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PUTTING TRUST TO WORK

Decoding Organizational DNA: Trust, Data and Unlocking Value in the Digital Workplace

INTO
THE NEW

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Trust Pays Dividends

Companies are waking up to an untapped source of business growth: vast amounts of new data on work and the workforce that can unlock the potential of their people. This data—now available through a range of digital innovations—is both a goldmine and a minefield.

On one hand, value as far as the eye can see: Employees who are more motivated, engaged and highly productive. On the other, the potential for misuse of data: individual rights ignored, employment wrongfully terminated and employees' skills underutilized. Yet another CEO issue? Absolutely. If businesses don't use this data responsibly, they risk losing the trust of their employees, and, as a result, more than 6 percent of future revenue

growth. But if they adopt responsible strategies, the trust dividend would be worth more than a 6 percent increase in future revenue growth. Ultimately, up to 12.5 percent of revenue growth is at stake.[1] Is there a clear path through this rough terrain? Here we present an approach to help leaders use this data to "decode organizational DNA" responsibly—driving value while earning the trust of employees, investors and society as a whole.

As people and intelligent technologies increasingly interact, they leave an ever-expanding digital trail of work—such as the algorithms that judge the quality of a software developer's code; the distance a driver has covered and her route; how many products a worker has assembled; and how people are spending their time, and with whom.

This newly available data flows in real time, helping a company grow the business, become more agile and efficient and unlock employees' full potential.

Leaders Say New Sources of
Workplace Data Can Help...

77%

Grow the Business

76%

**Transform the Business for
Agility and Efficiency**

74%

**Unlock the Full Potential
of People**

What is Decoding Organizational DNA?

With the advent of new technologies, leaders have unprecedented visibility into people and their work. Data can now be mined from a variety of new sources—including employee work applications like email, calendars or social collaboration tools; smart sensors embedded in the workplace; video or voice recordings; or employer-provided devices like wearables, cell phones or computers—and then converted into insights, decisions or automated actions by applying analytics, artificial intelligence or human judgment.

This data about people and their work help reveal the DNA of the organization, enabling its leaders to better understand how and why it works and what makes it tick. Untapped organizational data covers work processes, the performance of people and, increasingly, the way they collaborate with intelligent machines. It has the power to improve everything from innovation to agility to cybersecurity to employee performance and engagement. As with the human genome, companies must learn to decode it, and then to use it for the benefit of companies, their employees and society as a whole.

See Appendix: Unlocking the Value of Workplace Data, page 49 for more detail.

Leaders see the opportunity.

91 percent of the 1,400 C-level business leaders we surveyed in 13 major economies recognize that new technologies and sources of workplace data can be used to unlock value that is currently "trapped" in the enterprise. *(See Appendix: Unlocking the Value of Workplace Data, page 49)*.

And the majority of organizations (62 percent) are already using new sources of workplace data to a large or significant extent.

The problem?

Only 30 percent of leaders are very confident that their organization uses workplace data responsibly.

Workers understand the power and potential as well. Almost 60 percent of the 10,000 employees we surveyed say they believe workforce data will improve their lives and performance, with employees in India, China and Brazil expecting more improvement than those in European countries. *(See Sidebar: Attitudes Toward New Sources of Workplace Data Vary by Country, page 22)*.

Employee openness to the use of workforce data comes with a caveat, however: 92 percent said they would be willing to let their employers collect and use data on them and their work, but only if they benefited in some way. This belief does not vary much by country.[2]

62%
of businesses are using new technologies and sources of workforce data today

but only 30%
of all business leaders are very confident that they are using new sources of workforce data in a highly responsible way.

92%
of workers are open to the collection of data about them and their work, but only if it improves their performance or wellbeing or provides other personal benefits.

But employees harbor serious concerns about fairness, ethics, personal privacy and the impact on society. *(See Figure 1).*

For example:

Will employers use the data the right way?

Will employers "spy" on their every move?

Will the data collected about them accurately represent their performance—or turn them into a commodity or a mere number?

Will algorithms in the workplace perpetuate bias?

These concerns should come as no surprise to leaders in the wake of recent data scandals.

Most companies now recognize the need for greater responsibility when it comes to the use of customer data and technology, but most have yet to pay equal attention to the ethical and responsibility issues arising from workplace data and technologies.

Unless they earn the trust of employees, employers won't have as much data to mine.

If employees believe their organization is not responsibly using new technologies and workplace data in a way that builds trust, 63 percent would refuse to give permission for their data to be collected on themselves or their work.

As these concerns mount, leaders must work proactively to overcome them. The way to do that: Earn the trust of your people.

"

Responsible leadership and two-way trust between leaders and their people go hand in hand. When this foundation is laid, you can unlock the value of the massive amount of data that is lying dormant and untapped in organizations today. By leveraging this data, we can provide employees with a more efficient and safer working environment to drive greater agility, growth and innovation."

Isabelle Kocher, Chief Executive Officer, Engie

Figure 1: Employees Are Concerned About the Use of Data in the Workplace

Recent scandals about the misuse of consumer data have made me concerned that my employee data could be misused
64%

I am worried that my sensitive data may be prone to cyberattacks
61%

I am worried that the use of workforce data will help my organization treat me more as a unit of production than as an individual human
59%

I am worried my employer will use newly collected data on me or my work as a form of punishment (e.g. letting me go, not rewarding me, etc.)
55%

I am worried my employer will use technology to spy on my every move
55%

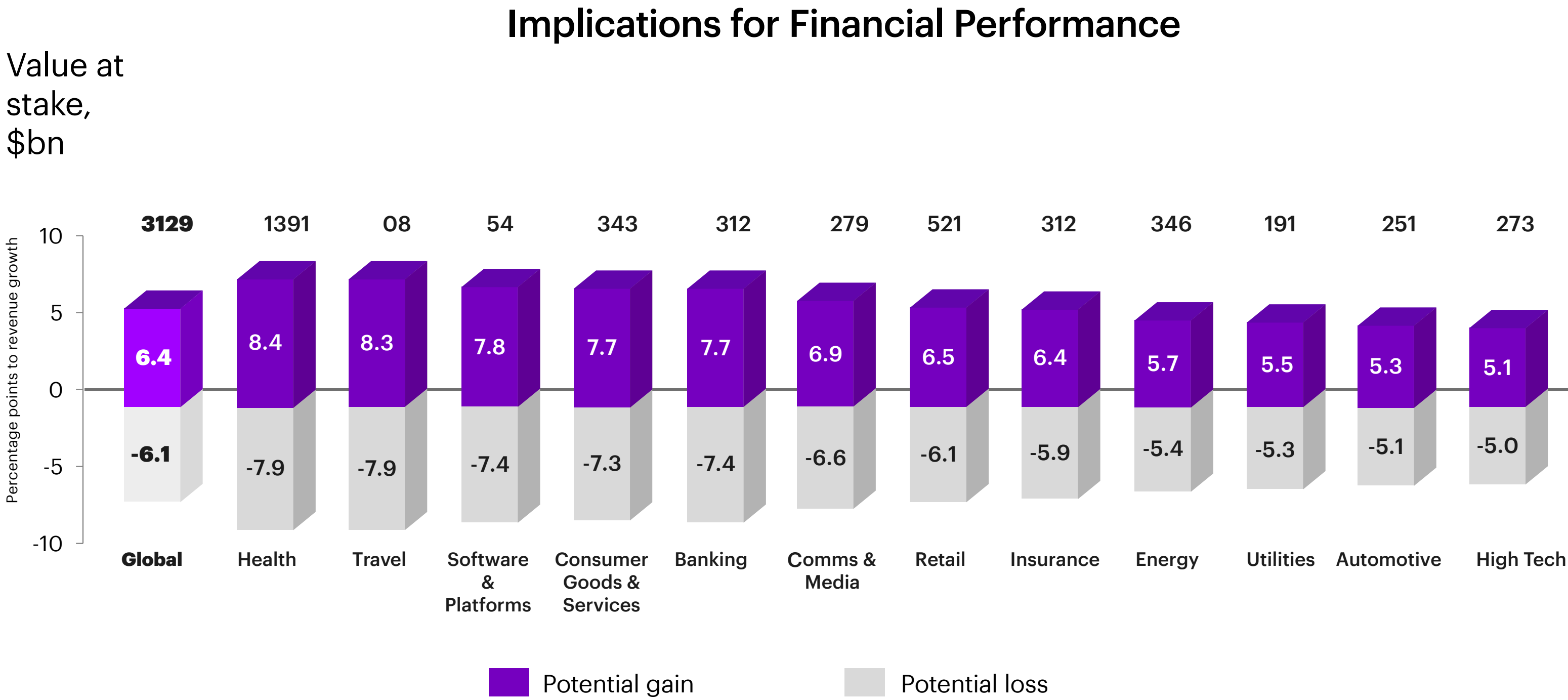I am worried that new technologies will perpetuate bias
50%

Gain Value by Growing Trust

As companies build trust, they will create value—for the business and for employees. Accenture identified the factors that employees say most influence their level of trust in how organizations collect and use workplace data. We have modeled these to reveal the financial impact of failing to decode organizational DNA responsibly. If businesses use workplace data irresponsibly, employee trust is eroded and they risk losing more than 6 percent of future revenue growth. *(See Figure 2)*. But if they adopt responsible strategies, the trust dividend could be worth more than a 6 percent increase in future revenue growth.

