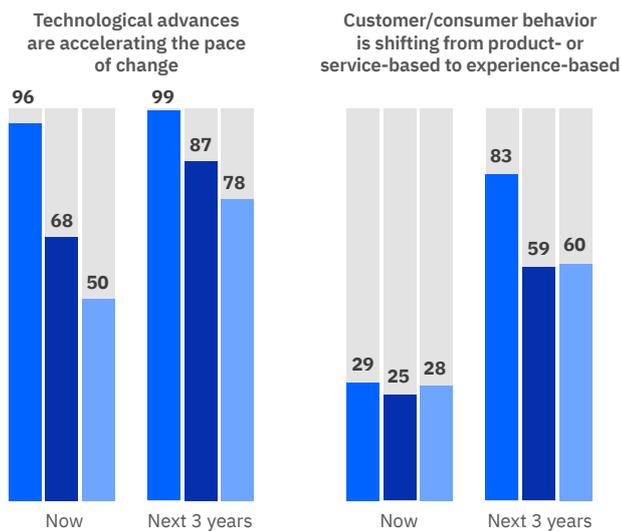
Importantly, these AI-powered conversational advertising experiences act as miniature focus groups, providing real-time audience and customer insights. BEHR can use these findings to improve their ongoing product and marketing strategy.

Leading strategy #3 Reimagine customer behavior

Most Leaders report that technology is the prime driver of today's changes. Tomorrow, they expect a far different scenario. New technologies will remain an impetus for change, but the number of Leaders who expect customer experience to drive change in their organizations jumps nearly threefold (see Figure 5). Those companies primed to disrupt their industries and rethink their branding are scrambling, moving fast to meet the changes ahead.

The Leaders' highest priority and singular business objective is to improve the customer experience (see Figure 6). Indeed, they are more focused on this than any other objective, including launching new products and services, entering new regions, and growing share.

Figure 5
Change changes again



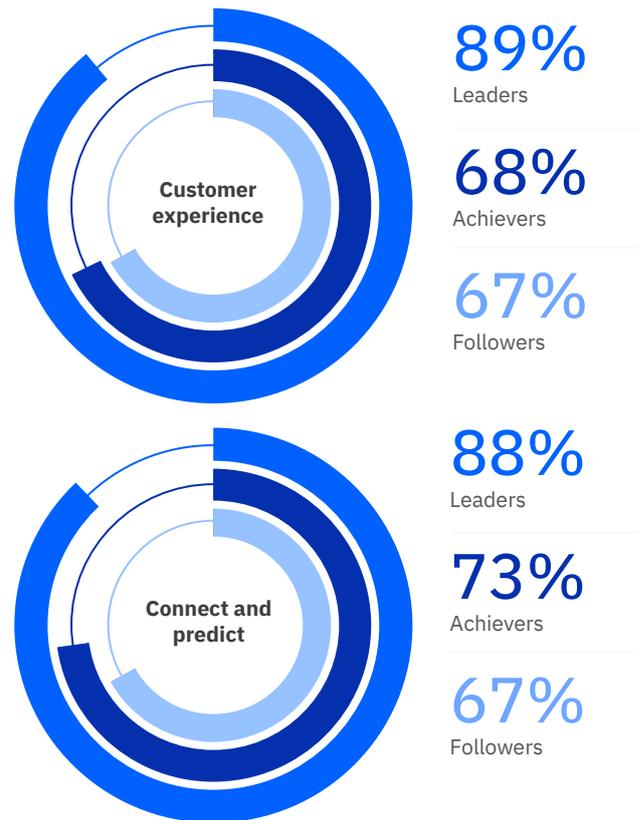
Leaders Achievers Followers

Q. What kind of changes are occurring or will occur in your industry? Now, next 3 years. Rank 1-5. 4/5 responses.

With all eyes focused on the customer, Leaders look to AI technologies for insights and impact. This means they use AI not just to better understand customer wants and needs (gaining insights), but also to redesign important aspects of their operations (creating impact). Ninety-eight percent report that the primary technologies in which they will invest over the next three years are cloud computing and cognitive computing/AI.

Figure 6

The customer experience is the top priority



Q: What is your organization's most important business objective? Improve customer experience. Q. What is your organization's highest priority? Connect with customers digitally to understand product usage, predict future demand, and predict and respond to issues.

Applying design thinking is one of the attributes that most distinguishes leading organizations.

Leaders are using AI systems and cognitive solutions to reveal patterns that might otherwise go undetected. AI systems understand unstructured information in a way similar to humans. But these systems not only *consume* vast amounts of data with far greater speed, they *learn* from interactions. In doing so, AI can reveal insights that help employees provide informed, real-time responses to customer inquiries.

One way of reimagining customer behavior is by applying design thinking—the open exploration of what customers might want—to discover their unmet needs. Leaders employ a “build-as-you-go” strategy that prioritizes design thinking and rapid prototyping to understand specific customer needs. This strategy also helps these organizations design new products, services, and experiences well in advance of their competitors.

