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Trends report series

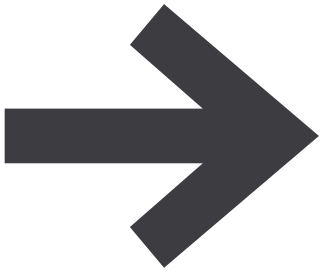
Top eight trends every CFO should know about the future of finance

Introduction

As we enter 2020, we're not only turning the page on a new year but on a new decade, a decade marked by rapid innovation and change. Today, the stereotype of the suit-wearing, number-crunching finance personnel is being replaced by a new breed of finance professionals. These finance leaders are the ligaments that connect technology across the organisation, the muscle that fights risk, the brains that drive innovation, and the heart that's embracing a new generation of workers.

To thrive in today's business environment, in a world with growing complexity, organisations are increasingly relying upon the technological and strategic prowess of their financial leaders, who must navigate a range of new challenges and responsibilities, reporting on the past, managing the present, and creating the future.

In this year's trends report, we will explore eight emerging trends that every CFO should know about the future of finance so that they can better evaluate and manage risk, build innovative corporate strategies, and grow their businesses.



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01 / Unified data, intelligence everywhere

Executive summary

Fully-connected businesses are able to provide AI tools with more complete data. This helps these systems provide more accurate outputs and deliver intelligence to every corner of the business.

Highlights

- Global spending on digital transformation efforts is projected to reach $2 trillion by 2022.
- The AI market in the US is projected to reach $118.6 billion by 2025, up from $14.7 billion in 2019.
- Spending on AI automation in the US is projected to increase from $9.7 billion in 2018 to $15.4 billion in 2021.

Unified data, intelligence everywhere

Unlike the other trends detailed in this report, which we have tried to make as independent and differentiated as possible, this first trend is more of a macro-level trend. It's a trend that, in some capacity, is either an influence or a force-multiplier of each of the subsequent trends. It is a trend that is as much about its individual elements as it is about the sum of its parts: the Internet of Things (IoT) and artificial intelligence.

Meet the new, fully connected business

For the last decade—and accelerated further in the last several years with the growing ubiquity of cloud computing—we have seen a push towards a more connected business. This transformation has been neither linear, nor has it been one dimensional; for many, it has been complex and evolved in key stages.

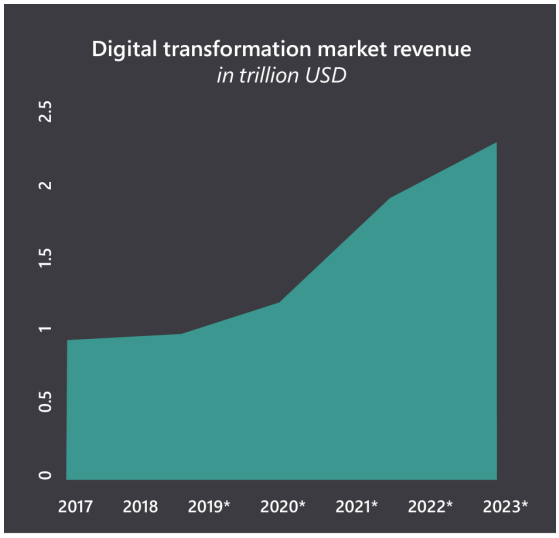
First, companies digitized. Through computers, mobile devices, and sensors that enabled digital tracking of mechanical devices, this digitization process made it possible to capture data from any device. Next, they aggregated this data. For most, this data aggregation process happened in stages, in one team or department at a time. This approach left businesses with aggregated but siloed data. To connect these data silos, companies hacked together systems and APIs to help transfer data between siloed business units, often resulting in duplicate data sets, slow speeds, and increased security risks. To a degree, this system of interconnected data silos has been standard operating procedure for a while now, but as cloud technology matures, this model is starting to change.

Through advancements in cloud processing, data lakes, and software—as well as better business processes and governance—businesses are finally starting to tear down data silos and realize the potential of a fully connected business, one where all of an organization's data is aggregated into a central database, which both receives and sends data across the organization, in real-time, wherever it is needed.

For businesses, this presents a huge leap forward, and the implications and opportunities for unified, real-time data from across the organization are substantial. It means that business leaders can have access to live data to help make more strategic decisions with the latest information. It means that businesses can push updates to workers in the field, ensuring that they have the most recent information. It means that companies can track a customer's relationship with their brand through every touch point across their entire lifespan. And it means that financial reporting is both faster and more accurate.

"The implications and opportunities for unified, real-time data from across the organisation are substantial."

These changes are not merely an update to existing tools, they represent the next phase in a company's digital transformation journey, and business leaders are making the investment. According to a recent study by eMarketer, about eight in ten US companies are currently investing in digital transformation to improve performance, meet customer demands, and remain competitive.[1] Globally, spending on digital transformation efforts is projected to reach $2 trillion by 2022[2], providing organizations with the infrastructure and software they need to innovate and grow.



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Business leaders gain visibility into performance and operations

One of the most significant gains from a connected business is the ability to leverage unified data from across the organization. Unified data provides business leaders with better visibility into both performance and operations. With a more complete picture, they are able to make faster, smarter decisions.

It also provides business leaders with a better opportunity to identify correlations from different parts of the business that would not otherwise be visible. This visibility can help companies improve forecasting and identify market trends faster, so they can shift strategies and capitalize on evolving consumer interests.

Furthermore, increased visibility into business operations and performance helps business leaders mitigate risk, either through early recognition of operational issues that need to be addressed or from identifying outlying data that may suggest an abnormality—such as an impropriety on the part of an employee or a data breach from an external threat.

"AI's output is only as good as it's input."

Unified data unlocks advanced analytics and artificial intelligence

Artificial intelligence (AI) has received a lot of air time these last few years, as improvements in computer processing and algorithms have introduced even more powerful solutions. And adoption is on the rise. The AI market in the US is expected to reach $14.69 billion in 2019—a 154% increase from last year—and is projected to reach $118.6 billion by 2025.[3]

However, for as great as modern AI solutions are, there remains one major limitation impeding their effectiveness: data quality. AI's output is only as good as it's input, and in years past, this has been a significant challenge. At best, AI analysis conducted using incomplete data sets can result in suboptimal outputs; at worst, it can steer companies in the wrong direction.

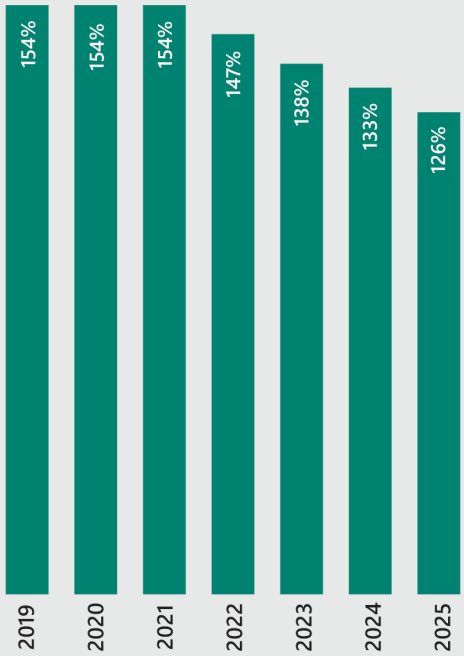
As connected businesses unify data from across the organization—providing a more comprehensive data set—it is unlocking the true potential of AI. This broader data set not only enables better data for primary analysis, but it also allows AI tools to discover connections and correlations in discrete parts of the business where no one would think to look, and these insights may help improve operations and performance. Unified data removes silos, which in turn enables intelligent tools to be leveraged across all business units, elevating every part of the business through applied intelligence.

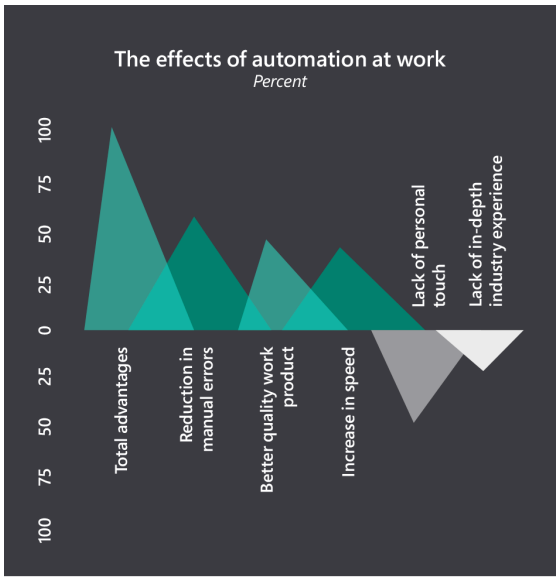
Connected businesses empower automation

As business systems and machines push data into a unified database to be processed and analyzed using AI tools, this same interconnection also allows for information to be pushed back throughout the system. While we may not think of applied AI in these terms—sending data to a central database, analyzing that data, then pushing some response back to the source—this is often (in very simplified terms) h ow these tools work. This includes AI interfaces that humans interact with, such as virtual assistants, robo-investors, and smart speakers.

"Unified data removes silos, which in turn enables intelligent tools to be leveraged across all business units, elevating every part of the business through applied intelligence."

Forecasted growth of the artificial intelligence (AI) software market worldwide from 2019 to 2025





This cycle enables intelligent automation: the ability to collect input data from a system, use artificial intelligence to automatically generate an output command, then push that command outwards to control the system. Put simply, the "muscles" that feed the data to the brain can then be controlled by output from the brain. And as this input-output cycle continues, it creates a feedback loop where the algorithms generating the output commands are able to learn from new results and improve their performance.

The impacts of automation at work are substantial. In a recent survey, nearly all business leaders (99%) felt that there are advantages to automation. Fifty-two percent of business leaders think that it leads to a reduction in manual errors, 45% believe it leads to better quality projects, and 43% feel it improves speed.[4]

This is not to suggest that automation does not come without risks. In the same survey, 47% of business leaders cited a "lack of personal touch" as a risk of automation, while 23% fear it will lead to a lack of in-depth industry experience. Despite these risks, businesses continue to invest in AI automation. Spending on AI automation in the US is projected to increase from $9.7 billion in 2018 to $15.4 billion in 2021, nearly a 60% increase.[5] It is clear that as businesses become more connected and more intelligent, more systems and processes will become automated. - -

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Connect and modernize

To stay competitive and innovate, finance leaders need to connect their operations and leverage the latest intelligent tools. At Microsoft, we are empowering finance leaders with the infrastructure, power, scale, and intelligence to help them modernize and transform their businesses.

Unify business data

Finance leaders need real-time visibility into operations and performance to make informed decisions. From cloud-based data solutions on Azure to intelligent analytics tools in Dynamics 365, we're helping finance leaders turn data into actionable insights so they can optimize operations and make more strategic business decisions.

Get greater visibility

To effectively guide their organizations, finance leaders require visibility into all areas of their businesses. By combining unified data in the cloud with powerful data visualization tools, like Power BI, Microsoft provides finance leaders with a single source of visibility into their operations—from technology to financial data—so they can make more informed decisions.

Automate workflows

As the pace of modern business accelerates, finance leaders are looking to streamline processes and get more done. With Azure, Dynamics 365, and Office 365, we're providing finance leaders with tools to automate workflows and simplify communication so they can improve efficiency, performance, and productivity.

02 / The CFO's role and workforce evolve

Executive summary

As finance leaders take on greater responsibility—from technology to strategy—the modern finance department is evolving.

Highlights

- Across the board, CFOs are taking greater responsibility for strategy and planning, IT, and enterprise risk management.
- Global IT spending is projected to reach $3.7 trillion in 2019.
- 55% of CFOs report that enterprise risk management is part of their role, and 33% of CFOs claim responsibility for managing cybersecurity risks.

The CFO's role and workforce evolve

The CFO's role can be summed up in two simple truths: 1) if something impacts the bottom line, it's the CFO's responsibility, and 2) everything impacts the bottom line.

As business becomes more complex, CFOs are taking on more responsibility to help secure and grow their organizations. This includes taking on greater responsibility for the strategic direction of the organization, managing technology investment, countering emerging risks—from cyberattacks to geopolitical uncertainty—and driving business transformation and innovation. And to complicate matters further, they must manage their growing responsibilities with a workforce that is rapidly changing.

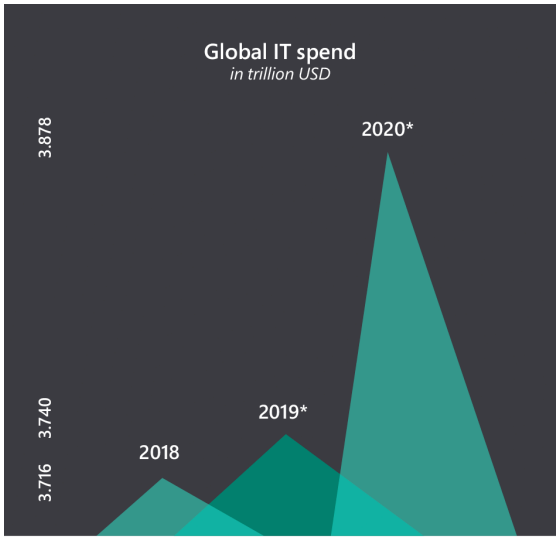
From staffing and employee engagement to product development and mergers and acquisitions, modern businesses increasingly rely on the financial and strategic prowess of their most senior financial leaders, whose growing influence can be felt throughout the organization.

"The role of the CFO can be summed up in two simple truths: 1) if something impacts the bottom line, it's the CFO's responsibility, and 2) everything impacts the bottom line."

Finance leaders become strategy leaders

Advances in technology have transformed how the modern finance department operates not once, but twice: first, with the leap from paper-based ledgers to computer-based accounting, and second, with the introduction of analytics and business process automation. As a result, today's finance teams spend less of their time in the weeds and more time looking at the big picture.

A recent survey by Deloitte found that across the board, CFOs are taking greater responsibility for strategy and planning, IT, and enterprise risk management.[6] CFOs increasingly find themselves serving as strategic advisors, delivering data-driven insights and analysis that help power decision-making across the organization.



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Finance leaders influence tech spending and management

Over the past decade, one of the most visible additions to the CFO's responsibilities has been the management of technology across the business. This should come as no surprise, given the growth of technology in all aspects of the corporate world. Global IT spending is projected to reach $3.7 trillion in 2019, a 0.6% increase from 2018, with IT spending in North America increasing by 3.7% despite geopolitical and economic uncertainty.[7]

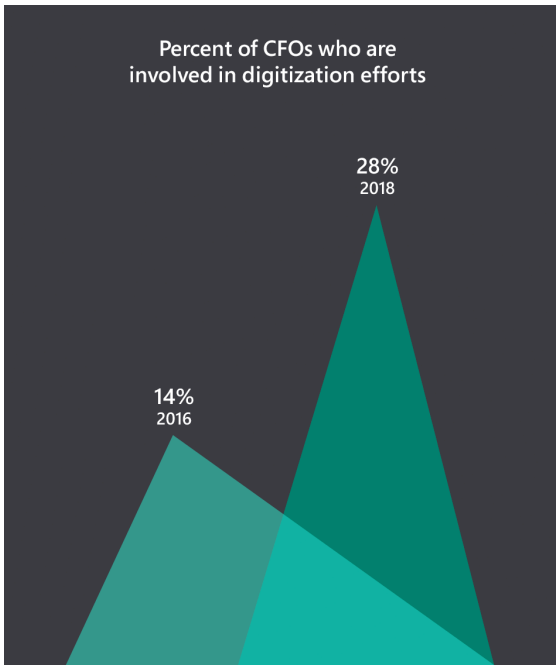
Where technology spending was once primarily consolidated in the IT department, today's technology budgets are generally distributed across the entire organization. Roughly half of all technology investments in 2018 were made by individual business units, and IDC estimates that between 2016 and 2021, line of business technology spending will grow at a compound annual growth rate (CAGR) of 6.9%. Compare that figure to spending driven by IT departments, which is forecasted to increase by a CAGR of only 3.3%.[8]

Due to the financial demands that technology has created, both as a significant expense and as a capital asset, it is more important than ever for CFOs to have a comprehensive view of these large financial line items. But technology is now more than just a number on a balance sheet, it's the lifeblood of many organizations, presenting new risks and revenue opportunities that will determine the future of the business. As technology becomes a critical component in the financial success of an organization, finance leaders will continue taking a more significant role in managing technology, particularly in the areas of risk management and technology investment.