That amounts to a 12.5 percent difference in future revenue growth. For the 6,000 largest publicly listed global companies in our research sample, this could equate to more than US$3 trillion. *(see Appendix: About the Research)*.

Implications for Financial Performance

Value at stake, $bn

	Global	Health	Travel	Software & Platforms	Consumer Goods & Services	Banking	Comms & Media	Retail	Insurance	Energy	Utilities	Automotive	High Tech
Value at stake, $bn	3129	1391	08	54	343	312	279	521	312	346	191	251	273
Potential gain	6.4	8.4	8.3	7.8	7.7	7.7	6.9	6.5	6.4	5.7	5.5	5.3	5.1
Potential loss	-6.1	-7.9	-7.9	-7.4	-7.3	-7.4	-6.6	-6.1	-5.9	-5.4	-5.3	-5.1	-5.0

■ Potential gain   ▢ Potential loss

Figure 2: The Trapped Value of Trust: Three Trillion Dollars at Stake

Note: The potential gain is the additional percentage points to annual revenue growth for an average company when using data responsibly in a way that creates employee trust. The potential loss is the percentage points lost from annual revenue growth for an average company when using an irresponsible data strategy in a way that diminishes employee trust. See appendix for the number of companies in the sample.

Source: Accenture Research analysis based on the C-suite and employee surveys conducted for this report, and S&P Capital IQ

# How Hitachi Decodes Organizational DNA to Unleash High Performance

Hitachi is a pioneer in using new sources of workplace data to unleash higher levels of performance, unlocking trapped value in the business and improving the lives of employees. Faced with inflexible business systems operating on a single set of pre-programmed instructions in logistics, Hitachi turned to new sources of data to elevate both agility and productivity. By mining the digital trail of people's routines and actions as they work with technology, Hitachi was able to capture the results of human ingenuity when employees tried new and creative approaches to continuous improvement, or "kaizen." AI now automatically captures the details and outcomes of these new approaches—as well as real-time changes in work conditions and fluctuations in demand—to create self-adapting, flexible work orders. As a result, it achieved an 8 percent boost in productivity.[3]

In manufacturing, workers wear special glasses and armbands to track their eye and hand movements. AI then uses this data to improve operations—making workers safer and more efficient while also improving quality.[4] And many Hitachi employees also now wear smart badges loaded with sensors that collect behavioral data on them 50 times a second; AI then uses this data to suggest ways to improve their happiness (e.g. how to best structure their day).[5] In one test, those sales divisions that strongly adopted the technology not only showed improved levels of happiness, but generated 27 percent more order volume than those divisions that used the technology far less.[6]
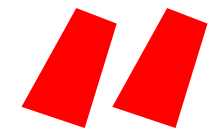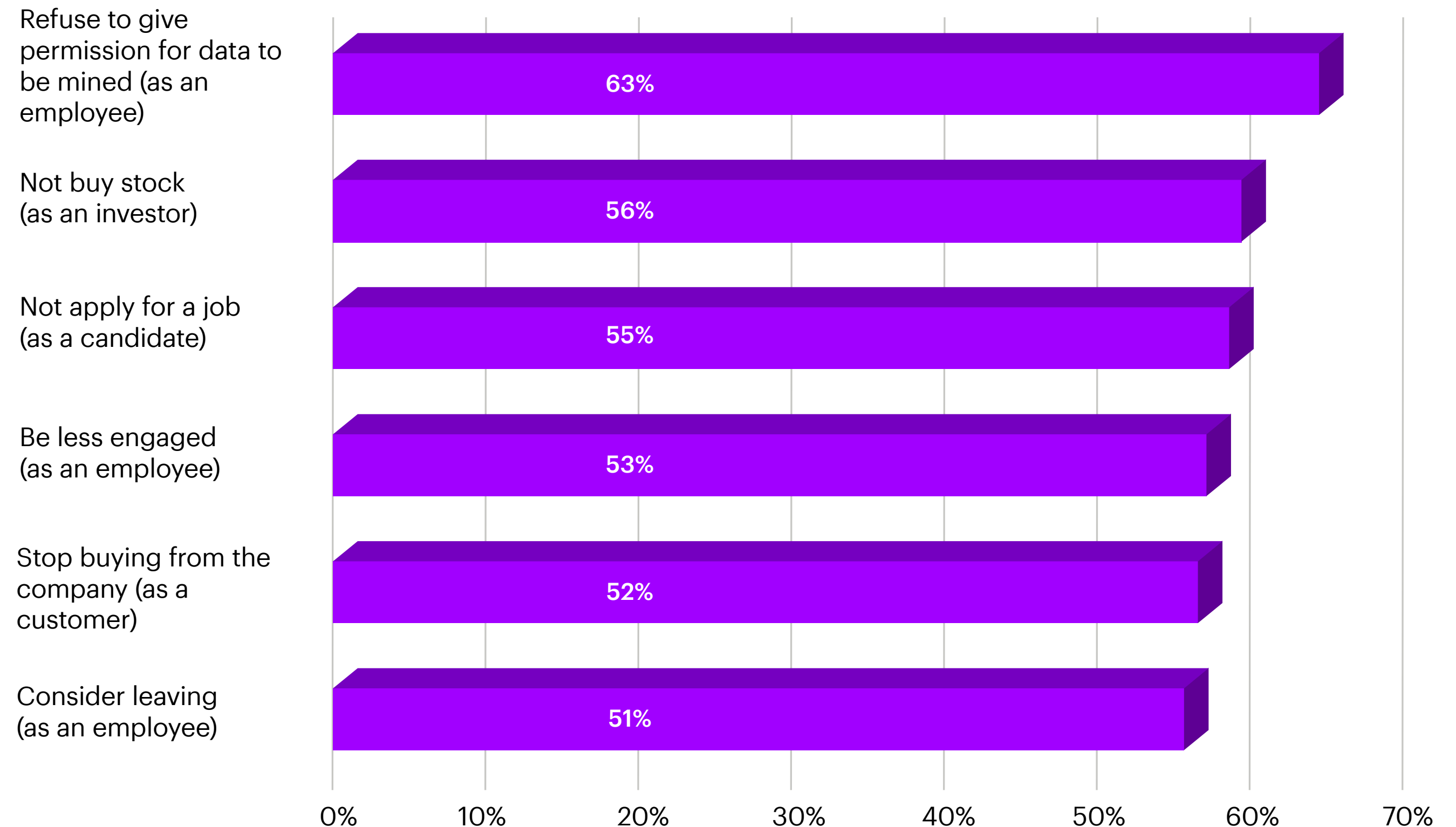
"Organizations are sitting on a wealth of data that, if harnessed, can help them unlock the vast potential of their people and business. A key element is establishing a track record of trust built on ethical, responsible behavior as part of an organization's people strategy. Organizations that have invested in laying this critical foundation have the opportunity to tap into this data, in turn accelerating innovation and creating a workplace that benefits all people."

Diana McKenzie, Chief Information Officer, Workday

If I learned a company wasn't responsibly handling workplace data, I would...