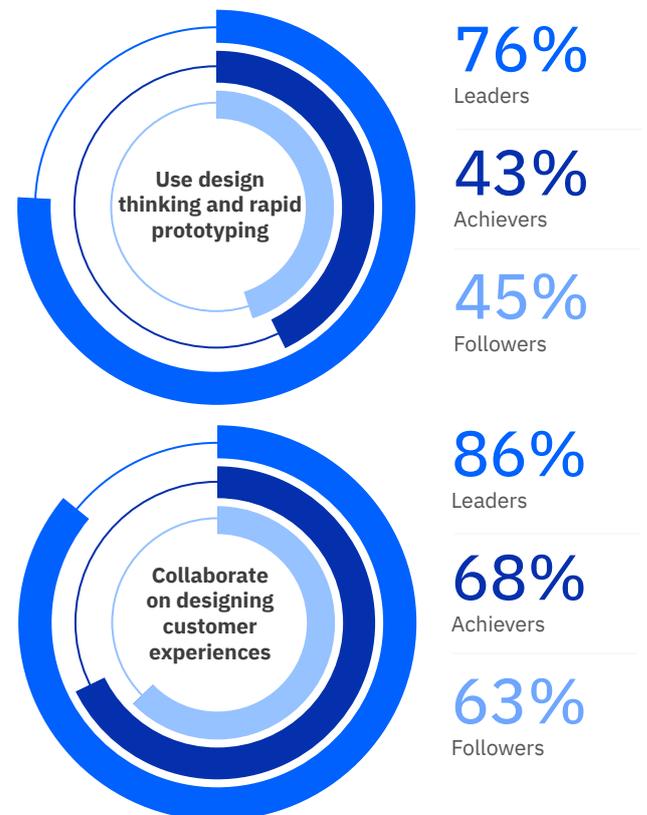
A design-thinking approach doesn’t jump to conclusions about what customers want. Instead, leading organizations connect with their customers digitally to understand product usage and predict future demand patterns (see Figure 6). They “stand in the customer’s shoes” to explore every touchpoint, map the journey, and identify gaps in the experience. In essence, they are reimagining customer behavior.

Organizations can and should draw on social, psycholinguistic, and other unstructured data to create personas. They seek opportunities to build trust, to move beyond mere personalized experiences to humanized ones. A critical understanding: trust is the currency of the humanized experience.

The propensity to apply design thinking is one of the attributes that most distinguishes leading organizations. Seventy-six percent of Leaders use design-thinking methodologies to quickly prototype, test, and refine elements of their strategies (see Figure 7). Fewer than 50 percent of Followers and Achievers do the same.

Figure 7

Get closer to customers through co-creation and collaboration



Q. What is your organization's highest priority? Use design thinking and rapid prototyping techniques to build as you design, modify as you go to test, and refine elements of strategy. Q. Statement reflecting your organization's connection with customer and ecosystem partners: We collaborate with customers on designing new customer experiences.

Curating customer content¹⁵

A premium streaming service sought to increase brand awareness and uniquely personalize the customer experience. To that end, it developed the first ever AI-powered advertising experience for the media and entertainment industry. The company co-created the prototype solution with a demographically diverse group of consumers. The resulting solution featured a personalized content recommender that took advantage of NLP to ask users questions about their mood and viewing habits. Users engaged through text entry, voice entry, and quick-pick buttons—and received personalized programming based on the exchanges.

Additionally, the company integrated weather data into its campaign, reaching consumers when weather conditions were increasingly driving content consumption. For example, cold or damp weather might be conducive to curling up with a good show or a movie.

The company saw significant audience engagement, including more than 40 million total impressions served and almost 20,000 active user sessions. As it improved brand awareness and downloads, it was better able to communicate with consumers.

Collaborative or co-creation approaches set the stage for rethinking customer needs top to bottom and reconceiving customer journeys. Prototyping helps to do this with speed, empowering fail-fast and build-as-you-go approaches. Inviting customers to participate in a design and prototyping event is co-creation. Eighty-six percent of leading organizations collaborate with customers on designing new customer experiences (see Figure 7).

With customer co-creation as a foundation, Leaders are able to reimagine how their organizations orchestrate processes, activities, and interactions and create entirely new value for customers. This includes engaging customers through automating and augmenting human interactions—and also rethinking the supporting processes that can optimize customers' trust.

Leading strategy #4 Curate data that thinks and acts

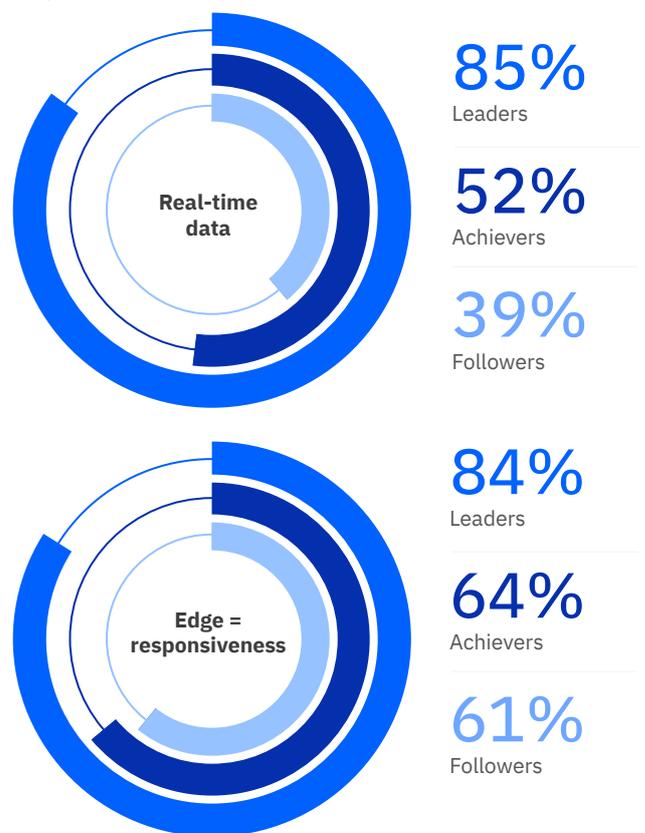
The volume, variety, velocity, and veracity of data are hot topics among executives. More organizations are adopting AI-related technologies to make actionable sense out of that data. But many apply AI more broadly. They use AI to enhance decision making overall, drive new business models and revenue streams, and enable a new classification of smart (AI and IoT) products and services based on reasoning and learning.