Finance takes on technology risk management

You don't need to look hard to find examples of companies that have been impacted by technology failures or data breaches. Beyond the many unquantifiable costs to a data breach—from customer trust to employee morale—the direct financial costs of a technology failure are significant. In 2019, the average cost of a data breach was $3.9 million; and with an average cost of $150 per lost or stolen record, this number escalates quickly for large businesses.[9]

Across the board, finance leaders are taking on greater responsibility in helping their businesses better manage this sizable financial risk; 55% of CFOs report that enterprise risk management is part of their role, and 33% of CFOs claim responsibility for managing cybersecurity risks.[10]



CFOs lead business transformation

Today's industry leaders are leveraging technology in exciting new ways to transform their business models. As their involvement in corporate strategy and risk management grows deeper, CFOs find themselves stepping into the role of transformation leader, evaluating technology investments, overseeing product development, and leading strategic planning for the organization.[11]

In McKinsey's 2018 survey of CFOs, 44% of respondents reported that they were responsible for driving enterprise transformation. Likewise, between 2016 and 2018, the number of CFOs indicating that they were involved in digitization efforts—moving operations to the cloud, introducing automation, leading the adoption of analytics and data visualization—rose from 14% to 28%.[12]

Finance leaders adapt to an evolving workforce

Managing a multigenerational workforce

With life expectancies on the rise, older Americans are delaying retirement and working longer than was the norm in previous generations. There are now five distinct generations of people in the workforce—the silent generation, baby boomers, Generation X, millennials, and Generation Z—each with their own perspectives, priorities, experiences, and ways of communicating. As a result, today's leaders may find themselves in the precarious position of managing teams that include employees who are both older and younger than themselves. While this would initially seem to pose serious challenges, leaders who embrace their teams' diversity of perspectives and experience can generate powerful benefits for everyone involved. The trick is leveraging each employee's strengths for the benefit of his or her teammates.

For example, boomer and silent generation workers can help Gen Z develop the soft skills needed to ensure smooth interactions in a business environment.[13] And with decades of experience under their belts, older employees can model calm under pressure, share institutional knowledge, and offer problem-solving approaches to their younger counterparts.[14] Companies should also consider instituting reverse mentoring programs, where younger employees share best practices and insights about technology with older employees. Beyond the obvious goal of raising levels of tech literacy across the organization, reverse mentoring can be a powerful tool for increasing employee satisfaction and retention, as well as yielding benefits in the areas of diversity and inclusion.[15]

Above all, managers should understand that there's no one-size-fits-all management style that will fit every team (or every team member). Managers must be flexible, not make assumptions based on generational stereotypes, and be sensitive to the different work and communication styles of their direct reports.[16]

Defining generations

Silent generation (born before 1945)
Currently comprising 2% of the workforce, the silent generation came of age in a hierarchical workforce. They are hardworking and loyal but view work as a means to a paycheck, not an identity.

Baby boomers (born 1946-1964)
As a generation, boomers are driven, focused on personal achievement and earnings, and **prone to workaholism.**

Generation X (born 1965-1980)
Deemed by some the "slacker" generation, Gen X is skeptical of authority and prioritizes work-life balance. Despite coming of age in an analog world, by many measures, members of this generation are as digitally savvy as their younger counterparts.

Millennials (born 1981-1996)
Forecasted to comprise 50% of the workforce by 2020, millennials are highly educated, collaborative, and entrepreneurial.

Generation Z (born after 1996)
More likely than other generations to feel they can make a meaningful difference in the world through their career, Gen Z believes that work environments should deliver a sense of purpose, identity, and fun.

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Top concern for finance leaders

Lack of relevant skills on team

Percent of finance leaders who lack confidence in their teams' strategic thinking and negotiation abilities

Skill gaps create staffing challenges

Technology is rapidly transforming the way finance departments work, and many new graduates and mid-career professionals are struggling to adapt to the new expectations that have been thrust upon them as a result. Their biggest challenge? Developing the tech chops and soft skills needed to excel in this new environment. Workday's survey of 670 CFOs revealed that a lack of relevant skills was the number-one concern cited by finance leaders, while two-thirds of respondents were not confident in their teams' strategic thinking and negotiation abilities, skills that are becoming more and more important for finance professionals.[17] In a survey of 1,100 CFOs, 32% of respondents cited experience with or aptitude for technology as the hardest attribute to find in accounting and finance job candidates.[18] In the coming decade, finance professionals will need to marry tech-savvy with traditional finance skills to stay competitive in the job market.[19] Asked to look ahead, CFOs predicted that future finance departments would increasingly hire candidates who have a background in data science, statistics, data security, agile development, cloud computing, robotic process automation, and behavioral science.[20]

New business models change employee-employer relationships

Facing increasing competition and diminishing profits, many companies are pivoting from strictly selling physical products to becoming solutions-oriented businesses.[21] By doing so, the value that the company provides to its customers is no longer limited to products alone but expands to include an ecosystem of services, like equipment leases, installation, predictive maintenance, automatic software and firmware updates, and lifecycle management.

As always, change begets change, and a new business model requires a new type of workforce. For many companies, successfully transitioning from a product company to service provider—particularly in industries like manufacturing and IT—means some combination of recruiting skilled field technicians, adding remote workers, and opening regional offices close to where customers operate.

Work arrangements evolve

In seasonal industries, companies have long embraced temporary employment arrangements—consider agriculture, landscaping and snow removal, summer camps, and public pools. Likewise, retailers, shipping and delivery companies, warehouses, restaurants, and hotels typically hire seasonal help to accommodate increases in demand during the winter holidays. But with the rapid growth of gig economy behemoths like Uber, and the fact that 21.4 million Americans now report having non-traditional work arrangements[22]—a definition which includes contingent workers, independent contractors, on-call workers, temporary help agency workers, and workers provided by contractor firms—many now wonder whether this is the future of employment,

The short answer is: probably not. Regulations passed last year in California require platform-based services like Uber to treat their drivers as employees, not consumers. And while the gig economy may have transformed how certain industries—such as transportation—function, it seems that the benefits of having an on-call workforce don't easily translate to all other jobs. This is in part because many other professions require specialized knowledge, training, and the sort of collaboration that can only occur when people work together over a long period of time—things that are hard to guarantee if your workforce consists of a pool of on-call freelancers.[23] It's also difficult for gig economy startups to remain profitable, even with an infusion of venture capital. In the wake of Uber's success, a slew of on-demand startups hit the scene, but in a crowded marketplace, relatively few of those hopeful contenders experienced the success of Uber.[24] That said, while the total number of contingent workers—those who don't have an "implicit or explicit contract for ongoing work"—is lower than it was in 2005, it's clear that non-traditional work arrangements remain a strong trend in the US job market.[25] - -

American workers reporting non-traditional work arrangements

21.4 million

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Get more done

CFOs and finance professionals are moving from number crunchers to strategic leaders. To make this transition, finance teams must work faster and smarter. At Microsoft, we are empowering finance professionals to do more with tools that streamline processes, provide greater visibility into operations, and deliver actionable insights.

Put strategy first

Transitioning to strategic work requires that finance professionals spend less time on routine accounting tasks. From productivity tools, like Office 365, to workflow automation capabilities in Dynamics 365, Microsoft is helping finance teams get more done, freeing them up so they can spend more time on high-value strategic work.

Gain greater visibility

To effectively guide their organizations, finance leaders require visibility into all areas of their business. By combining unified data in the cloud with powerful data visualization tools, like Power BI, Microsoft provides finance leaders with a single source of visibility into their organization—from a high level down to a transactional level—so they can make more informed decisions.

Empower employees

Employees are a business's most valuable asset; today's finance leaders must empower their employees to do more. From tools such as Office 365 that help teams get more done to role-based workspaces in Dynamics 365 that deliver the right information, Microsoft is helping finance leaders empower their employees to deliver better experiences for their customers.

03 / Customer experience becomes a top priority

Executive summary

As customer expectations rise, finance leaders are turning to technology to help their businesses deliver the personal experiences that help build lasting customer relationships.

Highlights

- The global market for mobile payment systems is projected to grow to $3 trillion by 2024.
- 69% of Gen Z reported that they're more likely to transact with companies that contribute to social causes.
- 93 million people are projected to participate in the on-demand economy by 2022.

Customer experience becomes a top priority

Customer experience has long been at the foreground of successful businesses; however, over the last decade, this hyper-focus on customer experience has started to take a new shape. With more options and information at their fingertips than ever before, today's consumers expect a high degree of control, value, and convenience when interacting with businesses.

In response, the last decade has been marked by businesses increasing transparency, streamlining operations, and reducing operational costs. But what got lost in much of this efficiency and capacity building was the experience. Emerging technologies offered new capabilities, but many failed to produce results because they didn't make experiences easier or better for the customer. This year, finance leaders have renewed their focus on experience—investing in new ways to make customer interactions easier, more personal, and more flexible—at a time when it is needed more than ever.

A-commerce (anywhere) becomes the new reality

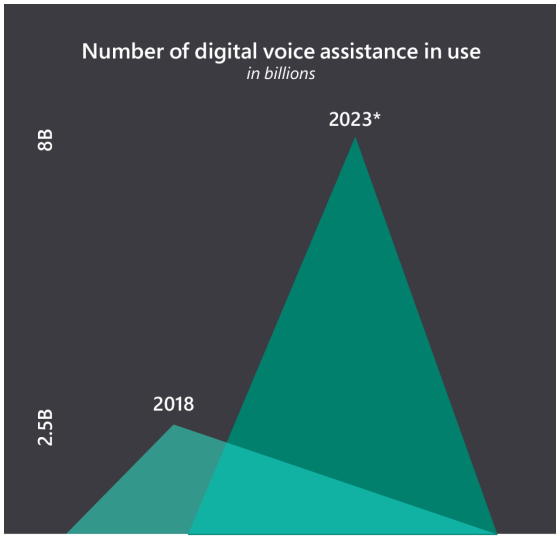
Thanks to technology, not only do today's consumers have access to a dizzying array of goods and services, they have the ability to dictate where, when, and how they make their purchases. From social buying on Instagram to voice-commerce through Alexa, businesses are no longer forcing customers to their websites to make a purchase; instead, they are turning every platform into a purchase platform.

Voice-first conversational commerce makes some noise

Voice technology is on the rise as consumers become more comfortable with digital assistants, robots, and AI. By 2023, it's estimated that there will be eight billion voice assistants. This is more than a threefold increase from the 2.5 billion voice assistants in use in 2018.[30] The majority of these voice assistants are expected to be on smartphones[31], but other platforms are quickly growing. Voice assistants now exist on household devices like the Harman Kardon Invoke, Apple HomePod, Amazon Echo, and Google Home, and by 2022, the smart speaker market is projected to reach revenues of $17 billion.[32]

While the shopping capabilities of voice-enabled assistants are still nascent, as they evolve, they will offer a powerful new platform through which businesses can reach customers directly. By 2023, voice-first commerce will account for $80 billion in sales worldwide—although the majority of those sales will be digital purchases and money transfers, not sales of physical goods.[33] Some companies are hoping to change that. Walmart has partnered with Google to offer customers the ability to add groceries to their Walmart Grocery cart using Google's voice assistant. This allows customers to request groceries on any device with Google Voice capabilities, including Android phones, iPhones, and Google Assistant. Representatives for Walmart have also mentioned that they are looking into expanding this service to other voice assistants as well.[34]

With dramatic growth expected in voice technology, it's no surprise that Facebook, Amazon, Microsoft, Apple, and Google are all working to enhance their voice offerings and increase their market share. These companies are investing in advancing their Natural Language Processing (NLP) capabilities, including new foreign languages, and adding a host of other innovative capabilities. For example, in an effort to help address privacy and security needs, Microsoft has patented technology that allows users to whisper commands.[35] As users increasingly rely on their voice assistants, the trend toward voice interactions will continue alongside the development of other artificially intelligent systems—based on gestures, biometrics, and more—that will make these types of interactions easier and more natural for users of all abilities.



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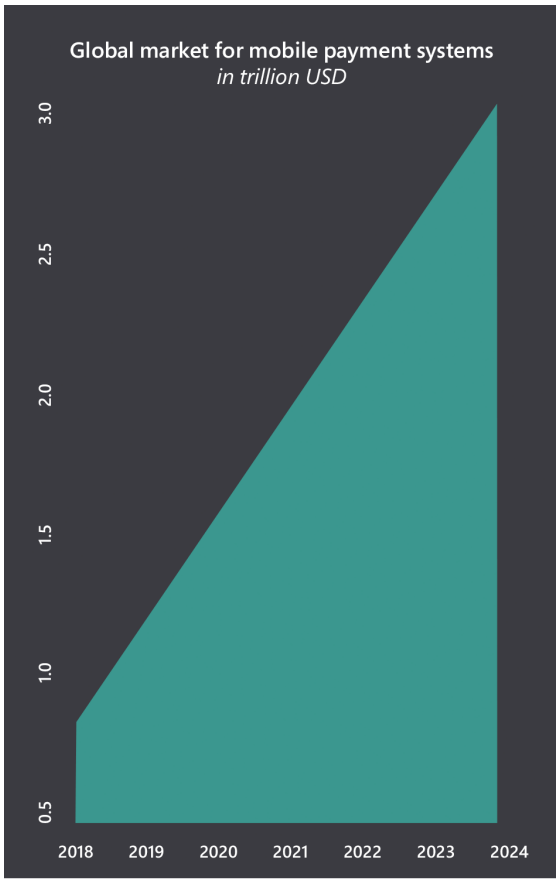
New payment systems give consumers greater flexibility

A cluster of new technologies—mobile point of sale (mPOS) p ayment processing, Near-Field Communications (NFC) , mobile wallets, and peer-to-peer (P2P) payments—are making it faster and easier for consumers and businesses to exchange funds.



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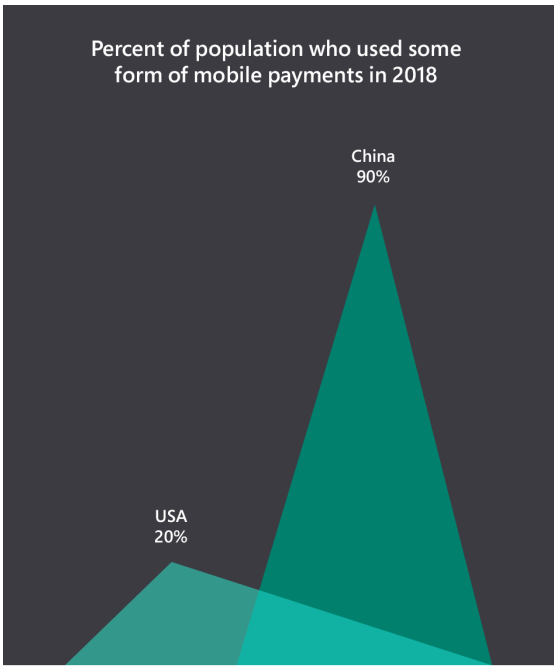
Since Apple Pay was introduced in October 2014, the market for mobile wallets has exploded. Today, dozens of companies offer their own mobile payment options, including PayPal, Intuit GoPayment, Samsung Pay, Google Pay, Barclaycard bPay, LoopPay, Chase Pay, Visa Checkout, Walmart Pay, CVS Pay, Target Wallet, Starbucks, Kohl's Pay, Square Cash, Stripe, Venmo, LevelUp, PayAnywhere, and Zelle. An increasing number of businesses are leveraging mobile wallets in creative new ways, using the technology for things like paperless tickets, loyalty cards, in-store pickup of online orders, gym memberships, coupons, and more.[36]



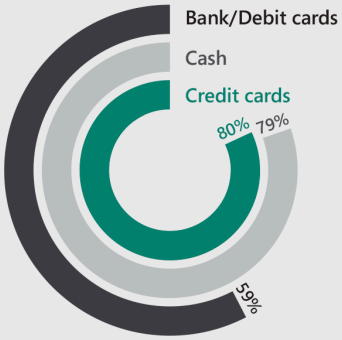
As adoption increases around the world, it seems clear that mobile wallets are the way of the future. The global market for mobile payment systems was $881 billion in 2018 and will grow to an estimated $3 trillion by 2024.[37] However, despite the proliferation of companies offering contactless payment options—and the fact that 81% of Americans own a smartphone[38]—mobile payments have yet to have the same impact in the US that they have had elsewhere in the world. Fifty-five million Americans, or 20.2% of the population, used some form of mobile payment in 2018.[39] Contrast that with China, where 90% of consumers reported that AliPay or WeChat was their preferred method of payment.[40]

There are a handful of reasons why other countries are leapfrogging the US when it comes to the adoption of mobile payments. In part, it's because in countries like China and India, mobile payment offers consumers a convenient alternative to paying in cash, whereas in the US, consumers already have a convenient, widely accepted means for making digital payments: credit and debit cards. A recent survey by Bain found that the forms of payment most commonly used by Americans were credit cards (80%), cash (79%), and debit or bank cards (59%).[41]

The other piece of the equation is adoption by merchants. Businesses must weigh the potential benefits of embracing these new payment methods against the expense of purchasing POS devices for contactless payments, as well as the fees involved in accepting digital wallets for online transactions. While a majority of US merchants report that they currently accept or have plans to accept payment using Apple Pay, Masterpass, Visa Checkout, PayPal, Google Pay, or Chase Pay, many businesses are still taking a "wait and see" approach to mobile payments.[42]

A new service offered by the US government may change that dynamic. In April 2019, the Federal Reserve announced that starting in 2024, the FedNow Service will make money transfers available anytime and in real-time. Having real-time access to customers' bank accounts—including the ability to receive payments immediately—will likely give businesses that are still on the fence the incentive they need to embrace digital wallets. The new service will probably also result in more companies creating the types of financial products that were previously only available through banks.