Category	Percentage
Refuse to give permission for data to be mined (as an employee)	63%
Not buy stock (as an investor)	56%
Not apply for a job (as a candidate)	55%
Be less engaged (as an employee)	53%
Stop buying from the company (as a customer)	52%
Consider leaving (as an employee)	51%

Figure 3: Employees Have the Power to Damage a Company's Performance If Data Trust Erodes

How does trust impact a company's performance?

For one thing, it's highly related to remaining attractive to top talent.

51 percent of employees would consider leaving the company if leaders did not responsibly use new technologies and workplace data and, for those outside looking in, 55 percent would refuse to apply for a job at such an organization.

Our research also reveals that 56 percent of people would even refuse to buy company stock as individuals. *(See Figure 3)*.

Most organizations have yet to put in place the right frameworks, policies and systems to ensure they use workplace data in a responsible and ethical way that benefits employees. We have found that companies that move too fast take risks that are dangerous for their company, while those that move too slowly risk their competitive position.

Only about half of senior executives think that existing legislation can adequately steer them to act responsibly.

Faced with a lack of regulatory guidance, 49 percent would use new technologies and sources of workplace data as they see fit, without taking any additional measures for responsibility.

That means companies could lose employees' trust.

The recently published Accenture Strategy Competitive Agility Index shows that losing any stakeholder's trust has a disproportionate impact on competitiveness.[7] *(See Box: The Bottom Line on Trust)*.

But at the other end of the spectrum are companies that are doing very little with new sources of workplace data.

The Bottom Line on Trust

The Accenture Strategy Competitive Agility Index assesses competitiveness by measuring growth, profitability, and sustainability and trust. Sustainability and trust combined comprise a third of a company's Competitive Agility Index score.

54 percent of the 7,000+ companies on the 2018 Accenture Strategy Competitive Agility Index experienced a material drop in trust[8] in the previous two and half years. For a US$30 billion retail company, for example, such a drop could result in US$4 billion loss in future revenues.

Employees are one of six stakeholder groups whose real or perceived change in trust is measured by the Index.

Almost a third of companies (31 percent) are holding back from investing more out of concern for what their employees think.

These organizations are potentially leaving a great deal of value on the table, and risk falling behind competitors in the race to use digital technologies to improve performance.

31%

of business leaders say employee concerns are holding them back from investing in technologies that collect data on people and their work.

49%

say they would use new technologies and workplace data as they see fit, without taking additional measures for responsibility.

So how should companies respond in a responsible and ethical way? They should place trust at the heart of their business strategy, on an equal footing with growth and profitability. Trust matters. How a company does things is as important as what it does. Trust is the currency of the digital age, and transparency builds trust. The path forward? Our research points to a framework of three key actions leaders can take:

Give Control. Gain Trust.

Companies must learn to give more control to employees. In doing so, they will gain the trust they need.

Share Responsibility. Share Benefits.

Business leaders must create a coalition in which leaders share responsibility and accountability for new workplace data and technologies, while seeking input from their people and ultimately sharing the benefits with them.

Elevate People. Use Tech Responsibly.

Organizations must use technology in responsible new ways to elevate people and fix its own unintended consequences.

GIVE CONTROL.
GAIN TRUST.

People are more conscious than ever of how personal data is used and misused. In response to growing pressure, laws and regulations are evolving to give the consumer more control over their data:

They can opt in, opt out, cancel their service and even pursue legal action when a company violates the terms of a contract.

Yet this isn't the case in the workplace.

First, protections of people's work-related data are still years behind that of consumer-related data. By placing proactive attention on responsible use of workplace data now, savvy leaders can potentially avoid many of the issues that have recently put some companies under a harsh spotlight.

Second, despite employees' optimism, the governance of workforce data skews heavily toward the corporation.

Only 32 percent of the employees we surveyed said they are aware of how their company is extracting and using their workplace data today, and actually consented to it.

And 55 percent of business leaders say their companies don't ask for consent.

This is far from surprising: In the U.S., only two states—Delaware and Connecticut—require companies to tell their workers they are collecting data on them with new technologies.[9] But companies don't operate in single states, which creates complexity. Similar requirements from the General Data Protection Regulation (GDPR) at least cover the entirety of the European Union[10] and are inspiring many global companies to adopt similar practices.

How can companies navigate a variable legal landscape and gain the confidence of their employees?

Give to Get

If leaders want access to valuable data, they will need to forge a new "give to get" relationship with employees, and share more control with them over their own data. 70 percent of employees say that in return for their permission to collect data, they expect employers to give them more control over their own data. Transparency builds trust too; nearly the same proportion (71 percent) of employees say that they will only be willing to let their employer collect data on them if their employer transparently communicates how their data will be used and the benefits they will receive.

By designing in benefits for employees when technology is used to collect data on them, leaders can earn the trust of their people by offering them a bold new

value proposition. 92 percent of employees would be amenable to the use of workforce data if they got something in return. And the more customized the benefits, the better. *(See Figure 4)*. The problem is, less than a quarter (23 percent) of companies are following the "give-to-get" principle every time data is collected.

An exception is digital-operations company BMC Software, which mines employees' work applications—including email and calendar data—to track productivity, but only on an opt-in basis. Employees get personalized feedback on how to improve their time management in exchange for sharing their data. The company benefits by receiving anonymous and aggregated data on the time spent for each project and task,

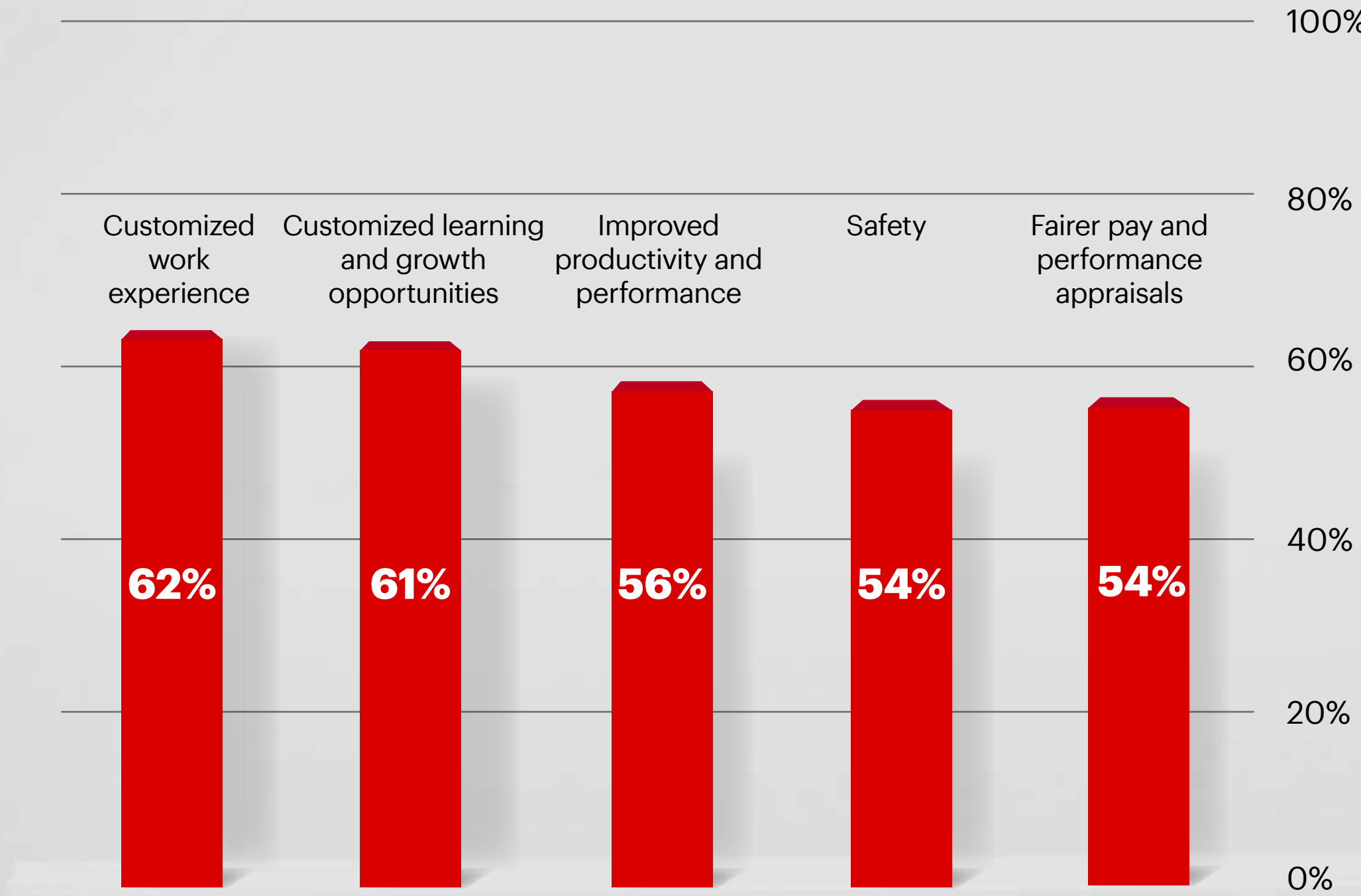## Employees Are Willing to Share Their Data in Exchange for Benefits (top 5 benefits)