What capabilities will executives prize? Cultivating, curating, and dynamically synchronizing interconnected data—and automating operations. And nothing illustrates the orientation of Leaders toward speed better than their achievements with real-time data. In fact, nearly nine in ten say real-time data provides access to immediate, actionable insights that can improve responsiveness (see Figure 8).

More than half say they plan to expand that access to real-time insights by adopting edge computing, a distributed computing paradigm in which computation is largely or completely performed on distributed smart devices, such as IoT and nodes. Already, 39 percent of Leaders consider themselves advanced users of edge computing. When asked why they value this technology, far more cite the ability to produce faster response times than any other advantage.

Figure 8

Immediate, actionable insights can enhance responsiveness



Q. Level of agreement about your organization's engagement? We have immediate, actionable insights from real-time data. Rank 1-5. 4/5 responses. Q. What is the most important benefit of edge computing to your organization?

Four out of five leaders consider the introduction of robotics and intelligent automation one of their most important objectives.

Edge computing helps support decisions at the front lines, whether that's a salesperson on a shop floor or a customer service rep in a call center. Insights are immediate, and action can be automated.

Customers increasingly want full transparency to supply chains, from inventory to last-mile logistics, with the ability to respond to what they see. This requires organizations to connect processes end to end for speed, efficiency, and in-the-moment responsiveness. To achieve this, Leaders are turning to intelligent automation to reconceive their operations, a high priority for them.

In fact, an astounding 81 percent consider the introduction of robotics and intelligent automation as one of their most important business objectives in the next few years. Improving the customer experience, quality of data, and improved insights for decision making are among the high-ranking benefits. Also, highly valued benefits of AI include enhancing workforce capabilities and personalizing experiences (see Figure 9).

Figure 9

Robotics and AI can improve both the employee and customer experience

Benefits of robotics/process automation



Benefits of AI/cognitive computing

(Percentage of Leaders selecting as one of top five benefits)



Q. Which benefits of robotics/robotic process automation are/would be most important to your organization? Rank 1-5. 4=somewhat important and 5=very important. Q. Considering the application of AI/cognitive computing to your business, which of the above areas provide the greatest potential benefits? Select up to 5.

Leading organizations are changing the nature of work with the power of intelligent automation. They're utilizing robotics, automation, and AI to rethink processes and workflows. With new capabilities in place, they can detect everything happening around them, from the movement of a person or a piece of equipment, to inventory turns or downed power lines. Once they have situational awareness, coupled with the capacity to learn, they can respond with both speed and precision. In short, they can optimize intelligently in the moment.

With AI, machines can learn from patterns and trends, recommending changes and reconfigurations to their own workflows. In this way, intelligent automation is ushering in what's often referred to as the fourth industrial revolution, or Industry 4.0. This era encompasses the current trend of automation and data exchange in manufacturing and production technologies. Industry 4.0 also includes cyber-physical systems, the IoT, cloud computing, and AI.

Where once organizations engineered processes for efficiency and imposed them on workers, AI and emergent technologies are liberating humans to make better-informed decisions on their own. In many domains and professions, such as medicine, oil exploration, or avionics, AI expert systems foster deep learning and problem solving. As a result, every role or profession can pivot from mining data and experiences for patterns—let the machines do that—to exploring what those patterns really mean.

Industry 4.0: Applying predictive analytics with machine intelligence¹⁶

KIST (Korea Institute of Science and Technology) Europe helps factories improve weight measurement reliability, boost production quality and continuity, and reduce costs with its predictive analytics solution. It has been developed together with Mettler Toledo and IBM at SmartFactory^{KL}, a collaborative network of more than 50 member organizations that focuses on Industry 4.0 and smart manufacturing.

As part of an Industry 4.0 collaboration, KIST Europe is helping transform factories by using a powerful predictive model infused with machine intelligence that can detect inaccuracies. Collecting production data from the shop floor, the AI-driven solution watches for patterns that could signal an off-kilter reaction.

Learning from past metrics, the model can spot statistical anomalies among the vast collection of data points. For example, slightly elevated vibrations in a conveyor belt adjacent to a scale, combined with unexpected weight measurements, could signal that the scale needs recalibration. With this early warning insight, factory employees can fix problems before they cause production downtime, rework, or revenue loss.

Leaders report that what sets them apart is not just their business models, but the excellence of their execution.

Leading strategy #5 Create an exponential learning environment

Organizations are learning about learning the hard way: They can't hire fast enough to keep up with perpetually changing skills. But by creating an environment of exponential learning, they can continuously reskill their workforces, including their executives. Exponential learning—the ability to continuously increase the speed of learning—includes:

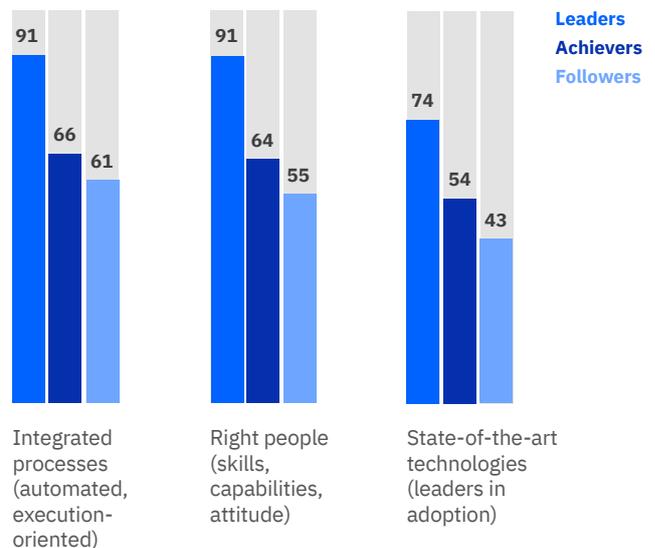
- Traditional formal training for a specific job or talent
- Training that occurs at the moment of need
- Experiential on-the-job learning acquired as employees interact with other team members and mentors
- And of particular focus here, augmented learning.