The growing consumer interest in these technologies—NFC, cryptocurrency, P2P, and mobile wallets—coincides with regulation changes in the US and abroad that will eventually make near-instantaneous payment processing the norm rather than the exception. Since faster account reconciliation holds clear benefits for both consumers and businesses, it's likely that companies and consumers alike will adopt these technologies at a faster rate in the next few years.



Most commonly used payment forms by Americans

Innovation raises customer expectations and gives businesses the tools to deliver

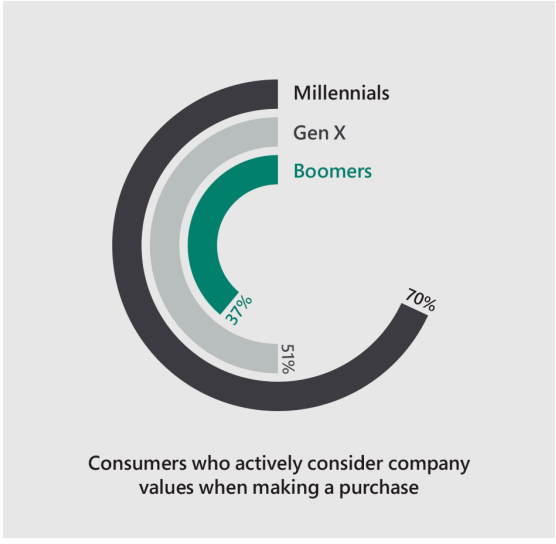
Innovation—from the printing press and combustion engine to computers and wireless internet —has always been a driver of demand, unlocking new possibilities and raising expectations. Today, we find ourselves at the intersection of rapid innovation and a new generation of consumers who have grown up empowered by technology. Thankfully, recent developments in chatbots, data analytics, and machine learning are giving businesses greater insight into the customer journey and making it possible to deliver better service without a corresponding increase in time or labor.[43]

Millennials and Gen Z redefine brand expectations

It's official—at 73 million members strong, millennials now outnumber baby boomers in the United States.[44] Born between 1981 and 1996, millennials are now approaching their thirties and forties, and with that, they're also approaching their peak earning potential. Despite their influence, millennials aren't actually America's largest living population group; that distinction belongs to Generation Z, a cohort of more than 90 million people born after 1997[45], the oldest of whom recently entered the workforce.

So, how are these two influential generations shaping the market for goods and services? The answer is that it's all about values, authenticity, and engagement.

According to Forrester Research, nearly 70% of millennials weigh a company's values when making a purchase.[46] As a group, Gen Z places high worth on inclusion and equality, reflecting the broader national conversation around ethics and social responsibility.[47] According to a study by Ad Age, 69% of Gen Z reported that they're more likely to transact with companies that contribute to social causes, while 33% of respondents said they have stopped making purchases from companies that back causes they don't support.[48] Signs show that this ethos is steadily influencing other generations as well. A majority of Gen X consumers (51%) and a growing number of baby boomers (41% of younger boomers and a third of older boomers) indicated that company values influence their purchasing decisions.[49]



Consumers who actively consider company values when making a purchase

Despite the importance that they place on corporate ethics, cost is still a major deciding factor for both millennials and Gen Z, albeit for different reasons. Both generations' purchasing habits were influenced by the Great Recession, which hit during their childhood or early adult years. Millennials, who were adolescents or young adults during the recession, are far more likely to prize affordability, quality, and reliability over ethics and transparency.[50] Members of Gen Z, who were children when the recession hit, strongly believe that companies have a responsibility to serve communities and society.[51] Their price sensitivity is largely rooted in a desire for novelty when it comes to the clothes they wear, which is unsurprising given that they're the world's most photographed generation to date.[52]

As the first generation of true digital natives, Gen Z also has little tolerance for what they view as "marketing fakery." Members of this generation strongly prefer brands and influencers that they see as authentic, trustworthy, and approachable.[53] According to a study by Ad Age, Gen Z looks to real people—as opposed to brands—for

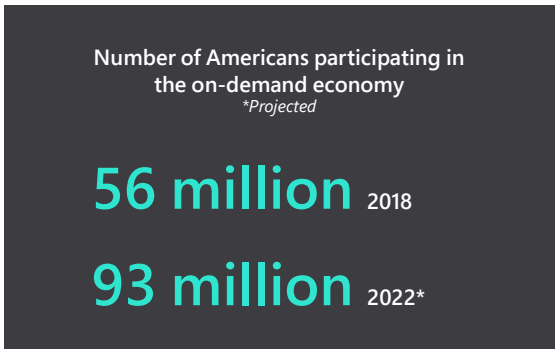
information and style inspiration. Along those lines, members of Gen Z are wary of brands' attempts to sell to them, making them far more likely to trust companies that don't Photoshop their images and feature actual customers in their campaigns.[54]

Last, both groups expect more than a superficial connection to the brands they buy. Increasingly, Millennials expect companies to engage with them in meaningful—and often immersive—ways.[55] Similarly, Gen Z sees itself as co-creators who can shape the conversation around brands.

Personalization and convenience become competitive differentiators

There has been a quiet but seismic shift in consumer spending in the years since the Great Recession, particularly among members of younger generations. Whereas during the post-World War II economic expansion, buying a home, a car, and the other accoutrements of adult life was a symbol of both success and patriotism, millennials are buying homes—and spending on everything[56]—at lower rates than their predecessors.[57] The reasons are complex and include factors like higher levels of debt and less earning power[58], a trend towards delaying marriage and having kids[59], lower levels of transportation spending across all generations[60], issues in the broader real estate market, and a predilection for living in urban areas[61] where housing is expensive and it's easier to access other methods of transportation. That said, part of this shift in millennial consumption reflects a growing preference for spending on experiences, not possessions[62] [63], and mounting concerns about the sustainability of contemporary consumption habits.[64] In search of a competitive advantage, companies from all kinds of industries are using technology to adapt their business models to the needs of this cash-strapped segment.

The key to surviving the new landscape is moving customers from transactional loyalty to emotional loyalty.[65] It's the difference between trying to generate repeat sales by offering customers perks



like coupons or punch cards and cultivating brand devotees who will buy whatever a company provides, who deliberately seek the brand out, and who sing the company's praises to everyone they know. To that end, both startups and established businesses are experimenting with personalized, affordable, sustainable, and convenient offerings aimed at a new breed of American consumers.

On-demand services

With an estimated 56 million Americans participating in the on-demand economy in 2018, a number that is projected to grow to 93 million by 2022[66], on-demand services represent perhaps the largest category of these new offerings. Popularized by Uber, on-demand businesses are launching for just about every category imaginable, allowing consumers to book and pay for everything from housecleaning and dog walkers to babysitters and massages with the click of a button.

Sharing economy

The sharing economy—where consumers "share" products and services directly instead of purchasing via a retailer or distributor—is another business model that has grown in popularity over the last several years. Perhaps the most commonly known example of a sharing economy business is Airbnb, where travelers can rent rooms and homes directly from other individuals. Clothing rental—as distinguished from consignment services like thredUP or subscription services like Trunk Club—is a growing trend in this segment and includes new entrants like Express Trial Service and Urban Outfitters' Nuuly[67], as well as more established players such as Rent the Runway.

Subscription box services

Subscription box services have become incredibly popular due to their highly targeted nature and ease of use. Companies like Birchbox, HelloFresh, Stitch Fix, and NatureBox are just the tip of the iceberg when it comes to the subscription box market, which now provides services for dog owners, coffee lovers, mountain climbers, gold miners, sock enthusiasts, plus an entire category of offerings targeted at kids.

Online consignment

When eBay and Craigslist launched in the mid-1990s, they provided individuals with the opportunity to use the internet to sell used goods. Nearly two decades later, a new set of online consignment stores has emerged to help streamline this process. Sites like thredUP, Swap, and TheRealReal allow shoppers to sell and purchase used clothes, jewelry, toys, and luxury fashion accessories online. Capitalizing on the fact that peer-to-peer selling is en vogue, eBay launched a 2019 ad campaign that urged consumers, "When you're over overpaying, get it on eBay."[68]

Revamped loyalty programs

Companies are also investigating new ways to make their loyalty programs more enticing to customers. Some are employing AI to make their loyalty programs more engaging, featuring exclusive experiences, tailored content, and games. Others are even experimenting with ditching traditional rewards altogether in favor of offering customers stock options using companies like bumped.com.[69] - -

04 / Intelligent technology powers finance operations

Executive summary

As finance leaders work harder to meet rising demands, they are turning to technologies—such as AI, blockchain, and digital assistants—to help improve operations and work smarter.

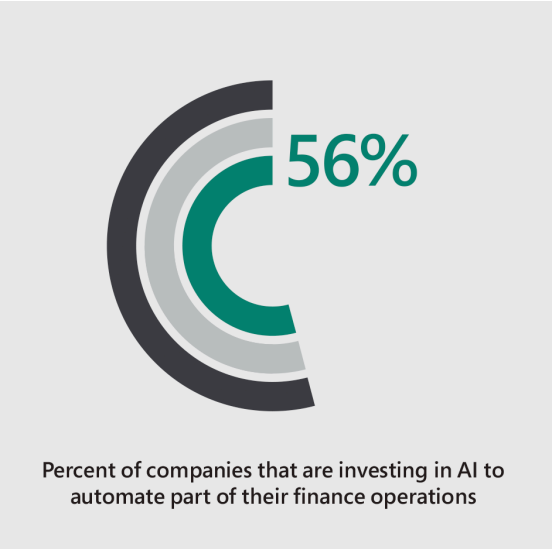
Highlights

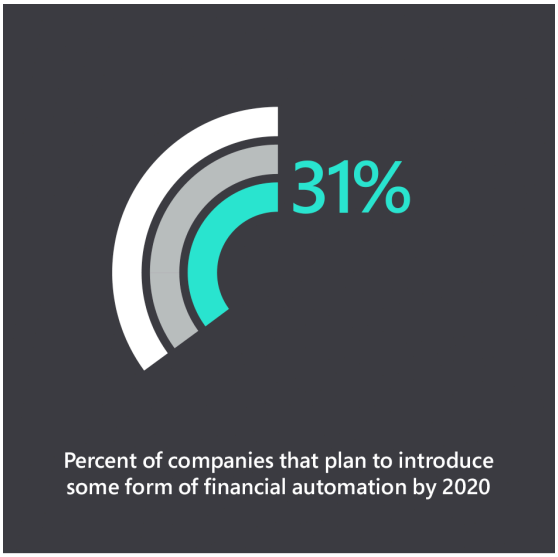
- By 2020, 31% of companies plan to introduce some form of financial automation, with another 26% anticipating that their automation efforts will be in full swing.
- 61% of finance operations can be fully or partly automated using currently available technologies.
- 83% of business executives see compelling reasons to use blockchain.

Technology powers finance operations

Finance professionals have long been technology pioneers, a fact for which they rarely receive credit. They are responsible for the expansion of the telegraph in the US—which was driven by exchange traders who needed a way to share market information faster. They have also spawned the invention and expansion of everything from credit cards and ATMs to direct trading, Chip and PIN systems, contactless payment systems, cryptocurrencies, and more.

Finance has long operated on the cusp of technology, and from digital spreadsheets to accounting software, finance professionals have pioneered digital technology in the workplace for decades. Today, this trend continues as finance professionals are driving the adoption of new analytics tools and techniques to help improve operations, better forecast business performance, and help their organizations strategically plan for the future.[70]





Technology streamlines operations

Automation transforms the finance department

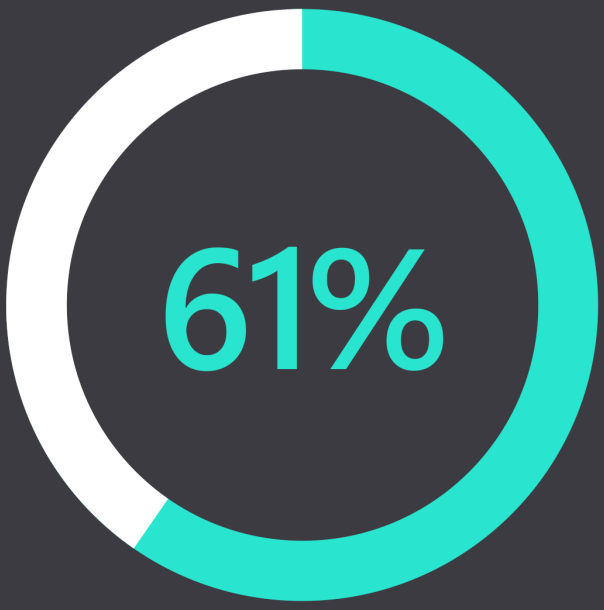
As increasing transaction volumes and ever-changing regulations are making finance more complex, businesses are looking to reduce the costs of the many manual tasks required in bookkeeping and accounting. With the rise of AI, companies are now turning to robotic process automation (RPA) to help reduce costs, speed processing, improve quality controls, and free up their employees' time for more strategic work.

Finance departments have been slow to embrace automation thus far, but research suggests that this is quickly changing. Gartner reports that while 56% of companies were investigating AI as a means for automating part of their finance operations, adoption levels hovered around 5% as of late 2018. But that number will soon change. By 2020, 31% of companies plan to introduce some form of financial automation, with another 26% anticipating that their automation efforts will be in full swing.[71]

Automation is set to have a major impact on finance departments. McKinsey estimates that with currently available technology, up to 42% of finance operations can be fully automated, and another 19% can be partially automated.[72] McKinsey theorizes that one-third of this automation can be achieved using RPA, which, as the technology matures, is becoming faster, cheaper, more accurate, and easier to deploy. The other two-thirds of automation can be achieved using technologies like machine learning and natural language processing.[73]

To achieve the best results, companies should take a systematic approach to automating tasks across the entire finance organization, beginning with routine transactional tasks.[74] In the future, there's evidence that RPA will be used for core finance activities as well, including areas such as financial closing and consolidation, reconciliations, posting general entries, preparing cash flow statements, fixed-asset and inventory accounting, and tax reporting, with the potential to reap considerable savings in error reduction alone.[75]

Percent of finance operations that can be fully or partly automated using currently available technologies.



KPMG is pursuing aggressive automation targets, aiming to save an estimated 200,000 hours of workforce capacity each year, and is encouraging employees to use the time savings to identify ways to make their jobs faster, better, or more efficient.[76]

Introducing automation will have obvious impacts on how an organization operates. Finance leaders should work hand in hand with IT and HR prior to undertaking any automation initiatives to discuss how to retrain and redeploy people whose functions have been automated.[77]

"Finance leaders should work hand in hand with IT and HR prior to undertaking any automation initiatives to discuss how to retrain and redeploy people whose functions have been automated."

Changes in payment processing reduce friction

An array of new and emerging technologies—including mobile point of sale (mPOS) payment processing, Near-Field Communications (NFC), cryptocurrency, and peer-to-peer (P2P) payments—are making it faster and easier for consumers shop. The earliest applications of these technologies center on P2P and B2C transactions; however, as more businesses and consumers adopt these technologies, and as businesses experiment with novel applications, they will undoubtedly impact how companies conduct B2B transactions and how they account for revenue and expenses.