Customized work experience	Customized learning and growth opportunities	Improved productivity and performance	Safety	Fairer pay and performance appraisals
62%	61%	56%	54%	54%

Figure 4: Employees Expect Benefits in Exchange for Their Data

relieving workflow bottlenecks and signs of overwork and burnout.[11]

Properly securing consent whenever possible is the best way to engender employees' trust, and the first step in the "give-to-get" process. But it can't just be "uniform consent"—a blanket document filled with legal jargon buried in the employees' contract and likely long-forgotten.

When Health Care Service Corporation (HCSC) asked for consent to monitor employees with Fitbits and remote sensors in an effort to ensure wellness and improve collaboration, for example, it asked each employee and his or her manager to opt in by signing a clearly worded memorandum of understanding. This encouraged conversation and outlined the benefits of participation.

Companies cannot always ask for consent, however. Most financial services companies, for instance, are required by law to track emails

to prevent employee misconduct. But obtaining genuine consent whenever possible—although more complex to manage—can pay high dividends when it comes to elevating the trust of employees.

Companies should also create a single place for employees to see, manage and even delete the data their employer has collected about them. Telstra, Australia's largest telecommunications company, maintains an internal site called MyCareer that allows workers to keep and update their own career data, and even challenge any incorrect or incomplete inputs.

"As an employer, we should allow employees to be able to manage aspects of their data and for it to be a joint exercise," says Telstra's David Burns, Global Business Services Group Executive.

To encourage greater transparency regarding the collection and use of data, organizations can use new advances in technology like

blockchain to let people see what data has been collected about them, how it is being used and where it has gone. Using the technology, organizations could also let people specify who can (or cannot) have access to their data.
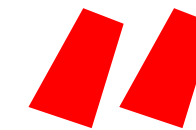
As humans and smart machines increasingly interact, they create a digital trail of their work, capabilities, learning and achievements. Properly managed and shared, this is a potential goldmine for leaders and workers—helping to enhance decisions about people and work. It has the potential to unlock higher levels of productivity, agility, performance, transparency and empowerment."

John Boudreau, Professor and Research Director at the University of Southern California's Marshall School of Business and Center for Effective Organizations

Co-own Data with Employees

With the emergence of new technologies, leaders are faced with an entirely new set of questions. They must decide whether to use new capabilities enabled by blockchain, for example, to let employees own some of their work-related personal data—allowing them to share relevant and verified information with employers quickly and at their discretion.

Almost three quarters (73 percent) of employees want to own their personal work-related data and take it with them when they leave an organization, but few organizations allow it today.

Yet it's encouraging that 56 percent of business leaders we surveyed are open to the idea.

Some leaders in the business community are now advocating that employees should be able to own some of their data by using blockchain, thereby making data portable.

With blockchain platforms like Jobeum and Aworker, for example, a salesperson can now own some of her own data—and can provide a prospective employer with verified, accurate data on her work experiences, sales figures, and even results from internal skills assessments. In the past, this data might have been owned and controlled solely by her employer. But with the advancement of new technologies, she can own part of this data—and control what she shares, and with whom.

73%

of workers want to own their personal work-related data and take it with them when they leave.

56%

of business leaders are open to the idea.

Companies can still decide what they let employees own and share, however.

Consider how Airbus is letting pilots use their own training certificate data. With air traffic set to double in the next 20 years, the aviation industry must train more than 500,000 pilots to meet the demand.

Currently, there's no universal system in which every pilot's data and qualifications are accessible and verifiable by every airline.

So, Airbus has developed a proof of concept to use the blockchain to enable pilots to share their own verified pilot-training certificates.[12]

Those who advocate for data portability argue that for employees, the ability to own some of their work-related data and share it through blockchain creates a kind of *value passport*, enabling them to be hired more quickly and be better matched to optimal opportunities. In the future with blockchain, employees could also create a "personal data file" that could be plugged into personal people analytics solutions (e.g. for career advice) or even sold to providers who are looking to analyze and use longitudinal people data.

Already, people can sell their personal career profiles to recruiters, monetizing their own data.

Advocates also argue that as data is no longer lost when people leave an organization, employers benefit, too, from access to far more complete, verified and trustworthy information about a new candidate's training, skills-assessment, promotions and productivity.

In turn, this creates a more transparent and efficient labor market.

Most legislation is built for the 20th Century, and we are still living with that set of regulations. It is time to update it to protect workers' rights in the digital age— including data ownership, privacy and the right to consent."

Thomas Kochan, George M. Bunker Professor at the MIT Sloan School of Management and Co-director of the Institute for Work and Employment Research

The Human Blockchain at Work

Like millions of people worldwide, many employees at the Accenture Delivery Center in Bangalore use rideshare services to commute to and from work. With flexible shifts, these trips often take place late in the evening. This elevated safety concerns, particularly for women.

As part of its commitment to the wellbeing of its workforce, Accenture is piloting Safedrive to ensure the safety of Accenture employees. Leveraging our work in digital identity, blockchain and biometrics, we collaborated with Betterplace, a local company providing comprehensive background checks for contract drivers that authenticates the driver's identity and background clearance before passengers enter the car. When picking up an employee, the driver takes a photo of themselves, which is verified through facial-recognition software and matched with their validated background data.

The driver owns their data and can download it into a "digital identity wallet." The driver can then share it with Accenture or other potential employers using a "key" that unlocks data stored in the individual's wallet, or in the Betterplace database. This potentially negates the need for duplicate background checks with future employers or other third parties. To ensure background checks are up-to-date, the key must be renewed every six months.

This example shows how blockchain is enabling employees to co-own and co-manage their own identity data and build a strong history of trust. All sides and the wider ecosystem benefit.

Protect Privacy—Together

According to our research, preventing security breaches of employee data is one of the most important factors that builds people's trust in their employers.

But it's also crucial to keep employee data private within an organization. 58 percent of employees we surveyed said they would refuse data-collection activities if their personal data was not kept private when the expectation was for the company to do so. That's why leaders should involve employees in creating privacy rules, letting them have a say in determining who sees what, when, where, and in what context. And pay attention to how sensitivities to privacy can vary by country. *(See Sidebar)*.

Attitudes Toward New Sources of Workplace Data Vary by Country

Our research found that people's openness and attitudes toward using technology to collect data on people and work vary significantly by country.

People from European countries, for example, are far less concerned about data misuse than people from the U.S., India, Brazil and China—perhaps reflecting that GDPR is working as intended. Employees in India, Brazil and China are far more convinced of the value of workforce data collection.

Globally, Baby Boomers are far more sensitive about data privacy than Generation Z.

And then there are outliers, like Japan. Japanese employees are far less sensitive to privacy issues, perhaps because their leaders report that they are far more confident that they are using workforce data responsibly.

Employers should maximize the opportunity for individuals to access data about themselves on a "for your eyes only" basis. *(See Figure 5)*.

When it comes to sharing an employee's individual data with the employee's manager, team, or the entire organization, however, leaders should be careful. While employees are open to sharing data about their skills with others throughout the organization, they are far less open to sharing data about their emotions or any kind of data based on their physical movements, location, or information inferred from their physical bodies.