Augmented learning is guided by AI tools and includes monitoring, alerts, scheduled events, and analytical tasks. This type of learning needs minimal routine interventions by humans. It uses the reasoning and learning abilities of cognitive computing to analyze a large body of operational information from multiple sources and execute accordingly. The workflow may include many human or system-to-system steps that can be further automated by robotics, IoT, and other tools.

The rise of analytics makes data easier to access and use than ever before. A key characteristic of analytics technologies, and augmented learning in particular, is a reliance on data—the more data, the better. Greater volumes and sources of data can result in more accurate and meaningful insights. And insight-driven AI and cognitive computing systems use combinations of algorithmic, NLP, and machine learning capabilities to create more natural interactions, and learning, between people and machines.

Leaders report that what sets them apart from competitors is not just their business models, but the excellence of their execution (see Figure 10). In short, people, processes, and foresight make the difference. And if how they execute is what matters most, the first principle is to act with alacrity. Leaders are orienting everything toward speed, which means they respond to events with immediacy and shift course seamlessly. Skilled people, in tandem with intelligent, self-learning machines, can provide new insights that enhance rapid decision making and agile responses.

Figure 10
Execute with excellence

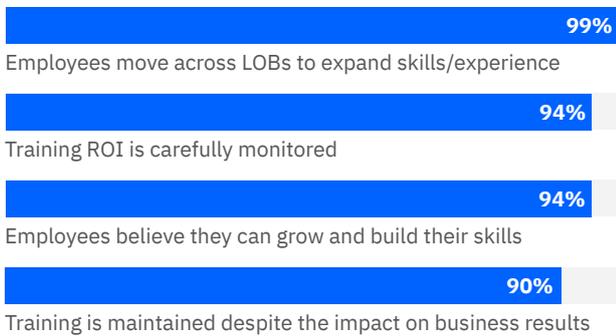


Q. What best sets your organization apart from competitors in your industry?

Leaders excel at creating all dimensions of an exponential learning environment (see Figure 11). They maintain employee training even when current business results are challenging. They foster experiential learning by frequently moving employees across various lines of business (LOBs) to expand skills. They pay close attention to employee metrics, especially return on training investments. Yet they realize the importance of keeping skills current and maintaining training programs even when direct impact results cannot be measured. And AI is critical, with 70 percent of Leaders prizing it for enhancing workforce capabilities and productivity—more than any other benefit.

Figure 11

Leaders excel at exponential learning

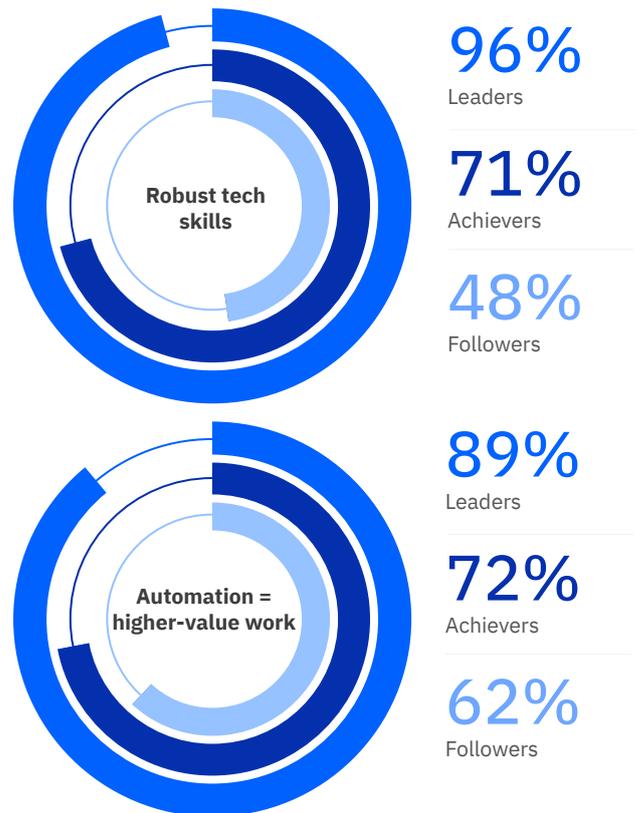


Q. Level of agreement with the above statements about your organization. Percentage of employees rating 4 or 5 on a scale of 1-5.

The result? Employees in the leading organizations aren't just competent, they're confident. Leaders are far more likely than others to report that their organizations have cultivated an environment where they can build their skills and grow. More than nine in ten report that their workforce has robust technical skills related to AI, IoT, blockchain, and more, while they plan to use robotic process automation to free up staff for higher-value activities (see Figure 12).

Figure 12

Tech-savvy employees create higher-value work



Q. Level of agreement about your organization's engagement: Our workforce has robust technical skills around AI, IoT, blockchain, etc. Rank 1-5. 4/5 responses. Q. Which benefits of robotics/robotic process automation are/would be most important to your organization? Freeing up staff for higher value work. Rank 1-5. 4/5 responses.