P2P payments may offer the next big disruption in payment processing. PayPal, which owns Venmo, is making a big push to bring the P2P payment platform into the realm of retail. More than two million merchants now accept Venmo—including companies like Uber, Williams

Sonoma, Shopify, Grubhub, and Hulu. In Q4 2018, 29% of Venmo users made a monetizable transaction, largely driven by its partnerships with retailers.[78]

Many retailers are beginning to roll out mPOS devices, which allow companies to process payments using tablets, smartphones, or other handheld devices. For smaller merchants, mPOS devices reduce the equipment costs associated with accepting digital payments. For larger retailers, arming frontline employees with mPOS devices allows the company to accept payments anywhere in the store; however, issues like limited battery life and the awkwardness of carrying a mobile POS terminal has somewhat slowed adoption for this particular application.[79] Other retailers—including Meijer, Macy's, and Sam's Club—are investigating mobile self-checkout, which essentially turns a customer's smartphone into a POS device.[80]

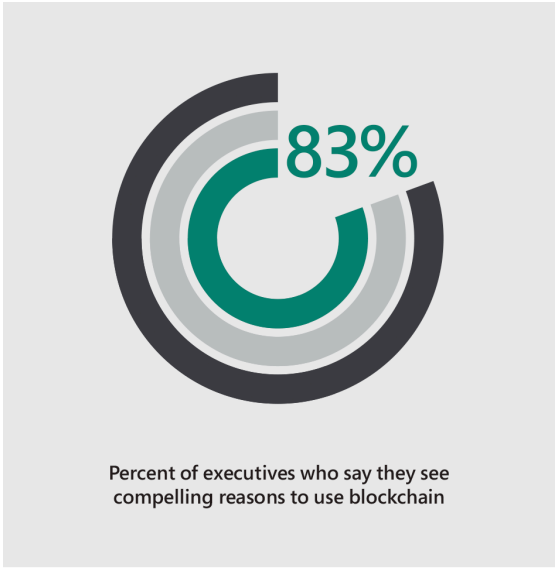
While cryptocurrencies have yet to make inroads with the majority of companies or consumers, there is one blockchain-enabled digital token that offers considerable promise for corporate transactions. JPM Coin, released in early 2019 by JPMorgan Chase, is a digital token representing US dollars that can be used to make instantaneous transfers between the bank's clients. The technology would allow corporate clients to immediately transfer funds across borders, a transaction that typically involves international wire transfers and can take several days to clear. JPM Coin can also be used to issue securities to institutional investors, and for corporations that use the bank's treasury services, the digital token can be used to streamline how companies manage funds at their international subsidiaries.

Growing in parallel with these trends is the use of NFC and mobile wallets to process payments in a retail setting. More US retailers are beginning to accept payment using mobile wallets. These technologies—including NFC, cryptocurrency, P2P, and mobile wallets—coincide with regulation changes in the US and abroad that will eventually make near-instantaneous payment processing the norm rather than the exception. Since faster account reconciliation holds clear benefits for both consumers and businesses, it's likely that companies and consumers alike will adopt these technologies at a faster rate in the next few years.

Distributed ledgers provide more reliable tracking

First described in 1991 by Stuart Haber and W. Scott Stornetta,[81] blockchains are decentralized, shared ledgers where all transactions are recorded securely by encryption in near real-time and are immutable (incapable of being altered or deleted) . Despite being nearly three decades old, blockchain technology remains in the early adoption phase, but attitudes and spending are changing fast. More than half of the executives polled in Deloitte's 2019 blockchain survey felt that the technology was a critical priority for their company, and 83% saw compelling reasons to use blockchain.[82] Overall, the global blockchain market is projected to grow at a CAGR of 83% between 2018 and 2025, reaching an estimated value of $165.5 billion by 2025.[83]

While it's most commonly known as the technology at the heart of cryptocurrencies like Bitcoin, there are many other exciting use cases for blockchain, many of which have implications for how financial departments operate. For example, a blockchain can connect ledgers from across an organization's supply chain—supplier, manufacturer, distributor, shipper, retailer, and end-consumer—to make tasks, like tracking a product's journey, much more accurate and efficient. Tracking a product's journey via blockchain can turn a manual process that once took days into an automated process that can be done almost instantaneously and yield real-time information.[84]



"Blockchain offers the potential to create continuously updated, incorruptible accounting ledgers."

For finance leaders, blockchain offers the potential to create continuously updated, incorruptible accounting ledgers—an exciting prospect that could help streamline processes, optimize data quality, improve transparency, and achieve better internal controls.[85] In 2016, KPMG partnered with Microsoft to introduce Digital Ledger Services, an offering designed to help companies realize the full potential of blockchain for their financial operations. Using Microsoft's Blockchain as a Service platform, the joint service helps companies reduce costs, streamline and automate back-office processes, and make transactions both faster and more secure.[86]

Companies are looking to blockchain to solve other business problems, too. One promising application of blockchain is with contract and document management—digitizing and moving the governance of paper certificates, warranties, and contracts into a blockchain—which can automatically update the documents when a triggering event occurs. And testing has already been implemented in the food safety industry, where blockchain allows food to be granularly tracked, so when a producer identifies an issue like a tainted batch of spinach—they can contain the problem by isolating the source and issuing a recall for only the affected products.[87]

Along those lines, blockchain is also being used to help companies verify the provenance and authenticity of goods from raw materials to finished products.[88] Other potential benefits of employing blockchain technology include reduced risk of fraud, fast and secure cross-border payments,[89] reduced time to complete transactions, better-networked loyalty programs, and increased customer trust. Today's finance leaders must understand blockchain and the possibilities offered by this disruptive technology.

Global data universe

by 2025

175 zettabytes

Percent of data that will be unstructured in 2025

Technology powers intelligent operations

Businesses establish a culture of data

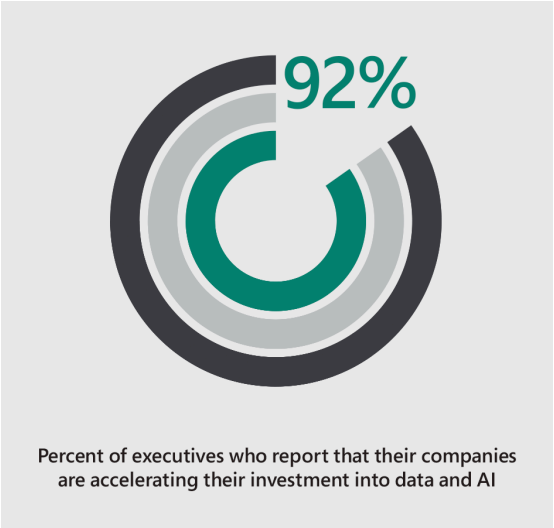
Data is everywhere, but it can be difficult to know what to do with it. IDC estimates that the global data universe will grow to 175 zettabytes by 2025[90], and up to 80% of that data will be unstructured data.[91] Thankfully, a new generation of business intelligence (BI) tools is making it easier than ever to gain insight into every aspect of a company's operations and to intelligently plan for the future. While there are dozens of tools that businesses can draw on to power their BI efforts, the ones most commonly used today are dashboards, reports, end-user self-service, and advanced visualizations.[92]

According to a recent study, companies most commonly adopt BI because they want to make better decisions, to operate more efficiently, to increase revenues, and to gain a competitive advantage.[93] When companies harness the wealth of internal and external sources of data that are available to them, the possibilities are exciting. BI can help companies do

things like unlock new customer bases, identify and evaluate job candidates, analyze operational performance in real-time, perform predictive maintenance on equipment, fine-tune marketing and CX efforts, and improve internal processes.[94]

The use cases for BI are compelling, and it's important for companies to get employees on board with using these tools. Furthermore, businesses must shift employees' and leaders' attitudes about the importance of data-driven decision-making. A recent survey of Fortune 1000 companies shows that while 91.6% of executives report that their companies are accelerating their investment into data and AI, only 28.3% felt that their organization had a culture of data.[95]

Companies that have a business intelligence competency center (BICC) are more successful in creating an organization-wide culture of data. This is most likely because BICCs provide support and education to various teams and departments and show them how BI could be used to satisfy business objectives.[96]



The takeaway for companies looking to get started with BI is that culture change doesn't just happen on its own. Successful BI initiatives require a team of champions who can serve as role models, coaches, and cheerleaders for the rest of the organization.

"AI is automating payment and invoice reconciliation, determining benefit and bonus accruals, and analyzing data from multiple sources and generating reports."

AI and ML deliver instant intelligence

Because these new systems are able to process data and identify patterns much faster than human workers, AI and ML are helping finance operations automate tasks that would be time- and labor-intensive or just plain tedious. Today, this technology is being used to reconcile payments and invoices, determine benefit or bonus accruals[97], and to extract and analyze data from multiple sources—such as spreadsheets, invoices, and receipts—and gather it into a single report.[98] It also has the potential to streamline the approvals process so that low-risk investments are greenlit automatically, and only those items that truly warrant review are flagged as exceptions.[99]

Not only do these developing technologies have the potential to dramatically change the day-to-day responsibilities of finance leaders, they're providing actionable insights that can drive company strategy. Advances in analytics make it possible for finance leaders to quickly assess performance data according to a variety of criteria—for example, breaking down results by region, time period, product or service offering, customer segment, sales channel, and more. Thanks to improvements in natural language processing, pulling detailed reports will soon be as easy as asking Siri to play your favorite song. And since ML systems become better at recognizing patterns and categorizing data over time, they're a powerful tool for helping finance leaders perform risk assessments, ensure compliance, and prevent fraud.[100]

Digital assistants help empower finance teams

Digital assistants, such as Siri, Alexa, and Cortana, have already become commonplace at home, and soon, there will be a broader adoption of digital assistants at work. There's a new digital assistant on the scene, one that's designed specifically for finance professionals. Introduced in 2018, Gia is poised to take automation of the finance department to the next level.[101] The self-learning digital assistant, which is made by a company called Emagia, is compatible with ERP software and works via a conversational interface. The product is intended to make human workers more efficient by performing routine finance tasks, providing access to real-time data, and answering questions about things like cash flow and billing. - -

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Work faster and smarter

Finance leaders are taking on new and important challenges in the workplace. They must leverage intelligent tools to combat emerging threats while fostering growth. At Microsoft, we're making finance smarter and safer with unified data that powers intelligent, automated systems.

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Modern finance leaders require more accurate data and foresight into performance and emerging trends. With AI and ML embedded, Dynamics 365 provides finance leaders with the insights to better predict trends, optimize processes, and grow their business.

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Be more proactive

To grow their businesses, finance leaders must look beyond the past and into the future. Microsoft empowers leaders with tools to help them identify emerging trends, predict outcomes, and automatically optimize workflows so that organizations can become less reactive and more proactive with their business strategies and operations.

05 / Fintech emerges as a major opportunity

Executive summary

As businesses fight for a competitive edge, fintech is providing them with new options and opportunities to turn small improvements into massive returns.

Highlights

- Global investment in fintech more than doubled between 2017 and 2018, rising to $55.3 billion.
- The top 10 retail banks in the US could lose up to 11% of their customers to smaller competitors, accounting for a whopping $16 billion in revenue.
- 100+ robo-advisors currently manage more than $980 billion of assets worldwide, with an average account size of over $21,000.

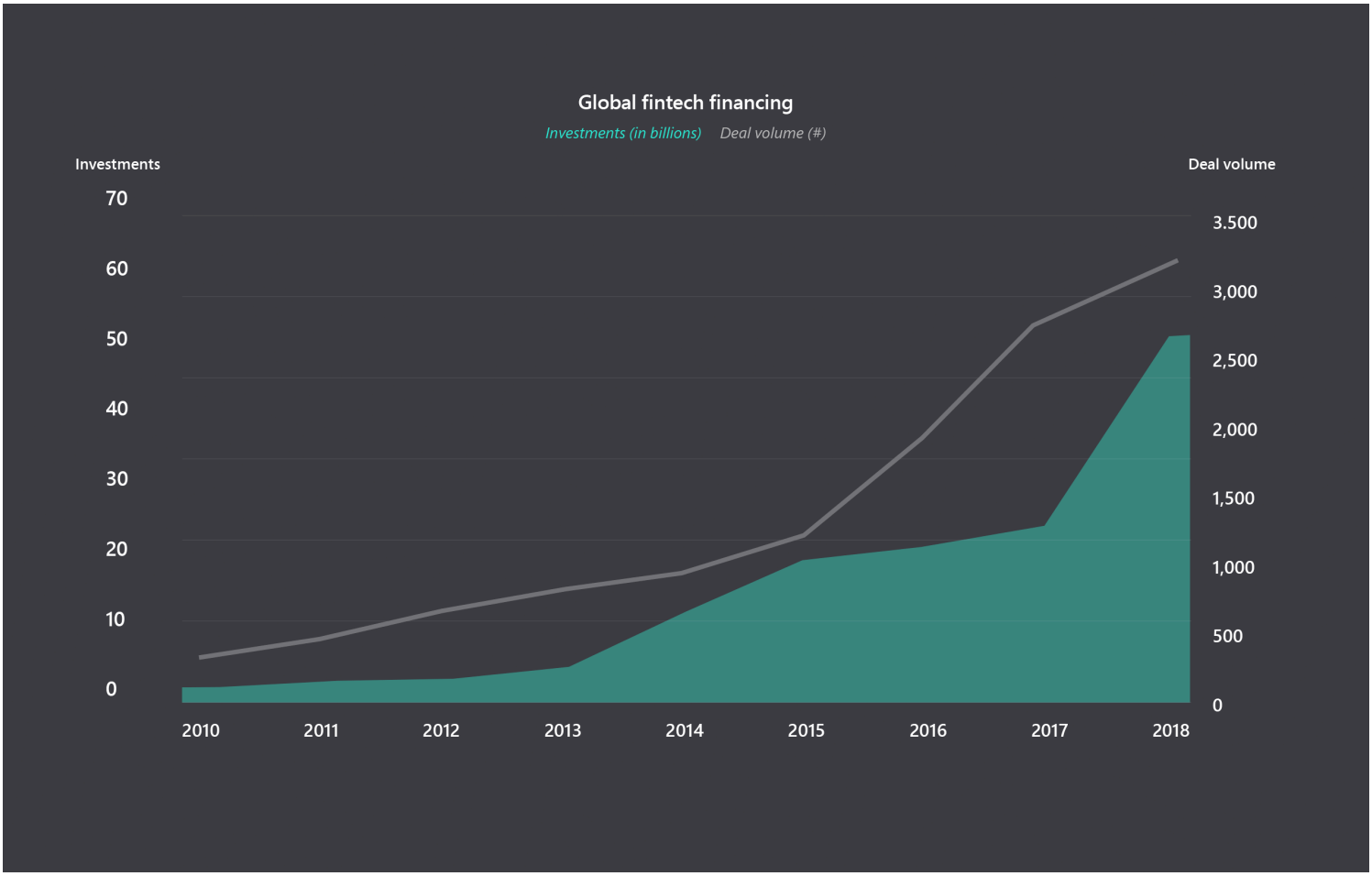
Fintech emerge as a major opportunity

In today's business environment, competition is more fierce than ever. The line between success and failure can be razor-thin, and even fractional changes in inputs can result in significant swings in output and performance. As finance leaders explore new ways to help give their businesses a competitive edge, many are turning to emerging financial technologies.

While fintech is not new, it is now moving from a "side hustle" to a true competitive differentiator for many organizations. Many of these technologies are hyper-niche and targeted—sometimes as small and targeted as a single algorithm that provides incrementally better forecasting—but the minor improvements that these technologies enable can deliver massive returns. Accordingly, businesses are investing more attention and money into this growing field of emerging financial technology.

Organizations make major investments in fintech

Global investment in fintech more than doubled between 2017 and 2018, rising to $55.3 billion.[102] In response to the demand for disruptive finance offerings, an increasing number of organizations—including FinLab, Barclays Accelerator, Deutsche Bank Innovation Labs, Wells Fargo Startup Accelerator, and Startupbootcamp—have established themselves as fintech incubators or accelerators. These incubators provide a training ground for startups that dream of turning their early-stage ideas into the next fintech unicorn, providing capital, mentoring, networking opportunities, office space, and pre-launch support. Unwilling to be outdone by a crop of digital upstarts, many established lenders are getting in on the action, too, launching proprietary fintech products and digital-only offerings, acquiring promising startups, and entering partnerships with tech companies to offer financial products to new audiences.[103]



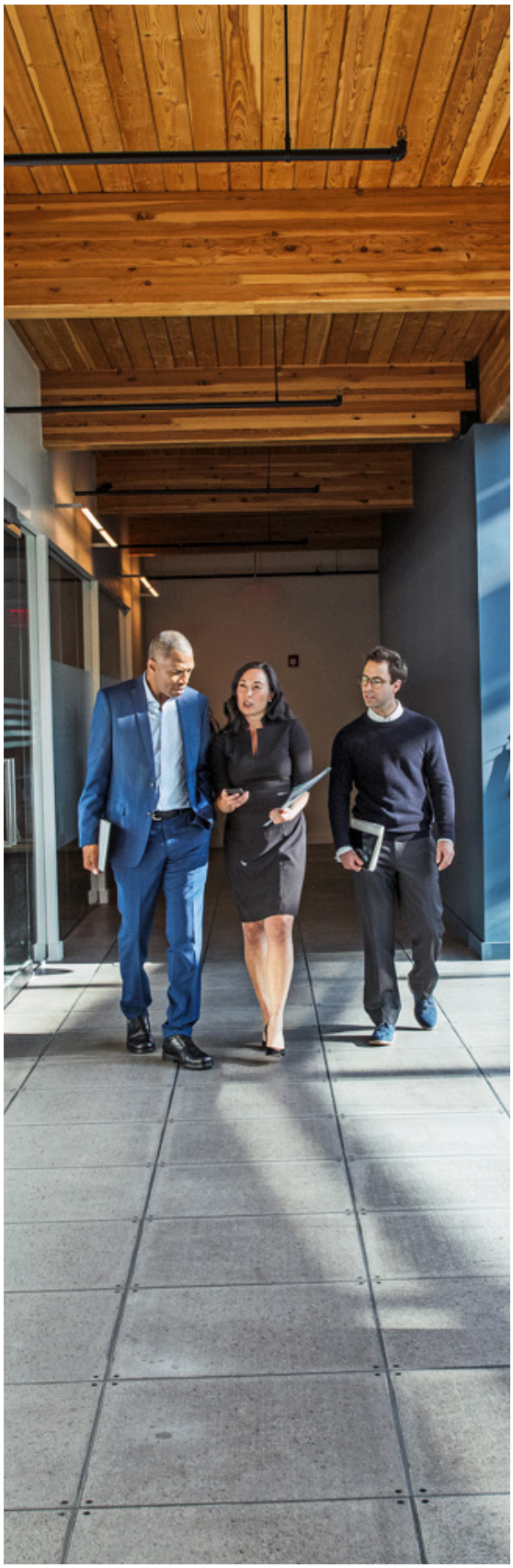
"Companies should use AI to augment human expertise, not replace it."