That's why as a general principle, leaders planning to share employee data with the entire organization or even a team manager, should aggregate and anonymize it. This is far from a compromise. Company-wide blasts of aggregated datasets can help everyone understand key metrics—from engagement to productivity to collaboration— and help people collectively decide which key actions they can take to improve performance.

For example, Freddie Mac provides only aggregated data back to managers about their team members regarding how they spend their time, and with whom—collected by mining e-mail and calendar data. The insights help managers improve the way they coach their teams. As a result, Freddie Mac has driven cultural change with managers while improving employee engagement and retention.[13]

The more efficient we can become, the more we can invest in the future of our business. Workplace analytics helps us do that through analyzing how we use our workforce."

Jim Mackey, Executive Vice President and Chief Financial Officer, Freddie Mac[14]
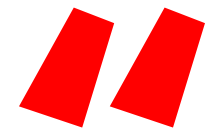
> "
Technology and trust are not sufficient to protect people and their data. We need to develop systems and guarantees allowing people to make reasoned, consensual choices about how their personal data is used, while also ensuring that advantage is not taken of the digital footprints they leave behind inside or outside of work."

Tina George, Global Co-Lead, Delivery Systems, Social Protection and Jobs Global Practice, The World Bank

Employees Say Their Performance, Engagement and Satisfaction at Work Would Improve with Data-Based Feedback About Themselves with Suggestions for Improvement from New Technologies
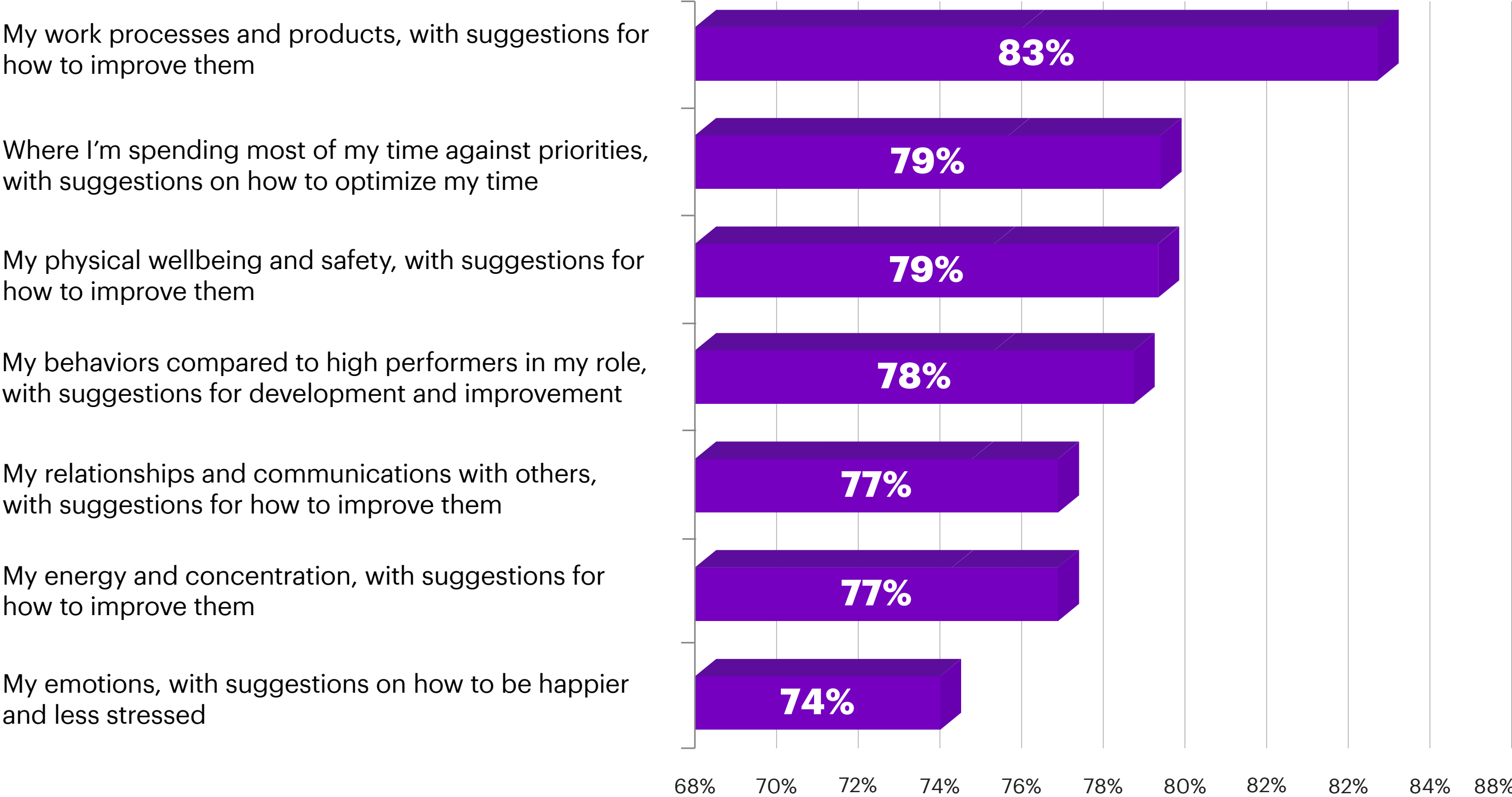
Statement	Value
My work processes and products, with suggestions for how to improve them	83%
Where I'm spending most of my time against priorities, with suggestions on how to optimize my time	79%
My physical wellbeing and safety, with suggestions for how to improve them	79%
My behaviors compared to high performers in my role, with suggestions for development and improvement	78%
My relationships and communications with others, with suggestions for how to improve them	77%
My energy and concentration, with suggestions for how to improve them	77%
My emotions, with suggestions on how to be happier and less stressed	74%

Figure 5: Employees Welcome Auto-Analytics—But for Their Eyes Only

Give Control. Gain Trust:
Next Steps

Give to Get

- Design in benefits for employees

- Secure consent

- Put data management tools in employees' hands

Co-own Data with Employees

- Decide whether to let employees own and share some of their data

- Evaluate the risks and benefits of data sharing and ownership

Protect Privacy

- Co-create fair privacy guidelines with employees

- Embrace auto-analytics

- Aggregate and anonymize data

- Customize data policies based on culture

SHARE
RESPONSIBILITY.
SHARE
BENEFITS.

Create a System of Checks and Balances

It's one thing to earn employee trust. It's another to maintain it over time. This requires sharing responsibility across the C-suite and even beyond the organization—as well as involving employees in the design of the systems themselves.

Building a governance system to ensure responsible use of workplace data and technologies should start at the top, ideally with one accountable C-level executive and an executive coalition. Today that's rare. Only 19 percent of leaders we surveyed say a C-level executive is accountable for ensuring that workplace data and technologies are used in a responsible and ethical way, although a further 48 percent say they are planning to make a C-level executive accountable soon.

A proper framework of checks and balances has several components. First, one C-level executive should be charged with oversight of both customer and employee data. In many cases, that might be the General Counsel or Chief Compliance Officer. Some organizations are even creating new roles such as a Chief Ethics Officer or Chief Data Officer, to ensure that data used to train machine-learning algorithms is both truthful and diverse. At ING, for example, the Chief Data Officer has four key objectives: data availability, data transparency, data quality and data control. Direct reports specialize in a variety of areas—including data ethics and metadata (data that describes other data such as email and calendar entries).[15]

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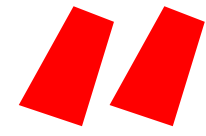
The opportunity, as well as the unintended consequences, that new tech brings can be so complex that there needs to be a broader coalition—across the C-suite and including ecosystem partners that access the data—to provide an 'ethical reset.' Together we need to look beyond the traditional legal issues and focus on the big picture of how tech and data impacts employees, the business and society in a responsible way."

Chad Jerdee, General Counsel and Chief Compliance Officer, Accenture

But because the issues are so complex, the appointed leader must be supported by an executive-level coalition. This group would represent different areas across the C-suite and should involve others in the external ecosystem who might have access to employee data through "as a service" agreements (e.g. software-as-a-service).