In fact, according to a recent IBM IBV study, “The human-machine interchange,” seven out of ten operational executives reported that digitization and intelligent machines lead to higher-value work. Sixty-one percent said intelligent machines will create a meaningful impact on changing job descriptions and activities in the next three years. For our group of Leaders, the stakes are even higher.¹⁷

As organizations adopt augmented learning, an exponential learning culture emerges. This culture is not simply training people in new skills, automating robots to do routine tasks, and creating self-learning software. It’s all of that and more. People increasingly collaborate with and monitor intelligent machines. Automated processes and workflows are learning, and everyone’s expertise is elevated at an unprecedented rate. In exponential learning, the sum is truly greater than its parts.

Oil and gas company drills deep for learning¹⁸

A US-based pipeline company operates miles of oil and gas pipelines that transport hundreds of thousands of barrels of oil equivalent per day. With so many miles of pipeline to manage, the company faced a significant challenge in detecting and resolving leaks in a timely way.

Its sophisticated monitoring system uses smart meters and satellite-enabled surveillance systems. It brings huge volumes of real-time data into its control center 24 hours a day, 7 days a week. But control center experts must shift through this data and predict how an action as simple as turning on a pump or closing a valve might affect the flow of oil hundreds of miles away.

To solve this issue, the company built a deep-learning AI system to detect potential leaks in one-fifth the previous time, while reducing the threshold at which alarms are deployed. The AI-based system augments the capabilities of the controllers by providing visibility into miles of pipeline.

Reducing false positives provides tremendous benefits for the company. It enhances the commitment to operate safely, serve customers responsively and efficiently, and be a good environmental steward.

Over time, especially as the company grows in volume, the system will self-learn and self-correct, and provide additional capabilities, such as predictive infrastructure maintenance.

Leading strategy #6 Foster a culture of inclusion

Our last strategy is the most important, because it's the gravity that grounds the other five—a culture of innovation, collaboration, and inclusion (see Figure 13). The leadership qualities that influence and encourage this culture include:

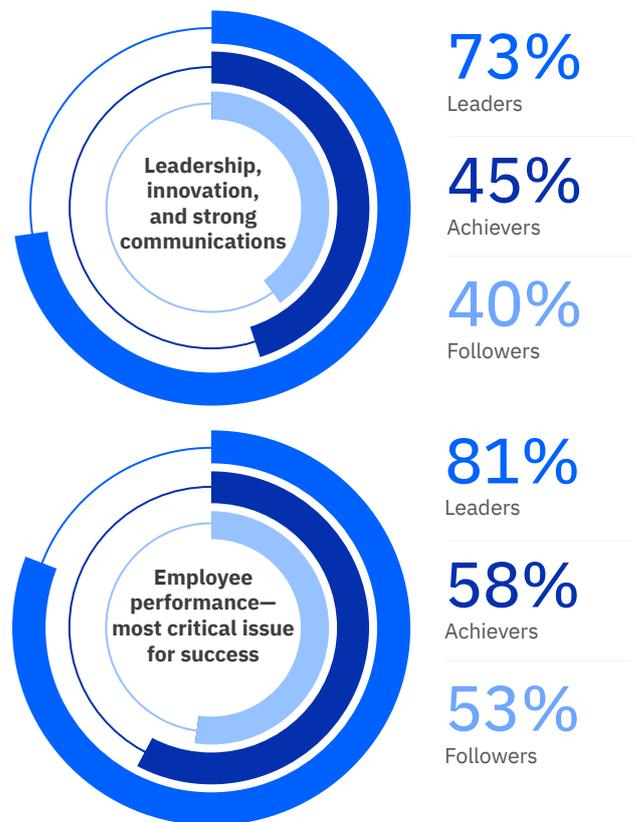
- Leading from a position of trust that inspires teams to achieve results through active communication, real-time insights, and empowerment
- Building fluid work structures with cross-functional teams that promote autonomy and exponential learning
- Redefining roles and activities as AI and machine learning shift employees toward higher-value work.

In recent years, as more industries have consolidated, Leaders have learned to take little for granted, *not even their own success*. They have become restless reinventors and eager disruptors. They're among the first to scale and speed to new markets and to ground what they do in new ways to delight customers. Leaders are among the first to move to new strategies. But they recognize that what distinguishes them from others is not strategy, per se, but the people, processes, and platforms that operationalize that strategy.

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Figure 13

Competitive differentiation = culture

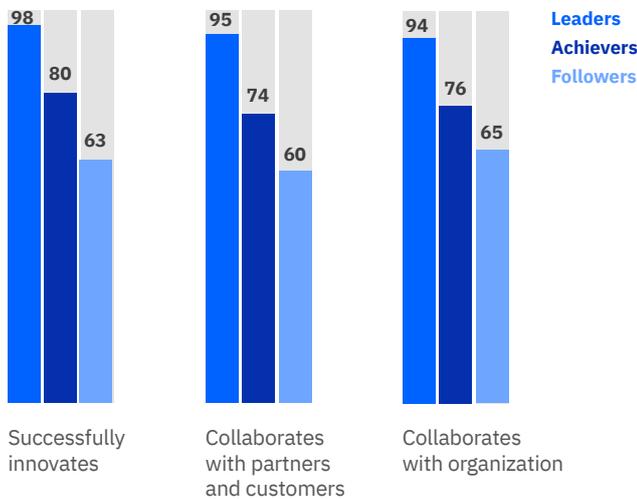


Q. What sets your organization apart from competitors in your industry? Leadership, innovation foresight, and strong communications. Q. What is the most critical people issue for your organization's success? Employee performance.