Fintech unlocks new opportunities

Businesses investigate advanced credit models to reduce risk

For the past few years, data scientists and lenders have been wrestling with a question: can AI be used to generate more accurate credit scores than traditional statistical models? AI models can help lenders analyze more than one variable at a time[104] and identify patterns in data that might not be discoverable using traditional credit scoring models.[105] Since these systems employ machine learning, the models automatically become more refined over time. Relying on AI credit scoring models them comes with risks, specifically, a lack of human oversight and transparency—with an ML-only model, it can be difficult to identify which variables are driving predictive outcomes.[106]

Experts from FICO caution that in the absence of human domain expertise, ML-only credit scoring can introduce potential biases, risk, and confusion.[107] Their suggestion? Use AI to augment human expertise, not replace it. In a 2018 article, experts at FICO outline how they used ML to rapidly develop and test a credit scoring model, then used a system of segmented scorecards to approximate the ML model as closely as possible.[108] The result gave more accurate results than traditional models while still allowing human experts to impose constraints, ensure better control, and retain transparency.



Credit scoring systems are only as good as the data they consume, and a number of startups are questioning what other data could be used to predict the likelihood that someone will repay a loan. Alternative lending startups like LenddoEFL, Cignifi, Tala, and Sokowatch hope that by looking to other types of data—including smartphone habits, social media history, and behavioral traits—lenders can extend credit scoring to the underbanked or "credit invisible" (i.e., businesses[109] and individuals who don't have enough credit history to be eligible for loans or credit cards) and to populations that live in markets where credit reporting isn't well developed.[110]

However, Experian warns that social media activity should not be used to generate personal credit scores, as it can easily be manipulated and often reveals personal information such as age, race, gender, religion, or marital status, making it noncompliant with the Fair Credit Reporting Act.[111]

"Twenty-five of the most popular challenger banks account for more than 30 million accounts worldwide."

Open banking unlocks new opportunities

Application program interfaces, or APIs, are nothing new—the technology has been around for decades. Today, APIs are the cornerstone of open banking, allowing fintech providers to quickly and securely connect with banks and non-banks in a host of fascinating ways. The result is increased competition in the sector, as established industry players rush to remain competitive against smaller, more agile entrants. Consumers are reaping the benefits of open banking, with sophisticated and intuitive user interfaces, more convenient services, better choices, improved transparency in banking products, and greater control over their finances.

Digital-only banking grows in popularity

A new cohort of digital-only challenger banks is setting its sights on the retail banking industry. Thanks to lower overhead costs, these challenger banks are able to offer incentives like free checking, lower minimum deposits, low account fees, and penalties, and higher interest rates on savings accounts and CDs. Combined with easy account setup, user-friendly digital interfaces, and convenient features, such as mobile check deposit, it's no wonder that these web- and app-driven banks are appealing to younger consumers.

Twenty-five of the most popular challenger banks account for more than 30 million accounts worldwide—and that's not including offerings from neo-banks in China and India.[112] Given public frustration with national banks over perceived missteps, lack of transparency, hefty account fees, and data security breaches, it seems likely that these challenger banks will continue to steal market share from the industry's most prominent players. It is estimated that the top 10 retail banks in the US could lose up to 11% of their customers to smaller competitors, accounting for a whopping $344 billion in deposits and $16 billion in revenue.[113]

Top 10 retail banks losses due to challenger banks

11% Lost customers

$344B Lost deposits

$16B Lost revenue

Robo-advisors and hybrid models

For many people, automated financial services—also known as robo-advisors—offer a lower-cost, more accessible alternative to traditional wealth management firms.[114] Robo-advisors use algorithms to automatically allocate and manage customers' assets based on their investment goals and risk tolerance.

While the software that powers robo-advisors has been used in investment banking for nearly two decades, it wasn't until the introduction of Betterment in 2010 that it became broadly publicly accessible. For the first time ever, people without finance backgrounds could manage their own investments directly. The 100+ robo-advisors currently in operation around the world today manage more than $980 billion of assets worldwide, with an average account size of just over $21,000.[115]

"Cryptocurrency offers a fast, secure means of transferring funds across borders."

Cryptocurrency generates attention (and keeps everyone guessing)

More than a decade after the creation of Bitcoin, the world is still trying to make sense of the risks and opportunities afforded by cryptocurrencies. As of now, it's unclear when—or whether—alternative currencies will catch on beyond their devoted cores of users to become a mainstream form of payment, but experts say it's not beyond the realm of possibility. Many believe that in the not-too-distant future, individual companies—or alliances of companies—will issue their own cryptocurrencies and require that consumers use it for purchases.[116]

In theory, the appeal of cryptocurrency is clear. Thanks to blockchain technology, cryptocurrency offers a fast, secure means of transferring funds across borders. When paired with smartphones and QR code payment systems, cryptocurrency makes it easier for historically unbanked populations—for example, consumers and small business owners in developing nations— to make and accept digital payments without the fees typically associated with credit and debit cards. But the development of proprietary, largely unregulated currencies that aren't tied to a traditional monetary system poses a dilemma for consumers and investors who don't know which currencies to trust.

The Geneva-based Libra Association intends to address those concerns with a new stable coin. Led by Facebook, Libra Association is a consortium that includes companies like MasterCard, Visa, Stripe, Uber, Lyft, eBay, and Vodafone, plus a number of blockchain and venture capital firms and aid organizations such as Kiva and Mercy Corps.[117] Unlike other

cryptocurrencies, such as Bitcoin, Ethereum, or Ripple, Libra would be backed by a reserve of fiat currencies, which Libra Association argues will make the value of Libra more predictable over time.[118] However, pushback from critics may delay Libra's June 2020 launch. Among the proposed currency's opponents are France and Germany, which have said they intend to prevent Libra from being used in the EU[119], citing concerns over consumer risk and the potential threat to the sovereignty of governments' monetary systems.[120]

Meanwhile, the central banks of several nations, including China, the Bahamas, Thailand, Uruguay, and Sweden, are in various stages of testing digital versions of fiat money.[121] These central bank digital currencies would combine the security and efficiency of cryptocurrency with the relative security of government-backed paper currency.[122]

So far, in the Wild West of digital currencies, it's every company, and nation, for itself. - -

06 / Business models get redefined

Executive summary

As the business landscape changes, finance leaders are transforming their organizations to grow and engage with customers in new and meaningful ways.

Highlights

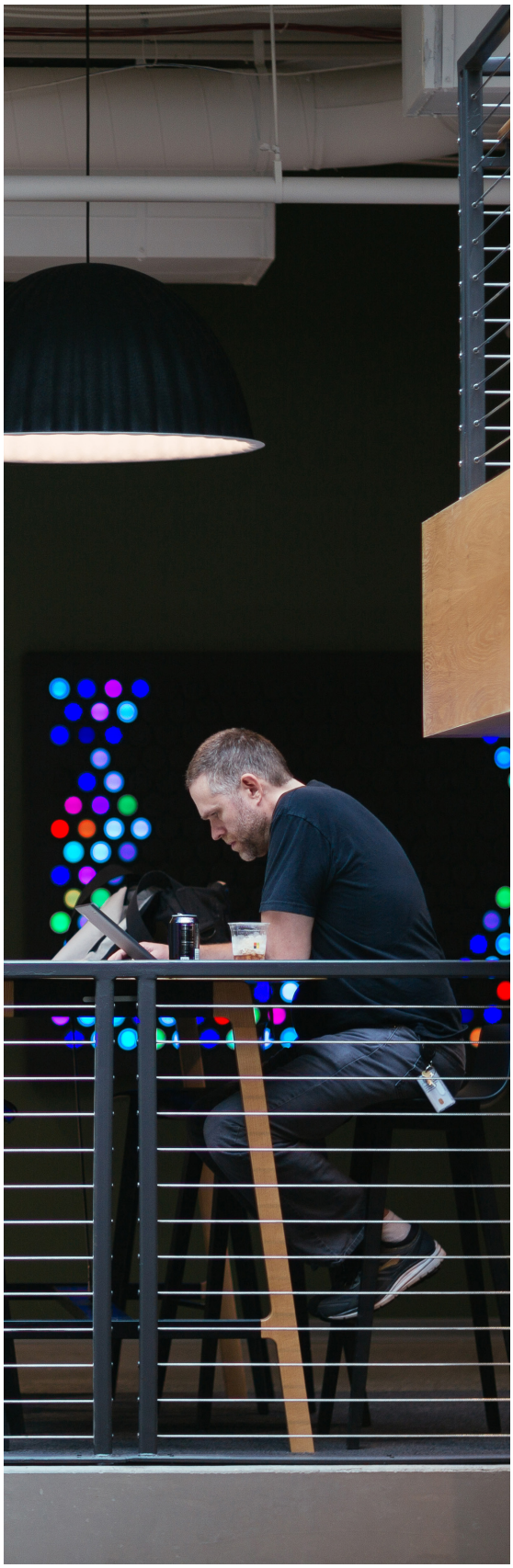
- There are more than 375 crowdfunding platforms in the US, and crowdfunding campaigns raise more than $17.2 billion annually.
- In 2020, Asian nations, China, and India are projected to grow at a rate of 5%, 6%, and 7%, respectively.
- Between now and 2025, the ten fastest-growing cities in the world will all be in Africa.

Organizations redefine their business models

In an era defined by industry convergence, high customer expectations, increasing transparency, and a breakneck pace of change, finance leaders must uncover new ways to deliver goods and services that can withstand market pressures and generate long-term customer relationships.

Many companies have discovered that they can better serve their customers' needs—and create the type of relationships that endure long after the sale—by using the cloud to transform their products into licensing-based services, while others are turning to new types of partnerships and geographies to expand their footprint.

These changes are not mere derivatives of their existing offerings but represent a more fundamental reimagining of their business models and how they serve their customers, allowing them to differentiate their offerings and gain a competitive edge in a rapidly changing business environment.



Platform-as-a-Service

Platform-as-a-Service is a category of cloud computing services that provides customers with a platform on which to develop, run, and manage their applications and services. For example, these platforms can enable a company to set up an online store without the need to develop a custom solution—as is the case with Shopify and Amazon Storefronts. Similarly, these platform-based services may also provide a platform on which a company can create a product that they use to serve their customers. An excellent example of this scenario is Microsoft PowerApps, a development platform that allows companies to develop low- or no-code apps.

Product-as-a-Service

In Product-as-a-Service business models, the physical products, software, and support are delivered as a service or virtual experience, and the buyer no longer takes ownership of a physical product. Think of it as a modern, cloud-enabled twist on traditional rental and licensing agreements. BMW's Share Now on-demand car service is a form of Product-as-a-Service. Software-as-a-Service is another type of Product-as-a-Service that many people are familiar with—such as Office 365 or Adobe Creative

Cloud. In some cases, companies have extended the Product-as-a-Service model to physical products, where customers pay for an output, not for the tool that creates the output. A common example is copier leasing agreements where a third-party vendor owns and services the device, and IoT sensors are used to monitor the customer's monthly usage.

Other digital services

New technologies, such as IoT, AI, and ML, are providing companies with greater connectivity and visibility across their products and operations. Forward-thinking companies are leveraging this connectivity to create digital services that allow them to serve customers in new ways. Cloud-networked operations open up a broad range of services for companies to explore, including Manufacturing-as-a-Service, Design-as-a-Service, Experimentation-as-a-Service, Equipment-as-a-Service, Simulation-as-a-Service, Management-as-a-Service, Maintenance-as-a-Service, and Integration-as-a-Service.

Quick launch platforms enable faster testing of business models

In the past two decades, crowdfunding has emerged as a means for both individuals and startups to validate business and product ideas and generate seed capital to get their plans off the ground. While

Number of crowdfunding platforms

375

Amount raised by crowdfunding campaigns annually

$17.2 billion

crowdfunding is a concept that has its roots in 18th century Ireland, the current iteration gained traction after the Great Recession, when would-be entrepreneurs, finding it difficult to secure traditional financing in the wake of the collapse of the financial industry, sought funding from other sources.[123] Indiegogo and Kickstarter were early players in the space; in the United States today, there are more than 375 crowdfunding platforms, and crowdfunding campaigns raise more than $17.2 billion annually.[124]

Non-traditional partnerships and offerings

For companies looking to defend or grow their market share, recent advances in technology have made it possible to think beyond vertical and horizontal integration and expand their offerings to completely new categories of products and services. The result is a slew of forward-thinking partnerships and initiatives. Three recent examples include a healthcare partnership between Amazon, Berkshire Hathaway, and JPMorgan Chase; Tesla's foray into the insurance business; and the debut of the Apple Card.

In March 2019, Amazon, Berkshire Hathaway, and JPMorgan announced a new healthcare venture called Haven Healthcare. Despite no direct experience in providing healthcare or health insurance, these partners are now delivering health insurance plans for tens of thousands of their employees, featuring wellness incentives and zero deductibles. Through Haven, the three companies aim to improve how the healthcare system works, making it less expensive, easier to navigate, and more focused on patient experience.[125]

"For companies looking to defend or grow their market share, recent advances in technology have made it possible to think beyond vertical and horizontal integration and expand their offerings to completely new categories of products and services."

In August 2019, Tesla announced that it would begin offering insurance to Tesla owners in California, promising rates up to 30% lower than those offered by other insurers. A number of industry observers, including Warren Buffet, whose company Berkshire Hathaway owns Geico, warn that this is a risky move for the California automaker[126]. However, if you consider that Tesla is continuously collecting anonymized data from each one of its cars, it makes sense that the company would be well equipped to accurately predict the lifetime costs of insuring a customer.[127]

Most recently, in September 2019, Apple launched the Apple Card. Issued in partnership with Goldman Sachs, Apple Card is a traditional credit card, and in that regard, not much different than any other retailer-branded credit product. What makes it notable is the way that Apple is offering the card and how it's encouraging consumers to use it. First, anyone with an iPhone running the latest version of iOS can sign up for an Apple Card in a few short steps using only their phone. And second, cardholders receive 2% cash back for any purchases made using Apple Pay.[128] Considering that Apple Pay is already used by more than 253 million people around the world[129] and that global sales of the iPhone have exceeded 200 million units every year since 2015[130], it's easy to see how influential this product could be.

What defines these examples, despite their distinctiveness, is how these companies leveraged their core competencies in developing these new offerings. Amazon, Berkshire Hathaway, and JPMorgan Chase focused on their strengths in operations, logistics, and financial management to reimagine how healthcare services could be delivered. Tesla is leveraging its strength in data collection and analysis—as well as the fact that it owns the manufacturing process—to create insurance plans that are more accurate and favorable to its drivers. And Apple is leveraging it's platform, ecosystem, and expertise in user experience to create a financial product that is both widely available and easy to use.

Opportunities abroad increase

Companies of all sizes would be wise to turn their sights to Asia and Africa, which are both experiencing a period of strong growth. Foreign direct investment (FDI) i n Asia reached $512 billion in 2018, making it the world's largest FDI region. Of the world's 5,400 specialized economic zones, 4,000 are in Asia, with more than 2,500 in China alone.[131] Rates of GDP growth are expected to stay high across Asia in 2020, with experts estimating a growth rate of 5%, 6%, and 7% across emerging Asian nations, China and India, respectively.[132]

As Africa enters what some are dubbing a post-post-colonial era, the continent is experiencing rapid growth thanks to foreign investment from—and trade with—countries like China, India, Malaysia, Vietnam, Turkey, the Gulf states, and Russia. North America, Britain, and Europe, which have been slow to adapt, are finding their political and economic influence on the African continent changing as a result. According to estimates by the UN, between now and 2025, the ten fastest growing cities in the world will all be in Africa.[133] - -

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Evolve your business
Modern businesses must evolve beyond their existing business and operating models. At Microsoft, we're providing the technology and support finance leaders need— from analytics solutions to collaboration tools to development platforms—to redefine their businesses.