Telstra shows how a coalition could work in practice. It uses algorithms to direct technicians driving to customer homes.

It was particularly important to build out the "true value proposition and risks for all stakeholders," says Alex Badenoch, Telstra Group Executive for Transformation and People.

The company built a coalition comprising her role, which brings an employee-relations perspective, the General Counsel, who handles compliance and the Chief Financial Officer, who oversees risk.

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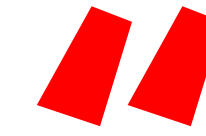
Technology is changing so fast and can have so many unintended consequences that we need to take the time to educate the C-suite and the board on the issues, possibilities and risks."

Alex Badenoch, Group Executive, Transformation and People, Telstra

JPMorgan Chase employs a checks and balances strategy and has multiple groups in place to guide responsible use of technology and data in the workplace. At the C-suite level, Human Resources, Risk and the General Counsel partner together in a "three-legged stool" approach.

Explains Robin Leopold, Chief Human Resources Officer, "Multiple leaders from across these disciplines come together to thoughtfully consider how we balance data insights for business benefit and respect for individuals' privacy— looking through the lens of strategic business resiliency, risk and the ability to elevate our people."

JPMorgan Chase has also created two councils focused on the use of employee data and HR data protection.

Leaders must also go beyond the C-suite and involve the board of the directors. First, investors are demanding greater transparency regarding human capital and workplace practices. The number of company proxies sharing human capital information, for example, is steadily increasing.[16]

Also, new frameworks need to be developed to help board directors ensure management is responding to the strategic opportunities of both workplace and customer data, analytics and AI, as well as its ethical risks. This goes beyond risk, audit, governance and ethics oversight and should also include culture, operating model and competitive strategy.

Business leaders should also consider creating an ethics review board that could not only harness the coalition's diverse insights, but also collaborate with external experts, ethicists and other specialists to proactively address any unintended consequences.

A full 72 percent of leaders believe that ethicists need to be employed to evaluate the impact of workplace technology and data on employees and society, yet only 15 percent have them.

"

AI is developing so fast that putting in place legislation now means it could become quickly outdated. Rather, we need to provide space for exploration as businesses are only beginning to discover how to make use of AI. What Singapore is doing is co-creating a living responsibility framework together with all stakeholders—policy makers, industry leaders, technology providers, companies who use AI and representatives who can speak on behalf of people's needs."

Zee Kin Yeong, Deputy Commissioner at Personal Data Protection Commission of Singapore

Just Because You Can Doesn't Mean You Should

Technologies now allow corporations to track everything from keystrokes to e-mail exchanges to hand movements. Some companies have even gone so far as to offer to embed microchips under people's skin, or monitor their brain waves. But just because you can, should you? The answer is often a difficult trade-off between the greater good and individual rights to privacy.

For instance, some retailers are considering creating a system of video or audio sensors to monitor workers' activities and interactions. Aggregated data patterns help employees learn how to best serve customers.

So, what's more important: improving customer satisfaction or potentially infringing on employees' right to privacy? Or, consider how each year, 2.78 million lives are lost due to work-related stress, accidents or diseases.[17]

Technology could detect and prevent some of these. But is it ethical to use wearables to monitor the stress levels of workers, and to then step in before a breakdown occurs? In response to both of these scenarios, about a third of leaders feel the initiatives are acceptable, a third believe they aren't and a third believe there is no clear answer.

These are difficult decisions that every leader must make. When the data is highly intimate—like data pertaining to employees' bodies, their brain waves, or their emotions—leaders may decide that the best course is to tread carefully, only collecting this type of data if employees embrace it, if the data can be aggregated, and if the greater good far outweighs the infringement on people's privacy. Others, however, may decide to err on the side of caution and decide that the right to privacy is far more important than the value that can be achieved from sharing it, or that some types of data are more acceptable to collect than others.

Co-create Systems with Employees

To many employees, the design of AI or other technology systems that collect and use workplace data can seem like a top-down, outside-in exercise, where human concern and opinion rank behind mathematical formula. In fact, the human viewpoint is crucial to ensuring the systems offer benefits to employees and avoid bias and unfairness in the design and use of technology.

Leaders must first ask themselves: Who is in the room when these new technologies are created and decisions are made about what data will be collected and how it will be used? Too few companies have employees in the room; only 29 percent of leaders say they currently co-create workplace data and AI systems with employees.

Co-creating with employees is important for two primary reasons. First, it can avoid unintended behavioral changes. One insurance firm that monitored production quantity, for example, soon found that the quality of work plummeted.[18]

Including employees from the beginning would have likely helped it to decide which data was appropriate to collect and why.

Second, businesses can design employee benefits into the processes, increasing the willingness of people to share their data. Imagine if an algorithm directing drivers' routes for maximum efficiency could also accommodate scheduling preferences—letting a driver stop at a favorite lunch spot along the way, for example. Any compromise in efficiency would be compensated for by higher levels of employee motivation.

Only 29%

of businesses co-create policies on workforce data that give voice to individuals and society.

A further 33%

plan to do so.

Skilling-up for an AI-powered world involves more than science, technology, engineering and math. As computers behave more like humans, the social sciences and humanities will become even more important. If AI is to reach its potential in serving humans, then every engineer will need to learn more about the liberal arts and every liberal arts major will need to learn more about engineering." [19]

Brad Smith, President and Chief Legal Officer, Microsoft and Harry Shum, Executive Vice President of Microsoft's AI and Research group

Who else should be in the room when the solutions are being designed? While we traditionally relied on engineers with STEM skills to develop new technologies, this new era of AI demands people with "HEAT" skills (humanities, engineering, arts and technology) who can offer both technical and creative qualities, and who can bring a human, ethical perspective to the technologies they create. And teams should be made of people of different genders, races and backgrounds to ensure that one worldview isn't reflected in the system itself.

Once the systems are deployed, employees should be encouraged to question, or even override, algorithms. They will also need ways to report problems or unfair treatment to a manager, the engineering team or even an internal Ethics Review Board. Imagine if an employee received a speeding ticket as she raced to meet an algorithm's efficiency targets. Ideally, the technology itself would have a built-in employee feedback loop to help the algorithm learn and improve over time.

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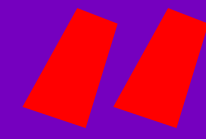
When we began our journey in Vodafone Business Operations, we already had an idea of how disruptive technology like AI would change the way we work. It's clear that AI is changing the way we work, including providing data that can improve business results and benefit our people—helping them be more creative and to serve our customers better. People continue to be at the center of our business, leading change responsibly and actively influencing our ability to drive positive outcomes for all stakeholders."

Gary Adey, Group Commercial and Operations Director, Vodafone Business

Share Responsibility. Share Benefits. Next Steps

Create a System of Checks and Balances

- Make one C-level executive accountable, supported by an executive coalition

- Enlist the board of directors

- Create an ethics review board

Co-create Systems with Employees

- Co-create data and AI initiatives with employees

- Build in employee feedback loops with opportunities for recourse

- Shift from STEM skills to HEAT skills when building solutions

ELEVATE PEOPLE. USE TECHNOLOGY RESPONSIBLY.

Open Opportunities. Don't Constrain Them.

With the right use of technology, companies can unlock the potential of their people, opening up more opportunities and pre-empting a kind of "digital determinism"—the idea that tech will determine social structures, cultural values and one's own experiences.

68 percent of business leaders told us that, collectively, they have a responsibility to address the ethical and societal challenge of using AI to unintentionally manipulate people's behavior and choices.

To uphold this responsibility, companies need to get creative.

Today, technology is often used to screen people out of jobs by relying on a narrow list of skills, experiences and education—limiting opportunities for those without a gilt-edged résumé or who want to try something new. But a body of research has found that experience and education aren't especially predictive of performance,[20] and the half-life of skills is diminishing so fast that screening people on specific ones isn't very useful either.

Leaders can now use intelligent technology to mine far more accurate predictors of performance, identify hidden skills and match people to jobs they never imagined they could do. They can collect data on people's core capabilities, like the ability to learn, analyze or collaborate, for example. And used creatively, technology can also identify latent and adjacent skills, opening up whole new horizons for people.