Their success hasn't bred complacency. Instead, it appears to have fueled their ambition to do more. *And they are fulfilling that ambition by inclusiveness, by making sure everyone's voice is heard.* As we've seen in leading strategy #3, Leaders connect and co-create. Eighty-six percent collaborate with customers on designing new experiences, while 83 percent engage with partners on new product design. Leaders also report they have the right network of ecosystem partners to execute their operating models. Speaking of collaboration, Leaders also report a high level of collaboration across business units (see Figure 14).

Figure 14

A workforce that innovates and collaborates = success



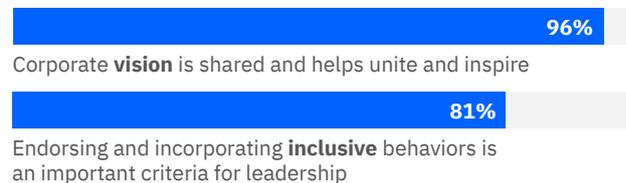
Q. What is your level of agreement about your organization? Percentage who ranked their employees 4 or 5 on a scale of 1-5.

The most critical people metrics that lead to the organizational success of Leaders are employee performance, satisfaction, and retention, as well as culture and values. Endorsing and incorporating inclusive practices and behaviors are important criteria for the leadership teams of these organizations (see Figure 15).

Ninety-three percent of Leaders measure their progress in this area, with diversity and inclusion measures clearly tracked and reported. They state that these two measures are vital contributors to financial performance. And almost 100 percent report their diversity policies are defined very broadly. For example, they could include gender, gender identity, ethnicity, age, sexual orientation, and accommodating physical and psychological needs.

Figure 15

Leadership qualities include inspiration and inclusivity



Q. Level of agreement: Our corporate vision is shared and helps unite and inspire. Rank 1-5. 4/5 responses. Q. Level of agreement: Endorsing and incorporating inclusive behaviors are important criteria for our leadership. Rank 1-5. 4/5 responses.

Most Leaders intend to be inclusive. But translating that intent into a truly inclusive outcome with employees, customers, and other stakeholders requires a focused change effort, with management commitment to measure and communicate objectives.

In a world where intelligence can be everywhere, the capacity to motivate and innovate continues to distinguish Leaders from all others. Platforms, AI, and automated technologies can educate executives and employees, enhance their skills, and help form smarter decisions. But inclusive and visionary leadership, drive, dedication, and ambition are still very human qualities.

Corporate culture “glue” connects for collaboration¹⁹

A European manufacturer of ground support equipment for the aviation industry sought to strengthen organizational culture, improve and streamline knowledge sharing, and bring employees closer together in virtually all communications. It wanted to create a culture of “we.”

With rapid growth in both employees and locations, the company needed new ways to collaborate and communicate internally. Specifically, the leadership team sought a robust communications platform that could act as the “social glue” of the organization. This platform could encourage and improve information and knowledge sharing. It could propel a shift from “push” to “pull” communications. And such a platform could also help attract the younger generation of employees.

The implemented social platform serves as the company’s internal communications channel for all employees. Now, employees across the enterprise communicate and collaborate in real time. The solution provides the company with a fast, easily accessible information-sharing system that includes manufacturing specifications, presentations, reports, and other important documents.

The leadership team can now “talk to the entire company” both about everyday factors that influence customers as well as more strategic announcements.

Recommendations

We have learned a great deal from examining the strategies, operating models, competencies and vision of our study's Leaders. They don't pick and choose. Instead, they demonstrate strong commitment and achievements across the six strategies, executing on them simultaneously to achieve leadership positions in their respective industries, high profitability, and high revenue growth. Other attributes include:

- Use of data and analytics to inform business strategies
- Optimization of business processes to support strategies
- The right people skills and resources to execute strategies
- Well-defined business strategies that employees understand
- Optimal networks of ecosystem partners to execute the operating model
- Strong change management capabilities and experience
- Business strategies that are developed, tested, and refined before being implemented.

As we reflected on our insights, several recommendations emerged. These actions could help drive your organization's progression to digital transformation.

1. Make big bets on new platform business models.

- Choose your platform carefully to help ensure it has measurable, scalable automation components. You should be able to measure business impact, gain visibility, and apply governance to end-to-end processes.
- Move from collecting data at every interaction—human, IoT, machine, integrated—to using it to generate insight. Assess and prioritize where insights deliver the most value, and to whom.
- As you determine your platform orientation, define underserved users and customer needs. Assess how to meet these with data and services, not features and functions.

2. Master a new era of branding.

- Evaluate how new platform business models and network communications influence your brand and customer loyalty. What about their effect on processes and outputs? How about their impact on your current organizational structure, mix of ecosystem partners, and new skill requirements? Consider the art of the possible.
- Look for ways intelligent automation can improve brand experience throughout the customer journey and create competitive value for your brand in the long term. Determine the right set of metrics to measure success.
- Extend the invitation for a personalized experience to your customers. Allow your brand enthusiasts to co-create the next-generation customer experience with you.

3. Reconceive the customer experience.

- Use design thinking to collaborate with customers and build capabilities across the entire product/service lifecycle. Analyze customer data and conduct detailed journey mapping to explore every customer touchpoint.
- Leverage AI to provide personalization and deliver compelling customer experiences. Use AI to position your organization for higher-value insight and services.
- Use data interpretation and prediction across the entire value chain with an eye on customer needs, wants, and information. Create agile operations with learning processes for enhanced customer responsiveness.