Transform culture
To solve today's most pressing problems, business leaders must transform their cultures. From tools that improve communication to the platform on which a startup will build the app that will disrupt an industry, Microsoft is empowering businesses to redefine their culture.

Make tech accessible
Modern finance leaders seek diverse perspectives and new ideas to challenge their most ingrained assumptions. With familiar tools and cloud-based applications that allow access from anywhere, Microsoft is making technology more accessible to more people, opening untapped markets for talent and innovation.

Unlock new opportunities
Technology is redefining business by unlocking new opportunities for customer engagement. At Microsoft, we're empowering businesses with the tools they need to embrace these changes and interact with customers on their own terms.

07 / Businesses adapt to global uncertainty

Executive summary

With new cyber risks, geopolitical shifts, and new regulations, finance leaders are looking for ways to navigate the uncertainty.

Highlights

- 64% of consumers have opted not to do business with a company with which they have data security concerns.
- A statistical index the World Trade Organization uses to measure uncertainty in economic policy around the globe hit its highest level ever, more than three times as high as the average for the period 1997-2015.

Technology creates new challenges

More data means more problems

The universe of data is growing steadily each day. A recent study by Deloitte showed that data management and data integrity topped executives' lists of concerns and challenges when it came to managing cybersecurity.[134]

With more potential sources of data than ever—and more systems both inside and outside the organization that can potentially access that information—many companies find themselves either improvising or managing patchwork efforts when it comes to data security. The executives surveyed by Deloitte reported that although digital transformation and cybersecurity are both high priorities for their companies, the two functions typically aren't well integrated.[135] The result is that, by and large, companies aren't addressing the impact that introducing new technologies could have on their—and their customers'—data security.

Evidence shows that consumers are beginning to demand change. In a study conducted by the Harris Poll for IBM, 83% of people surveyed said that companies should be doing more to protect consumers from cybersecurity threats, and 64% said they have opted not to do business with a company if they have doubts over whether their data would be secure.[136]

Adopted by the EU in May of 2018, the General Data Protection Regulation (GDPR) is one of the most ambitious efforts to date to guarantee the privacy of individuals' data in all formats. Among other things, GDPR obliges companies and other organizations to 1) explain how they collect and use data on individuals, 2) grant those individuals the right to access and correct data that is collected about them, 3) be informed of data breaches, and 4) have their personal data deleted (a.k.a. the right to be "forgotten").[137]

GDPR had an immediate global impact because it applies to any company or organization that offers goods or services in the EU or that monitors the behavior of individuals there. The full extent and nature of that impact remain unknown, however. One obvious outcome of the law is the privacy notices that seem to pop up on most websites these days. It's unclear whether these pop-ups are effective; anecdotal evidence suggests that most consumers either ignore them or don't know what they can do with the information. Corporations and the EU itself have mostly responded by adding new bureaucracies. GDPR obliged companies to establish data protection offices, but those new offices' mandates often overlap or conflict with existing corporate functions, such as cybersecurity or legal, and many organizations are still struggling to draw clear lines.[138]

"As new and existing technologies mature, they will continue to reshape how companies relate to their suppliers and customers."

EU regulators have seen a sharp jump in the number of data breaches reported to them, but the threat of large fines against companies that violate the GDPR has mostly remained just that. In the policy's first year, regulators only levied 55 million euros in fines, and a single 50 million euro fine imposed on Google in January 2019 accounted for nearly all of that total.[139]

In 2019, California adopted an ambitious new data-privacy law partially modeled on GDPR; however, the law does not go into effect until 2020, and companies—including Google—continue to lobby for ways to curtail its scope.[140]

Competition increases as technology drives industry convergence

As new and existing technologies mature, they will continue to reshape how companies relate to their suppliers and customers—with companies most likely facing competition from businesses in previously unrelated sectors.[141]

A recent report from PwC argues that tech-driven industry convergence isn't anything new. In fact, they say, such convergence is actually cyclical, pointing to similar patterns of cross-industry activity during periods of economic expansion in 1998-2000 and 2004-2007. According to their analysis, the most recent wave of convergence, which began in 2016, has affected companies in technology, telecom, media, automotive, retail, manufacturing, healthcare, consumer goods, transport and logistics, energy, and financial services.[142] Of these industries, the coming decade will largely be defined by seismic changes in insurance, healthcare, and consumer products.[143] Clusters of industries tend to converge

around particular market opportunities, such as how changes in the transportation sector have opened up new avenues for automotive companies as well as businesses in the energy, tech, and logistics industries.[144]

There's reason to feel hopeful, not fearful, about the unpredictable shifts that industry convergence will bring. Unconventional partnerships and cross-industry collaboration will be key to addressing issues like healthcare, global warming, and the rapid growth of urban centers around the globe.[145]

"Unconventional partnerships and cross-industry collaboration will be key to addressing issues like healthcare, global warming, and the rapid growth of urban centers around the globe."

Leaders try to navigate a highly politicized environment

In August 2019, a statistical index the World Trade Organization uses to measure uncertainty in economic policy around the globe hit its highest level ever, more than three times as high as the average for the period 1997-2015. From Brexit negotiations and shifting trade alliances to changes in immigration and environmental policies, the unpredictability of today's political and economic landscape can be daunting for businesses to navigate.

How leaders can help their companies succeed during periods of elevated risk depends on a number of factors.[146] To respond effectively to an uncertain or politicized environment, leaders must first consider whether the market for the company's products and services is strong or declining. They also need to consider whether the company is poised for growth or whether it faces strong challenges from competitors. Additionally, they must assess if the risk is time-limited or ongoing and determine whether the element of uncertainty is specific to the company or industry or whether it's a global concern. By understanding these factors, business leaders will be better positioned to develop strategies to thrive in uncertain times.

Regulation changes create uncertainty

Interest rates become more dynamic

In 2019, concerns about the sustainability of US economic growth prompted the Federal Reserve to cut interest rates for the first time since the financial crisis of 2008. The initial reduction came in July when the Fed trimmed the federal funds rate by one-quarter point. The Fed acted again in mid-September, lowering rates by another quarter of a percentage point to a range of 1.75 to 2.0%. In announcing that second cut, the Fed also said that it was prepared to take further action if signs of a slowdown in the US economy start to accumulate. At the time, many officials expected the Fed would make one more move on interest rates in 2019, but few anticipate rates falling below 1.5% before 2022.[147]

Across the Atlantic, the European Central Bank (ECB) t ook even more aggressive action in 2019 as fears mounted of a recession in some of the continent's largest economies. In September, the ECB cut its interest rate for deposits to -0.5%, a level meant to prod banks to lend their cash instead of sitting on it. At the same time, the ECB announced it would restart other stimulus programs it had halted less than a year earlier, including printing more money and buying more than $20 billion in bonds and other financial assets each month.[148]

Tariffs

Despite repeated rounds of bilateral talks, tensions between the US and China remain high, with widespread impacts on global trade and production. By September 2019, the US had imposed tariffs on more than half a trillion dollars' worth of Chinese exports, while China had reciprocated with tariffs on nearly $200 billion in US products.[149]

These tariffs have driven up the prices of raw materials and reduced real income in many affected countries.[150] Since January 2016, the prices of many raw materials

have risen at double-digit rates, reversing a years-long deflationary spell, and tariffs on things like steel and aluminum have contributed to this upturn.[151] Meanwhile, the International Monetary Fund estimates that American and Chinese tariffs will reduce global economic output by about 0.3% in 2019[152] and by as much as 0.5% in 2020.[153]

The trade fight and its fallout have prompted many US companies with operations in China to scale back or deprioritize that part of their business.[154] Some manufacturers have shifted supply chains out of China entirely, while others have redesigned products to reduce dependencies on manufacturers there. In cases where neither of those approaches is an option, producers are often passing the price increases associated with tariffs along to their customers.

More broadly, the persistence of sharp tensions between the world's two largest economies has exacerbated uncertainty about the future contours of the global economic landscape. In McKinsey's September 2018 Global Economic Survey, one-third of all respondents identified uncertainty over trade policy as their top concern, and three-quarters of the surveyed companies said they were adjusting their strategies in light of this trend.[155]

Many businesses are responding to this heightened uncertainty by delaying or trimming investments in their factories and workforces.[156] Manufacturers are also looking to increase their resiliency against this "new normal" by making their supply chains more flexible, more local, or both. A recent McKinsey report notes that many companies are moving supply chains closer to key markets as the costs and risks of global operations continue to increase, partially reversing the globalization of manufacturing that occurred in the preceding two decades.[157] Others are inking contracts with suppliers who produce their goods in multiple countries, allowing them to quickly shift production as conditions change. New digital technologies are also playing a role, giving manufacturers ways to manage more complex workflows and allowing them to generate more accurate forecasts of local demand.[158]

Brexit uncertainty continues

In a June 2016 referendum, the UK stunned the world by voting narrowly in favor of leaving the EU. As of January 31, 2020, the UK has officially exited the EU, as the tumult sparked by the Brexit referendum continues to reverberate through the global economy.

The defining feature of the Brexit process so far has been uncertainty—over what kinds of new relationships the UK might forge with its neighbors and trading partners in a post-Brexit world and how that transition will affect the economies of the UK, the EU, and the globe. In a recent iteration of the Decision Maker Panel, a monthly survey of thousands of UK CFOs, nearly 60% of respondents identified Brexit as one of the three most important sources of uncertainty for their businesses—about as high as that figure has risen since the referendum and much higher than in 2016 and 2017.[159]

As negotiations continue, the economic consequences of the Brexit vote are already substantial. An academic paper published in late 2019 reported that, over the three years since the referendum, Brexit had reduced investment by 11% and shrunk UK productivity by two to five percent. And in the July 2019 update to its biannual World Economic Outlook, the International Monetary Fund identified a no-deal Brexit as one of the "adverse developments" that could dent growth in the global economy in 2020.

International cooperation wanes

In 2019, rising tensions between powerful nations reinforced the sense that international relations have become less cooperative and possibly more dangerous than they were just a few years ago. The struggle between China and the US over trade continued to heat up. Meanwhile, relations between the US and Russia eroded further in August 2019, when both countries withdrew from a key nuclear arms–control treaty.[160] In South Asia, longstanding tensions between nuclear-armed rivals India and Pakistan flared into numerous border skirmishes in 2019, and, in the words of Pakistan's foreign minister, threatened to slide into an "accidental" war.[161] And in the Middle East, the United States and Iran traded threats and accusations after oil tankers were attacked in the Straits of Hormuz and Iran downed a US drone.[162]

Even if the likelihood of open warfare between major powers remains low, these tensions represent a form of political risk that can hurt corporations in other ways. The rise of protectionism and nationalism in the wake of the 2008 financial crisis have eroded the international cooperation that helped soften the last crash, meaning future crises might be even more pronounced.[163]

Global and regional tensions can hamper economic growth, drive up the price of commodities and other goods, and impede or foreclose business opportunities in affected countries. They also hinder cooperation on transnational problems that require a collective response, such as counter-terrorism, nuclear proliferation, and climate change.

Organizations prepare for an election year

Some of the world's largest economies are holding elections in the next two years with potentially significant consequences for businesses within and outside their borders. In the United States, the next presidential campaign cycle is well underway, and control of both houses of Congress remains up for grabs. The outcomes of those contests could produce substantial changes in domestic and foreign policy.

In the UK, national elections are not due again until 2022, but discord over Brexit has already cost Teresa May the job of Prime Minister, and her successor, Boris Johnson, is pushing for an early vote in a gambit to solidify parliamentary support for leaving the EU.[164] Across the channel in Germany, longtime chancellor Angela Merkel announced in late 2018 that she would not seek reelection to that post in 2021, and speculation that she will step down before the end of her term continues to bubble up in the press from time to time.[165] - -

08 / Businesses place a renewed focus on ethics

Executive summary

With mounting pressure from consumers, regulators, and shareholders, businesses are investing in more ethical, sustainable practices.

Highlights

- By 2021, US consumers will spend between $142.1 billion and $150.1 billion on sustainable fast-moving consumer goods.
- Despite accounting for 45% of all employees at the largest companies in the US, women occupy just 25% of C-suite positions.
- Companies with higher levels of diversity reported that 45% of their income came from new products and services, compared to only 25% at less diverse firms.

Businesses place a renewed focus on ethics

Modern businesses are paying more attention to the social issues that

impact their employees, customers, and communities, both as an ethical imperative and because the market is beginning to demand it. In a time when consumers of all ages are championing higher ethical standards for businesses, technology, like social media, has increased organizational transparency, making even small gaffes potentially costly.

But fear of bad publicity isn't the only—or even the primary—reason that companies today are making more of an effort to behave ethically. Many organizations are discovering that there are significant advantages to operating more ethically, whether that's by saving money through sustainability measures or improving creativity and performance through workforce diversity, helping to elevate these important issues in the workplace and beyond.

Corporate responsibility gains momentum

Since the publication of Milton Friedman's seminal article on shareholder theory in 1970, publicly held companies have been conditioned to equate profits with good, prioritizing shareholder value over just about everything else. Today, we find ourselves in the midst of a sea change—both figurative and literal, as the accumulated impact of human activity causes global sea levels to rise—that has leaders in government and business reevaluating the role of the corporation in society and questioning the idea that profits are the only good that companies should strive to attain.

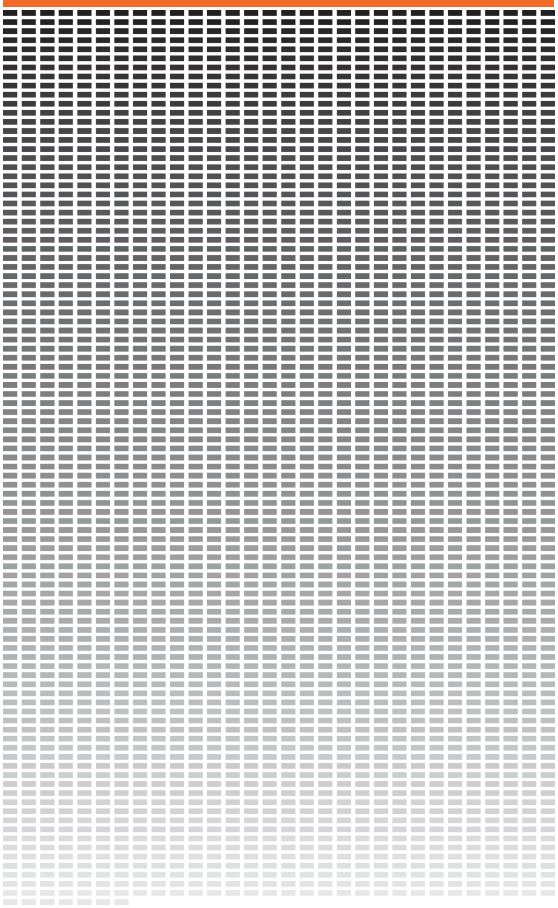
In August 2019, the Business Roundtable—a coalition of CEOs representing some of the biggest companies in the United States, including Walmart, Apple, and Pepsi—issued a statement contending that companies are responsible for more than just shareholder value. Instead, they argued, businesses' objectives should also take into account the good of their employees, their suppliers, and the environment.[166]

While the coalition's statement didn't identify specific measures that the companies were planning to take, their general approach is consistent with the idea of the triple bottom line, a framework that encourages organizations to focus as much on people and the planet as they do on profits. One organization that is helping to popularize this model is B Lab, which measures companies' overall social and environmental impact. In order to be certified, companies must meet high, verifiable standards for social and environmental performance and transparency and must demonstrate the ability to balance profit and purpose. As of October 2019, 2,947 companies around the globe had achieved B Corporation certification.[167]

Number of B Corporations

as of October 2019

2,947



There are many compelling reasons for companies to pursue a triple bottom line. Among them: consumer demand. A recent study conducted by Pew Research Center found that 56% of American adults believe that protecting the environment should be a top priority for the President and Congress, with 44% feeling that climate change should be a top priority.[168] Similarly, Nielsen estimates that by 2021, US consumers will spend between $142.1 billion and $150.1 billion on sustainable fast-moving consumer goods, accounting for 25% of sales in that category.[169]

There's also evidence to support the idea that sustainability efforts can provide companies with a competitive advantage. Many experts agree that companies should willingly embrace the most stringent sustainability requirements that apply to their industry, even if they're not currently being enforced. When (not if) the bar for compliance is raised, companies that are already equipped to meet the new goals will have significant first-mover advantages over companies that did the bare minimum for as long as possible.[170]

Companies that are willing to take a hard look at their value chain, and ask what they can be doing to operate more sustainably, often unlock new ideas and possibilities. In some cases, they wind up creating products that are better than what they were making before—or that are so different than what any other company is producing that they invent a whole new niche for themselves. In that same vein, companies should involve their employees in their sustainability efforts. By challenging employees to identify ways to make operations leaner and more environmentally friendly, management may unleash insights that aren't apparent from the vantage point of the C-suite—while making employees feel more engaged and valued in the process.