AXA, a French multinational insurance firm, has recently developed a virtual career assistant, for example, that uses AI algorithms to mine skills and interests of employees to determine what jobs they could be suited to and where they could use more training to pursue new opportunities. It works by aiming to answer questions employees have about their careers, including: "Will a robot do my job?" "What other job options are there for me?" and "What's the best training for me?" AXA is now working on an extension that will

match a person's values and traits with corporate culture to ensure employees are not only able to perform in a job, but will also like the work environment.[21]

This practice is particularly important in sectors that are most vulnerable to technological disruption. 94 percent of business leaders say that using technology to identify people's hidden and adjacent skills will help them quickly reskill and retain workers at risk of displacement.

94%

of business leaders say using AI to identify hidden and adjacent skills will help them reskill their workforce and retain displaced workers.

While crunching numbers on skills and interests can be beneficial, such scrutiny has left many employees (59 percent) concerned that employers will use workforce data to turn them into commodities—an undifferentiated mass. In fact, 75 percent of executives themselves fear this development. Data-based decision making can easily overlook qualitative and uniquely human factors, making it too easy to replace and exchange "human assets."

Collecting data that reflects people's preferences, needs and desires is one way to factor humanity into the math. Cisco, for example, developed a technology called the "Talent Cloud" that enables employees and leaders to match employee passions, strengths and skills to projects or roles by leveraging data and reputation. It acts as an agile talent ecosystem that lives up to the company's promise of "one company, many careers." People

can take on short-term stretch assignments or longer-term rotational assignments aligned to their interests and passions. The Talent Cloud also delivers on Cisco's promise to its employees to create "one size fits one" experiences that are differentiated and personalized—and to use new technologies in the workplace to realize greater revenue, productivity and engagement.[22]

"

Any technology that makes workers feel more human—to understand themselves better, have better relationships and have more impact in the world—will be welcomed by them. And any technology that makes them feel like 'I'm a number' or 'a cog in the machine' is what they'll reject, reducing their trust and good faith in their employer."

Gianpiero Petriglieri, Associate Professor of Organisational Behaviour at INSEAD

Reduce Bias—Everywhere.

Algorithms are written by people, and sometimes those people can be biased, whether they're conscious of it or not.

One might assume that if you remove the gender and race identifiers of someone's data, it might eliminate bias from algorithms. But this is not necessarily true, as the data itself could reflect a skewed talent pool or predominant bias that is already present in the workplace or society.

The good news: used creatively, technology provides ample opportunity to reduce bias.

AI startup, Pymetrics, developed a bias detection tool called Audit AI that detects bias in algorithms. Originally developed to root out bias in its own algorithms—which are used to determine if a candidate is a good fit for a job—Pymetrics recently open-sourced the tool to help others audit the output of virtually any machine learning technique.

It determines whether a specific statistic or trait fed into an algorithm is being favored or disadvantaged at a statistically significant, systematic rate, leading to adverse impacts on people underrepresented in the dataset.

Australian software company Atlassian uses an AI-based tool called Textio to analyze the company's job postings for signs of bias and suggest ways to correct them—avoiding words like "coding ninja," for example, that tend to suggest that these are less welcoming work environments for women staffers, discouraging them from applying. As a result, it saw an 80 percent increase in the hiring of women in technical roles globally over a two-year period.[23]

Smart machines can also lift the cloud of subjectivity and unconscious bias, helping arm managers with facts to ensure that pay raises, jobs and promotions go to those who deserve them.

One multinational financial services company, for example, increased female applicants for financial roles by 150 percent, and female applicants for all positions by 39 percent by using AI to gather science-based data predictive of performance.

Candidates' cognitive, social and emotional traits, such as the ability to quickly process information, are measured as they play neuroscience-based games. By using the technology, the company also went from screening 150 résumés to fill a role to just 25.

Data can also be used to identify the behaviors that drive improved results. At Microsoft, aggregated, de-identified data from everyday use of email and calendar apps is combined with organizational and customer relationship management data and then analyzed to identify collaboration patterns associated with sales success.

Their finding? High levels of collaboration predict customer satisfaction and greater sales per account.

Teams engaged with twice the number of customer contacts in higher growth accounts, and collaborated double the amount of time with these customers as compared to lower growth accounts. Personalized emails now empower sales staff with

data-based insights regarding their specific behaviors (for their eyes only) and how likely they are to drive customer satisfaction.[24]

80%

of employees say having newly available, factual data would improve fairness in hiring decisions, and

82%

say it would improve fairness in pay, promotions and performance appraisal decisions.

Grow People. Don't Penalize Them.

Companies have long tracked the productivity of employees—using stop watches, for example, in the early 20th century to determine the one best way to perform a job.

But advances in technology can take this to radical new heights, creating a kind of micromanagement that can make employees feel like their every move is being watched and that they could be penalized.

Many companies now track and share real-time results on scorecards or in a live gaming format.

Some use the results as grounds for dismissing poorly performing workers, an approach that can raise worker stress, lower job satisfaction and increase turnover.

But companies that use new sources of workplace data to help employees learn, grow or make their jobs easier can outperform those that use the data primarily to monitor and penalize individual employees.

Employees are optimistic: 81 percent of them say new workforce technologies will improve their learning, growth and career development.

More than twice as many employees are positive about the impact of new technologies and sources of workplace data on employees than those who are negative.

With the right motives, tracking employees can be beneficial for employees.

At Florida Hospital Celebration Health, nurses and patient-care technicians wear badges embedded with sensors, which track where they go during their shift, showing how often they visit patients' rooms or the nurses' station.

"We've never used it for punitive reasons," says Patty Jo Toor, Chief Nursing Officer.

The smart sensors have helped improve supply-stocking procedures and made nurses' shifts more efficient and their jobs easier.[25]

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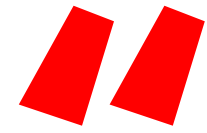
As leaders, we must put the business aim ahead of the tools. The same technology that tracks real-time productivity can be used to help employees flourish, or can be used as surveillance and a source for discipline. We have chosen the former—to help our employees grow and learn from the newly available data. To help them become their best selves at work."

David Cauble, Chief Financial Officer, Children's Mercy

Companies that use workforce data solely as a productivity-enhancing tool will miss out on some of the best that data and AI have to offer: the ability to help employees grow, learn and unleash their full potential.

New sources of data can help businesses better understand what motivates employees, find and play to an individual's strengths and help people gain satisfaction and meaning from work.

Cybersecurity firm Tenable uses AI tools to coach sales employees, for instance. AI analyzes videos of sales reps and scores them on emotions, coverage of key topics and personality.

Sales reps use the tool to coach themselves. Managers, who can supplement the AI with their own feedback, can harness the data to offer personalized coaching and mentoring.[26]

Decoding Operations DNA:
Value and Responsibility at Schlumberger

Strengthening employee trust is at the heart of how Schlumberger uses AI algorithms and advanced analytics to improve operations.

Cameras are mounted on the walls of the company's Center for Reliability & Efficiency in Denton, Texas, a facility that carries out maintenance and manufacturing of oilfield equipment. The cameras track every person and asset, and then AI is used to analyze patterns to improve productivity. When you consider that Schlumberger spends billions of dollars annually on oilfield equipment maintenance repairs, this data could have huge

implications for the improvement of equipment utilization.

How do employees feel about being tracked? Explains Rakesh Jaggi, President of Completions, "There was some initial resistance, but we gradually earned the trust of all of our employees—as we put in place strong measures to protect their privacy and empower them with the data, instead of controlling or punishing them with it."

He continues, "As we look to improve human productivity with new sources of workplace-generated data and AI, we must do so in a way that people are

comfortable with. Leaders must adopt ethical standards that represent a win-win for both the employee and the employer."

Schlumberger has used the technology to forge a new relationship between employee and employer, elevating trust.

First, Schlumberger practices "Give to Get." Leaders inform employees about the monitoring and provide benefits in return—including helping them be more productive, allowing them to use the data to make decisions autonomously, and improving their safety and work experience. For example, the data insights led

employees to modify rest areas and take more frequent breaks to minimize fatigue.