Because AI systems can see, talk, and hear, you can create AI-powered experiences that resemble natural human engagement.

4. Turn data into intelligent reactions.

- Use AI technologies and cognitive solutions to reveal patterns that might otherwise go undetected. AI systems understand unstructured information in a way that is similar to humans. But they not only consume vast amounts of data with far greater speed, they learn from interactions. And because AI systems can see, talk, and hear, you can create AI-powered experiences that resemble natural human engagement at specialized customer touchpoints.
- Uncover ways to apply intelligence to operational functions and activities. Power decisive and actionable real-time insights.
- Enable a new class of intelligent products and processes that can reason and learn with the support of AI. Use AI technologies and cognitive solutions to reveal patterns that people might otherwise not see or predict.

5. Reap the rewards of an exponential learning environment.

- Envision the end results. Be open to uncovering new capabilities. Iteratively evaluate automated tasks and activities for opportunities to redesign processes using intelligent automation capabilities.
- Think beyond fundamental automation to capitalize on the potential of intelligent automation. This capability isn't just about removing human activities from business processes, but rather shifting to a culture of speed, agility, and innovation.
- Make learning personal and perpetual. Embrace analytics and AI technologies to respond to individual needs. Curate highly personalized learning experiences. Create an environment in which employees can fulfil their potential.

6. Make inclusivity a formal business priority.

- Craft a diverse and inclusive work environment where top talent wants to build careers. Implement the tools and techniques to assist employees and ecosystem partners in collaborating and sharing information. Lead from a position of trust and empowerment.
- Create high-value work environments. Empower your teams to decide on the best course of action. Equip them with AI-enhanced human-to-device and device-to-human understanding. Encourage and reward collaboration and skills sharing.
- Actively solicit input from employees to develop ideas and innovate products, services, and processes. Rapidly prototype approaches to enable testing and refinement before full adoption and scaling.

Are you ready to be a Leader in digital operations?

- How will you determine your organization’s desired platform participation level—participant or owner, or both—and set expectations accordingly. What assets do you have that can be delivered as a service?
- What steps can you take to assess, identify, and prioritize the most compelling and value-packed capabilities to improve the customer experience—while your operating model delivers the brand promise?
- What is your plan to establish a data-driven culture? This includes a willingness to infuse insights into virtually every action, interaction, and decision. It requires changes related to employee skills, learning, and data management.
- In what ways do you plan to integrate intelligent automation across your existing processes to engage with customers and partners, and deliver the products and services they demand?
- How do you plan to educate, train, and prepare executives and your workforce to adopt new automation and AI capabilities, both human and machine? What is your plan for acquiring critical skills through partnering, in cases where timing of skill availability is critical?

Methodology

The IBM IBV, in collaboration with Oxford Electronics, surveyed 1,500 executives with direct knowledge of their organizations’ strategies and operational models. This group encompasses more than 20 industries, with heavier representation in automotive manufacturing, banking and financial markets, travel and transportation, telecommunications, electronics, energy, government, and retail. Half have more than 10,000 employees and nine out of ten generate at least USD 5 billion in revenues. Their corporate headquarters span 21 countries, with larger representation in the US, Germany, France, and Japan.

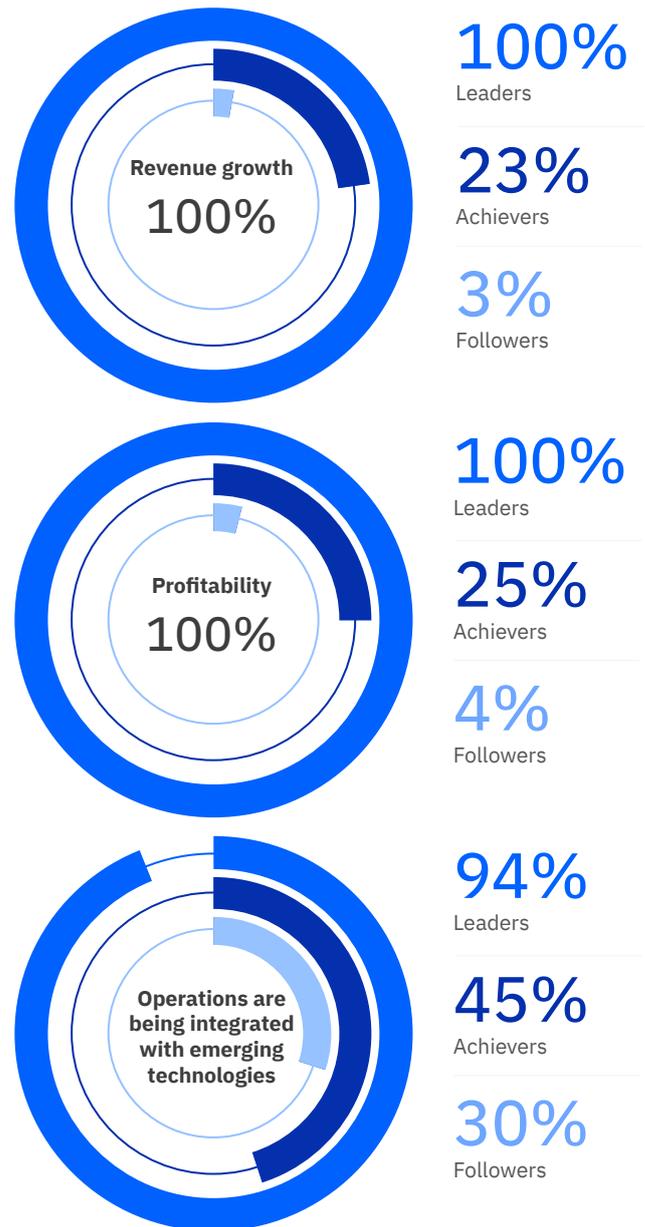
In particular, we explored areas of disruption and change in their industries, investments, and adoption of various emerging technologies, and the culture and workforce dynamics of the leadership teams and organizations.