The companies that succeed in becoming more sustainable are often the ones who approach their value chain with curiosity and a willingness to ask, "Why do we do it this way?" and "What if…?" The key is approaching sustainability not as a cost that must be borne, but as a driver of innovation.

One such organization is Dutch manufacturer Fairphone, which touts its handheld as "the world's most sustainable" phone. Fairphone's goal isn't to dominate the market for smartphones—the company has only sold 175,000 units since 2013. Instead, the company aims to show other device manufacturers what's possible if you reimagine the sourcing and production process. Fairphone's devices are constructed using sustainably sourced materials, and unlike other smartphones, they're modular, meaning consumers don't need to replace the entire device if one of the components fails.[171]

As green business practices move from the realm of regulatory and CSR imperative to a driver of profit, more and more companies are taking concrete steps to reduce the environmental impact of their operations. Businesses are making an effort to reduce the amount of energy they consume as well as the waste, greenhouse gases, and other pollution created as byproducts of their operations. They're investing in alternative energy sources, such as wind and solar, to power their operations, and using recycled, recyclable, and reusable materials whenever possible.[172] Forward-looking organizations are also harnessing technology to reduce their environmental footprint.

"As of the writing of this report, 672 companies around the world—including Microsoft—have adopted science-based targets for reducing greenhouse gas emissions related to their operations."

Cloud-based collaboration tools—from shared documents and video conferencing to digital twins and mixed reality training—make it easier for teams to work together no matter where they're located.

As of the writing of this report, 672 companies around the world—including Microsoft—have adopted science-based targets for reducing greenhouse gas emissions related to their operations.[173] Many of the world's most valuable companies have gotten in on the action. In late 2019, Amazon announced that it intends to achieve net-zero carbon emissions by 2040 and to power its operations using 100% renewable energy by 2030. The company hopes that other organizations will follow their lead and pledge to meet the same goals.[174]

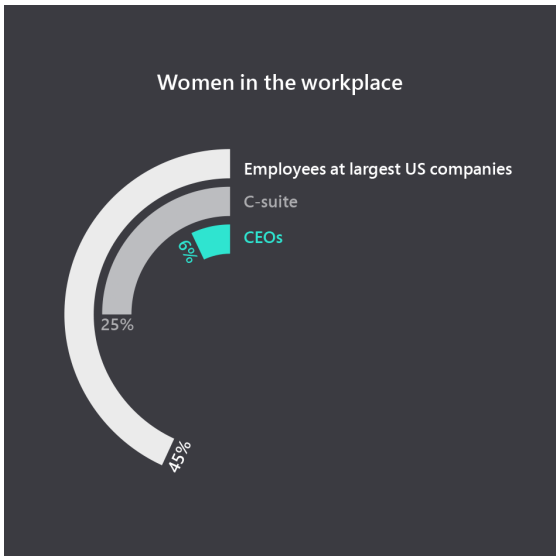
Microsoft is proud to be a leader in sustainability. We have been operating at 100% carbon neutrality since 2012, and even though our data centers are already 100% powered by renewable energy sources, we continue to work to improve our energy sourcing. Additionally, we continue to invest in new energy technology, from biogas to fuel cells, to accelerate the availability of new types of clean energy.

Diversity and inclusion are at the forefront

Data from the 2018 Census indicates that Gen Z is more racially and ethnically diverse than any other generation of Americans.[175] By the year 2045, fewer than half of all Americans will identify as white.[176] The face of the American population is changing, and with it, our expectations of who should occupy positions of influence and authority.

Representation matters, but in the media, the halls of government, and corporate America, change has been sluggish.

A study by UCLA showed that on average, movies and TV shows that feature diverse casts gross more, are more profitable, and get better ratings. Despite the findings, women and minorities are still underrepresented in the cast and crew of television and movie productions.[177] The story is the same in government. As of January 2019, the number of women and minorities in the US Congress is at an all-time high, but both groups are



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underrepresented by about 50% when you consider their share of the overall population.[178]

The stats for the business world are similarly skewed. Despite the fact that women account for 45% of all employees at the nation's largest companies, they occupy just 25% of C-suite positions in the United States, and only 6% of CEOs are women.[179] According to the Alliance for Board Diversity, women and minorities are on track to occupy 40% of all board seats at Fortune 500 and Fortune 100 companies[180], but they lack similar levels of representation among the ranks of executives responsible for day-to-day operations.[181]

Thankfully, that's all changing, albeit slowly. Companies like Accenture, Diageo, Medtronic, and Gap have each attracted attention for their recent efforts to ensure that women and minorities are better represented at all levels of their organizations.[182] Goldman Sachs has also generated waves for its efforts to become more diverse and inclusive. In March of 2019, the company announced new hiring targets aimed at ensuring that half of all new analysts and entry-level associates—two positions which comprise 70% of the company's new hires each year[183]—would

"Companies with greater levels of diversity reported that 45% of their income came from new products and services, compared to only 25% at less diverse firms."

be women, 14% would be Latinx, and 11% would be black. CEO David Solomon has also said that the company has goals to recruit more members of the LGBTQ, veteran, and disabled communities.[184] The new policy is a laudable effort to increase diversity in a notoriously male-dominated industry, and the bank has made it clear that these are more than vanity targets. Solomon has indicated that managers' pay increases and promotions will be partly contingent on their ability to make progress toward the firm's diversity goals.[185]

Other companies should take note, as there is substantial financial justification for pursuing workplace diversity. A study by BCG found that companies with above-average levels of diversity in their senior leadership experienced 9% greater EBIT than companies with more homogenous leadership teams. In addition, BCG discovered a strong correlation between diverse leadership and innovation. Companies with greater levels of diversity reported that 45% of their income came from new products and services, compared to only 25% at less diverse firms.[186] Similarly, a 2018 study by the International Monetary Fund found that the presence of women on the boards of banks was associated with greater stability and improved ability to weather stress.[187]

Digital ethics (consumer privacy) approaches a tipping point

Every digital interaction leaves a trail of some sort. With so much information available in the global data universe, and much of it potentially sensitive, companies around the world are grappling with how best to use and protect the data entrusted to them by their customers.

3,813 data breaches were reported in the first six months of 2019, impacting more than 4.1 billion records, an increase of more than 50% compared to the same period in 2018. Three of those breaches rank among the ten largest data breaches ever.[188]

While data breaches remain a persistent and costly threat for companies and consumers alike when it comes to data, there's another question weighing on the minds of CIOs and CFOs around the world. One of the biggest issues facing corporations today is fair and appropriate use of data. What types of customer data is it okay for companies to seek, gather, and keep? Does it matter how the company is using the data? Does the greater access to customer data that large companies possess give those companies an inherently unfair advantage over smaller businesses? Can companies be trusted to make impartial decisions with personal data? What information is fair game, and what's off-limits? And who gets to decide?

In the first six months of 2019

3,813
Data breaches

4.1B
Records impacted

50%
Increase over same period of 2018

While companies have historically had a fair amount of latitude when it comes to setting and enforcing their own data privacy policies, a wave of new legislation may take those decisions out of companies' hands. Currently, more than 80 countries around the world have enacted comprehensive data protection laws. Here in the US, California passed the California Consumer Privacy Act in 2018, and several other states are now considering legislation of their own. GDPR is already forcing companies based outside the EU to rethink how they handle consumer data, regardless of where those consumers reside.[189] In May 2019, Google announced a new autodelete feature that will allow users to adjust their Google settings to automatically delete app, web browsing, and location history once every three or 18 months.[190] This move was likely in response to a 50 million euro fine imposed by data protection authorities in France over what they deemed a lack of transparency and insufficient justification for processing user data for advertising reasons.[191]

The issues surrounding data privacy only become more complicated when it comes to third-party apps that access data via an API. Through the Amazon Marketplace App Store, Amazon sellers can purchase third-party apps that use data from the Amazon Marketplace Web Services APIs to help them run their stores. However, at least some of these apps appear to disregard the company's data protection policy, and Amazon has begun cracking down on violators and rescinding their access to customer data. In one example, ZonTracker used customer data to allow Amazon sellers to create ads on Facebook that would target both existing customers as well as similar audiences using Facebook's Lookalike Audience tool. To exert tighter control over the apps its sellers use, Amazon has since instituted a new policy stating that any developer who creates apps using Amazon Marketplace Web Services APIs must apply to list their apps in the Marketplace Appstore.[192]

With so much uncertainty surrounding future legislation as well as the risk of exposure due to data breaches, the smartest thing a company can do is to adopt a proactive stance towards data protection. For companies looking to incorporate data security into their business in a sustainable way, Privacy by Design (PbD) offers one potential path forward. PbD is a framework that originated with the Information and Privacy Commissioner of Ontario, the Dutch Data Protection Authority, and the Netherlands Organization for Applied Scientific Research and which was subsequently adopted by the International Assembly of Privacy Commissioners and Data Protection Authorities.[193] The framework aims to build privacy into the way that companies build, operate, and maintain the systems, processes, and products that they create.[194]

PbD Framework

1. Proactively protect customers' privacy, instead of only reacting when there's been a breach or other problem.

2. Extend privacy as the default, without requiring action from the customer.

3. Incorporate privacy into the initial design process, not as an afterthought.

4. Ensure full privacy without compromising functionality.

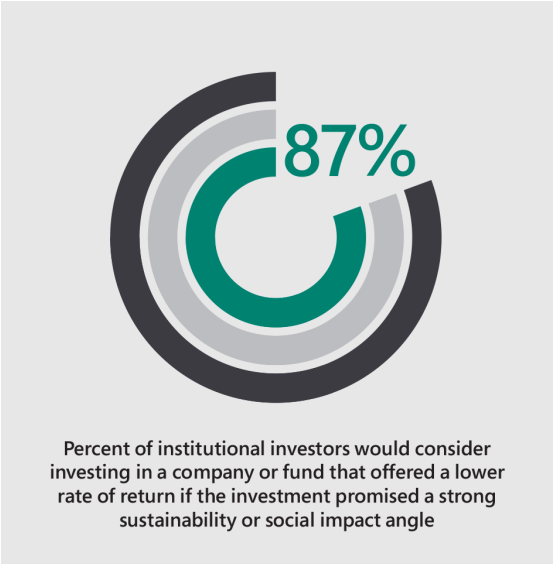
5. Observe end-to-end security and destroy data when no longer needed.

6. Communicate security measures to stakeholders, and ensure that there's a way to independently verify compliance.

7. Maintain clear and user-friendly communication with customers about privacy policies.

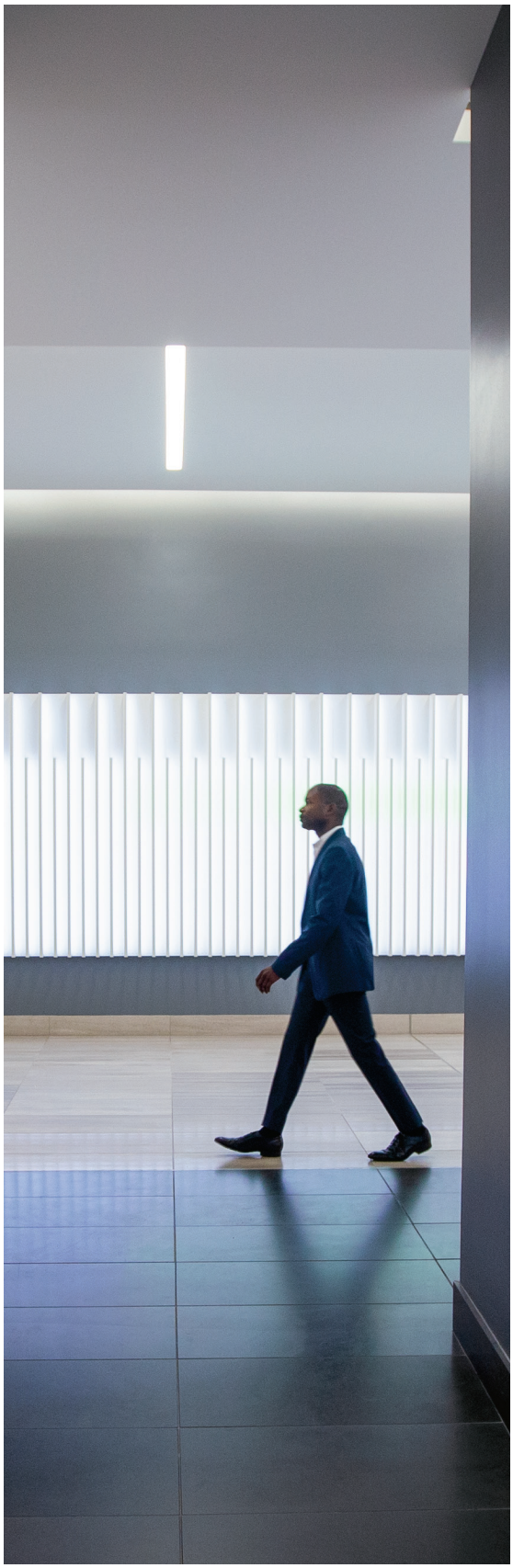
Shareholders demand greater transparency and better stewardship

In recent years, shareholders have become more vocal about what they expect from a company—beyond profits. A special edition of Edelman's Trust Barometer focused on institutional investors revealed that 98% of investors believe that companies have an obligation to address societal issues—such as cybersecurity, income inequality, workplace diversity, national security, and immigration—to maintain a stable global business environment.[195] A second survey conducted by Edelman showed that 87% of institutional investors would consider investing in a company or fund that offered a lower rate of return if the investment promised a strong sustainability or social impact angle.[196]



Percent of institutional investors would consider investing in a company or fund that offered a lower rate of return if the investment promised a strong sustainability or social impact angle

It seems that individual shareholders concur. In 2018, investors demanded greater transparency from Nike about its political spending (contributions to political campaigns, funding of direct or indirect lobbying efforts, and financial support for organizations involved in legislation design). Nike, which already discloses some information about its political spending, pushed back against the request, saying that further disclosures could compromise the company's market strategy.[197] In March 2019, nearly a third of shareholders voted in favor of a resolution that would require Northrop Grumman to detail what the company is doing to uphold its human rights policy. The resolution was prompted by Northrup Grumman's work on a Department of Homeland Security contract designed to capture biometric and other personal data.[198] At Alphabet, shareholders introduced 14 different proposals demanding transparency and accountability on a range of issues, including the human



rights impacts of Google's policies in China, executive compensation, diversity and inclusion targets, sustainability goals, and concerns over the power that the company's executives wield. While all of the proposals were rejected, their introduction underscores a growing expectation among employees and other shareholders that the global tech firm uses its reach and influence for good.[199]

Across industries and issues, shareholders expect more from the companies they own. If the Business Roundtable's new stance on public companies' responsibility to society is any indication, the business world is taking notice. That said, the dawning age of enlightened, socially responsible organizations isn't entirely free of hazards. Experts warn that if shareholder value is no longer the primary measure of success, companies need to be clear on what values they do stand for, or else they risk being swayed by whichever activist group vies loudest for their attention.[200]

"The corporate world has reached a tipping point when it comes to values."

Reputation management becomes more complicated in the social media era

As we've explored previously in this report, the public is holding companies to a higher standard than ever before. Increasingly, consumers expect companies to be responsible corporate citizens, to speak up about social issues, and to ensure that their operations have a positive impact on customers, employees, suppliers, the environment, and society as a whole. Even if a company is doing all the right things, it can be challenging to create the public perception of good stewardship. In an age where anyone with an internet connection can create a message or image that could potentially go viral, it's nearly impossible for companies to be the sole (or even primary) authors of their brand image. Companies' attempts to shape public perception of their brands usually takes one of two forms: proactive communications, including corporate social responsibility (CSR) programs and other marketing efforts, and reactive communications, most often in the form of crisis communications plans.