Our intention was to discover what executives around the world are strategizing, planning, and executing to stay—or leap—ahead of competition within and, perhaps, even outside of their industries. We wanted to learn what they are investing in, what leading practices they are implementing, and what kind of culture they champion. In short, we were seeking to uncover a global group representing successful strategies and operating models across industries.

We used classification analysis to segment the population we surveyed, identifying four distinct groups. Leaders, which made up 9 percent of the population, cite revenue and profitability growth significantly higher than their competitors. They are also further along than others in their digital innovation, successfully integrating new technologies such as IoT, cloud, AI, and blockchain within their operations. Leaders consider their organizations industry leaders now and predict retaining that status over the next three years.

Selecting companies with leading operating models

The performance of the second and third group, the Achievers, who constituted 31 percent of the population, and the Followers, 51 percent of the population, fell further behind. We found that Achievers have high ambitions and are close behind in some leading strategies and operational model execution but are not as innovative and performance impactful as the Leaders. The Followers, as the name implies, are active in some leading areas, but basically are waiting to see what happens in their industries as their competitors charge forward. The last group, the Observers, 9 percent, are sitting on the sidelines.



Q. Rate your organization's revenues compared with your competitors over the past 3 years. Q. Rate the profitability of your organization compared with similar organizations over the past 3 years. Q. In your organization in 3 years, what kind of changes are occurring: Operations are being integrated through the use of new technologies (IoT, blockchain, robotics, cloud, AI).

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For more information

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Global C-Suite Study. “Imagine—Operations that think.” IBM Institute for Business Value. May 2018. ibm.biz/coostudy

Notes and sources

- 1 Hosch, William L. “Netflix.” Encyclopaedia Britannica. April 24, 2019. <https://www.britannica.com/topic/Netflix-Inc>
- 2 “Our Story.” trivago. Accessed May 17, 2019. <https://company.trivago.com/our-story/>
- 3 “Riding with Uber: Upfront pricing.” Uber. Accessed May 17, 2019. <https://www.uber.com/ride/how-uber-works/upfront-pricing/>
- 4 Sawers, Paul. “Line’s holographic Gatebox robot hints at the virtual assistants of the future.” VentureBeat. August 2, 2018. <https://venturebeat.com/2018/08/02/lines-holographic-gatebox-robot-hints-at-the-virtual-assistants-of-the-future/>
- 5 Molteni, Megan. “23 and Me’s Pharma Deals Have Been the Plan All Along.” Wired. August 3, 2018. <https://www.wired.com/story/23andme-glaxosmithkline-pharma-deal/>
- 6 “Plotting the platform payoff: The Chief Executive Officer perspective.” IBM Institute for Business Value. May 2018. <http://www.ibm.com/globalcsuitestudy/ceo>
- 7 Libert, Barry, Megan Beck, and Jerry Wind. *The Network Imperative: How to Survive and Grow in the Age of Digital Business Models*. Harvard Business Review Press. June 28, 2016.
- 8 “Albea Case Study: Delivering innovative beauty packaging to world-leading brands on time with EDI in the cloud.” IBM. Accessed May 16, 2019. https://www.ibm.com/case-studies/albea-scbn-premium?mhq=Alb%C3%A9a&mhsrc=ibmsearch_a
- 9 “Marriott and Starwood Stockholders Vote to Approve Merger.” Marriott International News Center. April 8, 2016. <https://news.marriott.com/2016/04/marriott-and-starwood-stockholders-vote-to-approve-merger/>
- 10 “Volkswagen and IBM develop digital mobility services together.” Volkswagen press release. September 5, 2017. https://www.volkswagenag.com/en/news/2017/09/VW_IBM.html
- 11 Korosec, Kirsten. “GM launches a peer-to-peer car sharing service.” techcrunch.com. July 24, 2018. <https://techcrunch.com/2018/07/24/gm-launches-a-peer-to-peer-car-sharing-service/>
- 12 “DHL partners with Volvo for remote deliveries via parked cars.” The Paypers. November 20, 2014. <https://www.thepappers.com/ecommerce/dhl-partners-volvo-for-remote-deliveries-via-parked-cars/757431-25>
- 13 Dennis, Steve, “Retail Reality: It’s Death In the Middle.” Forbes. December 4, 2017. <https://www.forbes.com/sites/stevendennis/2017/12/04/retail-reality-its-death-in-the-middle/#3ed4765b6341>
- 14 “Behr Sees 17% Lift in Purchase Consideration Across Target Demo with IBM Watson Ads.” IBM case study. Accessed June 5, 2019. <https://www.ibm.com/case-studies/behir-watson-advertising>
- 15 IBM Institute for Business Value analysis based on secondary research.
- 16 “KIST Europe.” IBM case study. Accessed May 17, 2019. <https://www.ibm.com/case-studies/KIST-Europe-Hybrid-Cloud-Industry-40-Watson-Studio>
- 17 Butner, Karen, Dave Lubowe, and Grace Ho. “The human-machine interchange: How intelligent automation is reconstructing business operations.” IBM Institute for Business Value. October 2018. ibm.biz/humanmachine
- 18 IBM Institute for Business Value analysis based on secondary research.
- 19 Ibid.

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