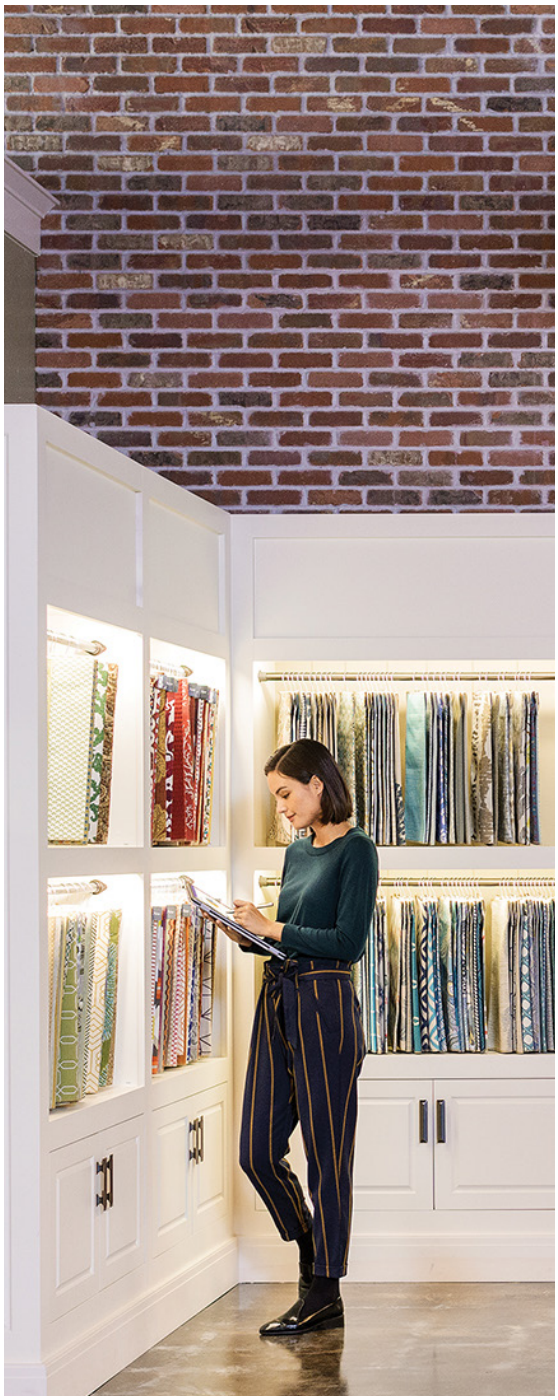
CSR is nothing new, but judging by the Business Roundtable's September 2019 statement, the corporate world has reached a tipping point when it comes to values. Today, more and more companies are attempting to inject purpose into their businesses. The challenge is to do so in a way that's both genuine and relevant—and which doesn't come across as "purpose-washing," as the PR industry publication PRWeek terms it. In October 2019, PRWeek announced the inaugural edition of its Purpose Awards, which recognizes organizations that are creatively and

authentically driving change around a positive cause.[201] Among the initial round of winners were Etsy (for its carbon offset campaign), Procter & Gamble (for its initiatives around changing table equality and access to feminine hygiene products), PepsiCo Foundation (recycling), Luna Bar (equal pay), Gillette (redefining masculinity), Aflac (pediatric cancer), WNBA (support for women-focused nonprofits), and Heineken (drunk driving). In each of these cases, the initiatives worked both because they were well aligned with the company's business and with customers' expectations of the brand and because they appeared to stem from a genuine desire to make a difference.

Crisis communications is a sub-specialty of public relations that focuses on how companies respond in the event of an emergency. While companies can't plan for the unknown, they can establish processes that dictate what steps will be taken in the event of a crisis and who will be responsible for communicating to the public, the media, and other stakeholders. One company that recently demonstrated both calm under pressure and sterling character amid a crisis is Southwest Airlines. Following a 2018 flight during which an engine explosion killed one passenger and necessitated an emergency landing, Southwest's handling

of the difficult and frightening event, both during the flight and afterward, resulted in a surge of positive press and goodwill towards the brand.[202]

What if a crisis isn't due to an accident or a corporate misstep, but to customers' deliberate misuse of a product? That was the situation that Procter & Gamble faced in 2018 when teenagers filmed themselves eating detergent packs as part of a viral challenge. In response, the company issued a firm but humorous response on social media, following it up with a series of media interviews. Procter & Gamble also successfully convinced both YouTube and Facebook to remove all videos of detergent-eating teens.[203]



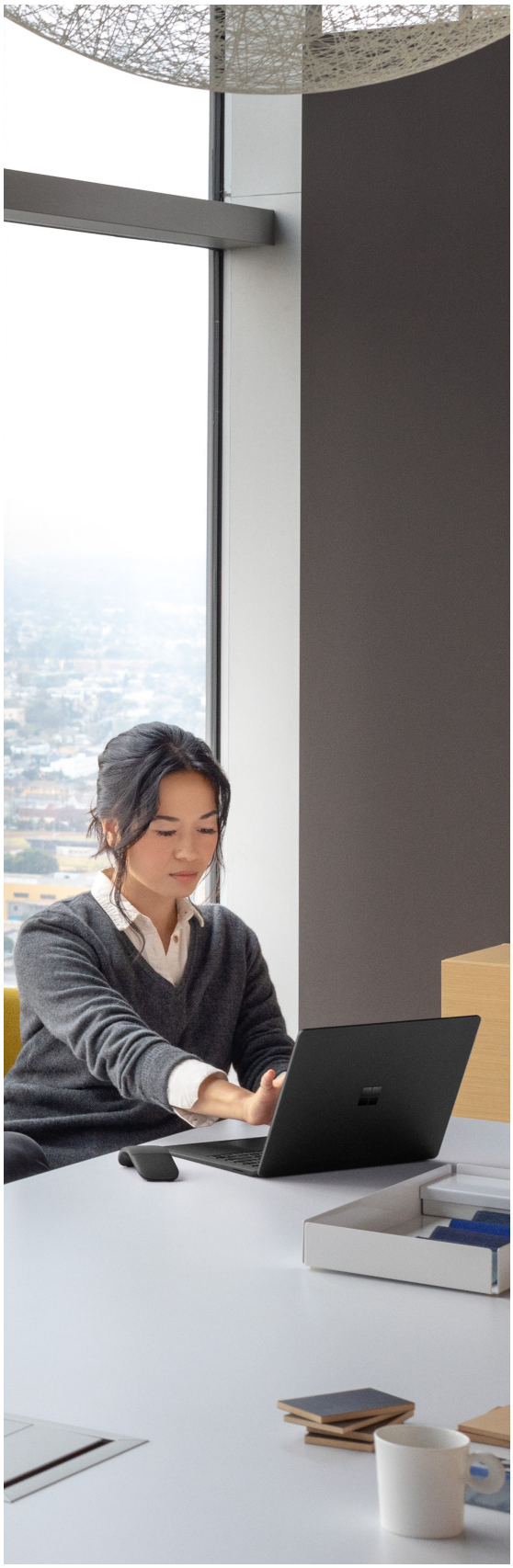
The gig economy complicates employee/employer relationships

New technologies are enabling innovation and growth in alternative work arrangements in the US and around the world, but those innovations are also raising legal and ethical questions about the relationships between companies and the people who do work for or through them.

Alternative work arrangements now encompass an array of employment situations, from independent contracting and freelancing to so-called gig workers, who are paid by the task, and even outsourced networks known as crowds. These roles can be hard to define and even harder to measure, but surveys and economists' estimates suggest that alternative workers' share of overall employment is growing, not only in wealthy countries but also—maybe even especially—in emerging economies. In 2017, the US Bureau of Labor Statistics conducted its first survey on alternative work arrangements in more than a decade, and, to the surprise of many, it estimated that

less than 4% of the US workforce counted as what it calls contingent employees.[204] Around the same time, however, a survey commissioned by Upwork and Freelancers Union estimated that roughly one in three working Americans, some 55 million people, were freelancing. Many of those freelancers were working as independent contractors, but many others were blending traditional and non-traditional work arrangements through moonlighting, "side hustles," and other combinations of traditional and freelance or gig work.[205] Meanwhile, in some parts of Europe, growth in freelance employment has outpaced growth in overall employment in recent years.[206]

The expansion of these alternative employment arrangements and the new platforms enabling them is forcing employers, workers, and regulators to revisit old questions about the nature and ethics of employment, and to confront some new ones, too. Among the most important issues are who should count as an employee, and what obligations does a company have to people it pays to work?



In April 2018, the California Supreme Court ruled that a worker should be considered an employee if he or she does work that is part of a company's "usual course" of business, and that companies wishing to classify workers as independent operators must show that they really don't control or direct those workers' actions. This decision was significant because it implied that companies like Uber, which depends heavily on alternative employment arrangements, would eventually have to comply with minimum-wage and overtime laws and other regulations that could significantly increase their operating costs.[207] In September 2019, California's State Assembly codified that court ruling with the passage of a new bill that supporters hailed as an important step toward protecting workers and some detractors criticized as an innovation killer.[208]

Businesses confront the human impact and ethics of artificial intelligence

Many organizations are now turning to AI in an attempt to lower operating costs, inform decision-making, and discover new profit centers, among other things. These efforts are driving rapid growth in the adoption of AI, but the rush to adopt and apply these new technologies is also heightening concerns about the risk of unintended consequences and the ethics of algorithmic judgment and decision-making.

> "Algorithms may be impartial, but they are built by humans, and the choices made in the development and application of those algorithms are often complex and subjective."

Most current applications of artificial intelligence use algorithms—sets of rules for converting information into relevant outputs—to perform time-consuming or challenging repetitive tasks like pattern recognition, document classification, object detection, and forecasting. Algorithms may be impartial, but they are built by humans, and the choices made in the development and application of those algorithms are often complex and subjective.

Bias can enter the process at every step, including the choice of which problems to solve, the identification of features to consider, the selection of training data, and the use of the output. AI systems can also exacerbate concerns about the privacy and security of customer data, and they raise new questions about who bears responsibility when software makes or drives choices that have undesirable consequences.

Many businesses and governments are trying to mitigate these risks by establishing—and, ideally, following—guidelines for the ethical use of AI. In late 2018, the European Union published a first

draft of its guidelines for "trustworthy" AI that identified seven requirements all AI systems should meet, including transparency, non-discrimination, accountability, safety, human oversight, and respect for privacy.[209] These requirements echo the themes spelled out by corporations such as Google[210] and Microsoft[211] in the principles guiding their development and application of AI.

Some organizations are also looking to do the right thing by sharing or applying their AI expertise for social good. In a late 2018 discussion paper, McKinsey compiled a library of 160 AI social-impact use cases ranging from tracking wildlife poachers to aiding disaster relief. It observed ongoing efforts in about one-third of those cases and concluded that existing AI capabilities had the potential to improve the lives of hundreds of millions of people in both wealthy and developing countries.[212] - -

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Our inclusive design principles

Exclusion happens when we solve problems using our own biases. As Microsoft designers, we seek out those exclusions and use them as opportunities to create new ideas and inclusive designs. There are 7.4 billion people in the world. Our ambition is to create products that are physically, cognitively, and emotionally appropriate for each of them. It starts with seeing human diversity as a resource for better designs. When it comes to people, there's no such thing as "normal." The interactions we design with technology depend heavily on what we can see, hear, say, and touch. Assuming all those senses and abilities are fully-enabled all the time creates the potential to ignore much of the range of humanity.

Recognize exclusion
Designing for inclusivity not only opens up our products and services to more people; it also reflects how people really are. All humans grow and adapt to the world around them, and we want our designs to reflect that.

Solve for one, extend to many
Everyone has abilities and limits to those abilities. Designing for people with permanent disabilities actually results in designs that benefit people universally. Constraints are a beautiful thing.

Learn from diversity
Human beings are the real experts in adapting to diversity. Inclusive design puts people in the center from the very start of the process, and those fresh, diverse perspectives are the key to true insight.

Maximize financial visibility and profitability

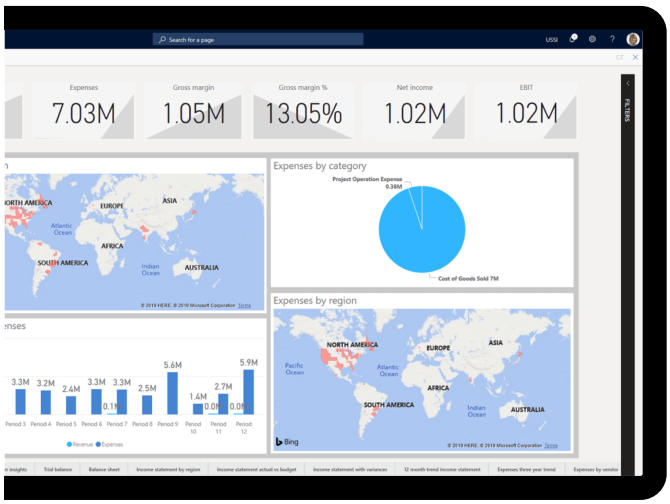
Automate and modernize your global financial operations with Dynamics 365 Finance. Monitor performance in real-time, predict future outcomes, and make data-driven decisions to drive business growth.

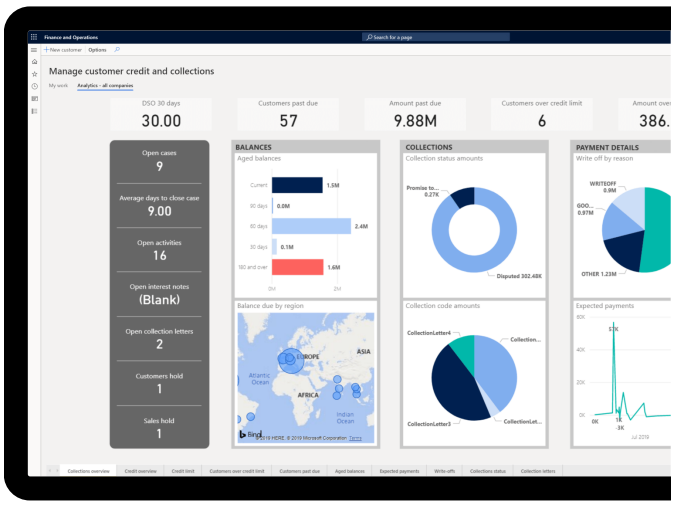
Finance

Microsoft Dynamics 365 Finance is Microsoft's financial management business application that enables medium-sized and enterprise organizations to monitor the performance of global financial operations in real-time, predict future outcomes, and make data-driven decisions to drive growth. It empowers users to do business anywhere, anytime, with an intuitive user-interface personalized for their role and preferences.

Drive strategic decisions with AI

Assess the health of your business, improve financial controls, optimize cash flow, and make strategic decisions faster to drive growth by using real-time, unified global financial reporting, embedded analytics, and predictive insights.





Unify and automate your financial processes

Integrate and automate your core business processes with financials to maximize user productivity and financial performance.

Reduce global financial complexity and risk

Quickly adapt to changing financial requirements with a rules-based chart of accounts and a no-code configuration service that simplifies regulatory and tax reporting, e-invoicing, and payments.

How Microsoft can empower your business

01 / Unified data, intelligence everywhere	Azure IoT Hub, Cognitive Services, Dynamics 365 Platform, Customer Insights, Power Platform, Cognitive Insights, Azure, IoT Intelligence, Artificial Intelligence, Process automation
02 / The CFO's role and workforce evolve	LinkedIn Talent Solutions, Human Resource Management, Office 365, SharePoint, Workforce management, Microsoft Teams, Power BI, Time and Attendance, Power Platform, Workspaces, Excel
03 / Customer experience becomes a top priority	Dynamics 365 Platform, Process automation, Artificial Intelligence, PowerApps, Procurement and sourcing, Dynamics 365 Commerce, AppSource, Customer Insights, Cognitive Services, Bot Services
04 / Intelligent technology powers finance operations	IoT Intelligence, Dynamics 365 Platform, Inter-company accounting, Demand forecasting, Budget planning and control, AI-builder, General ledger, Cognitive Services, Financial reporting
05 / Fintech emerges as a major opportunity	Azure, GitHub, Virtual Machines, Power Platform, AppSource, AI-builder, Machine Learning, Blockchain Service, Digital twins, Visual Studio, Cognitive Services, Budgeting and cost control
06 / Business models get redefined	Dynamics 365 Platform, Virtual Machines, Project accounting, Azure, Xamarin, Vendor collaboration, GitHub, Workspaces, Visual Studio, Power Platform, Dynamics 365 Customer Service
07 / Businesses adapt to global uncertainty	Dynamics 365 Platform, Master planning, Blockchain Service, Azure Active Directory, Office 365, Country-specific capabilities, Power Platform, SharePoint, Microsoft Teams, Azure
08 / Businesses place a renewed focus on ethics	Blockchain Service, HoloLens, Workforce management, Mixed reality, Azure Active Directory, Cognitive Services, LinkedIn Talent Solutions, Azure, Compliance and internal controls

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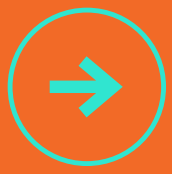

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