Second, it protects privacy and uses data to open opportunities for employees to grow. Video data is aggregated and anonymized. AI spots patterns to improve the work processes— never to monitor how each individual works. Each individual is given the choice to opt-in to privately see their own productivity data which they can use to learn and improve their performance.

Elevate People. Use Technology Responsibly: Next Steps

Open Opportunities. Don't Constrain Them.

- Use technology to open new career opportunities

- Use data to recognize the whole person

Reduce Bias—Everywhere.

- Apply technology to identify bias

- Use AI to assess talent without bias

Grow People. Don't Penalize Them.

- Track people to improve performance

- Use data to unleash employees' full potential, not just their productivity

Decode Human + Machine DNA

Workforces now include smart machines. And these machines are becoming more like partners, rather than tools. So, shouldn't companies start collecting data on the joint performance of people working with smart machines?

Use data to optimize the joint performance of humans collaborating with smart machines.

Consider the Air Force Research Lab, operated by the United States Air Force, where pilots now work symbiotically with smart technologies to remotely control airplanes from the ground. Sensors on wearables and smart machines collect data to create a complete picture of humans collaborating with machines—including performance on task communication, communications behavior, workload, and cognitive and physiological functioning. Algorithms predict causes of workload stress or human error when working with smart machines. They answer questions like:

How can technology predict and assist humans before performance degrades? What are the primary factors that most influence human-machine performance?[27]

Assess people and intelligent machines together.

Organizations could make employees' performance reviews—and their subsequent bonuses and salaries—commensurate with how well they work with machines. Performance appraisals based on joint performance could help address the problem of wage stagnation at a time when automation is boosting organizational productivity. Employees already feel strongly that they should share in the profits of human-machine collaboration: 86 percent of those we surveyed who work with smart machines believe their pay, performance ratings and feedback should be based on their joint human-machine performance.

Make the CHRO the CHMRO—or "Chief Human + Machine Resources Officer."

New human-machine collaborations present new leadership challenges about who is in charge, who manages the relationship between worker and robot, who decides on rewards and who is the expert on the new "digital worker." Nearly 80 percent of leaders believe the Chief Human Resources Officer role should oversee not just HR, but Human + Machine Resources, or HMR. This new, expanded role would oversee the development of entirely new approaches to managing "resources"—from designing a culture that fosters satisfying human-machine collaboration to developing joint human + machine performance reviews to redesigning workforce planning so that leaders can effectively decide whether to build, borrow, buy or bot the talent they need.
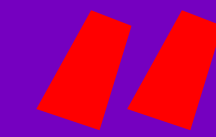
> **In an augmented workforce, the traditional boundary between humans and machines disappears. This will require CHROs to take on a new and significantly expanded role of managing the joint performance of humans working more closely with smart machines."**
>
> **Jacqui Canney, Executive Vice President of the Global People Division for Walmart Inc.**

Trust Works Both Ways

The emergence of AI and other smart technologies in the workplace calls for trade-offs between privacy and performance. Data can unlock people's potential and boost business performance, but these aren't prizes worth having if they diminish fairness and trust. Leaders must ask themselves: Just because we can, does it always mean we should?

Striking a balance will require thought, a willingness for both employers and employees to adapt and a strong dose of humanity. This is a responsibility that C-suite leaders can't ignore. If they get it right, companies can forge a new relationship with their people based on mutual trust. This will drive individual performance that will in turn accelerate better business results. If they get it wrong, companies risk losing their competitive edge.

Where Are You on the Road to Responsibility?

The Road to Responsibility: Decoding Organizational DNA

Some pioneers are taking steps along the road to responsible use of workplace data.

How do you fare?

How would your organization's performance be accelerated or impaired by the actions you take?

We analyzed 31 different actions leaders can take with respect to workplace data and technology, and how employees say these actions would impact trust in their employer. We then conducted economic modeling to determine the impact this could have on an organization's revenues.

What follows are the most important actions a leader can take to reinvent the employment relationship for trust and unleash greater financial performance.

	STOP (what employees say diminishes trust)	**GO** (what employees say elevates trust)	**Financial Opportunity Cost*** Percentage points (pps)
CONSENT **1. How do you ask permission?**	We don't ask permission to use emerging technologies to collect data on people and their work when possible. We ask it in unclear or blanket ways, or we use data for a purpose separate from the one for which the individual originally granted permission.	When using emerging technologies to collect data on people and their work, we ask permission every time we collect data and give employees the option to opt-in in exchange for benefits.	**$330 m** 8.3pps
SECURITY **2. How well do you safeguard data?**	We do not have mature cybersecurity measures in place, or we have had significant data security breaches and have failed to respond effectively.	We have strong cybersecurity measures in place to protect employee data and respond effectively if a data security breach is ever detected.	**$272m** 6.8 pps
COMMUNICATION **3. How do you communicate with employees about data collection?**	We don't tell employees how their data is being collected and used.	We clearly communicate how data is collected and used, and the benefits.	**$264m** 6.6 pps
PRIVACY **4. Do you employ measures to anonymize and aggregate data when possible?**	We don't keep an individual's data private when we set the expectation that we would do so, or we share individual data without anonymizing and aggregating it when possible.	We aggregate and anonymize employee data at the group level when appropriate. We keep an individual's data private when we set the expectation that we would do so.	**$238m** 5.9 pps
DATA-BASED DECISION MAKING **5. Are measures put in place to ensure that decisions made by AI or human analysis based on data are unbiased and correct?**	No, we don't have measures in place.	Yes. Managers and employees are trained on how to make effective and responsible decisions using data and AI. The datasets that train AI are carefully selected to reduce bias. Algorithms are rigorously assessed for bias before they are ever deployed. Once deployed, algorithms are continually tested and monitored to ensure they aren't biased or making poor decisions.	**$207m** 5.2 pps

	STOP (what employees say diminishes trust)	**GO** (what employees say elevates trust)	**Financial Opportunity Cost*** Percentage points (pps)
EMPLOYEE CONTROL **6. Do employees have technology tools or other ways to manage their own data?**	No, only the employer can manage employees' data.	Yes, individuals have technology tools or other ways to help them see, manage, control and correct data as well as report problems.	**$101m** 2.5 pps
CO-CREATION **7. Can employees participate in designing or reviewing workplace data and technology initiatives?**	No. Employees are not involved in designing workplace data and technology initiatives, such as participating in an ethical review board to review how workplace data is being collected and used.	Yes. Workplace data and technology designs are co-created with employees, such as including ethical review boards to review how workplace data is being collected and used.	**$77m** 1.9 pps
PROCESSES TO REPORT CONCERNS **8. Do employees have processes to report problems or concerns with respect to decisions made by algorithms or the use of technology to collect data on them and their work?**	No processes exist for employees to report issues or problems with AI (e.g. an incorrect or unfair decision) or workplace data collection.	Yes, we have created processes within our organization for employees to report issues or concerns with AI (e.g. an incorrect or unfair decision) or workplace data collection.	**$63m** 1.6 pps
CLEAR GUIDELINES **9. Have you established clear and fair guidelines regarding which data is appropriate to use and do you have regular risk analysis and response plans?**	No guidelines exist regarding which data is appropriate to use and regular risk analysis and response plans are not established.	Yes. Clear and fair guidelines exist regarding which data is appropriate to use and regular risk analysis and response plans are established (e.g. data privacy impact assessments or data privacy by design guidelines).	**$60m** 1.5 pps
ETHICISTS **10. Do you employ ethicists?**	No, we do not employ ethicists to evaluate the potential impact of workplace data and technology on employees and society.	Yes, we employ ethicists to evaluate the potential impact of workplace data and technology on employees and society.	**$39m** 1.0 pps

* This is reflective of survey questions asked of employees regarding how specific actions that organizations can take would elevate or diminish trust in their employer. These are not comprehensive of all the actions leaders can take to elevate trust and responsibly handle workplace data and technologies. For the purposes of this report, we simplified responses into "Stop" and "Go" categories, but we recognize that few companies will be fully in the "Stop" category and that there is a range of maturity between the two categories. **Financial opportunity cost is the lost premium to the revenues growth rate, on quarter over the same quarter previous year basis, percentage points for the average global company with annual revenues of US$4 billion and annual growth rate of 13 percent from representative sample.

APPENDIX
Unlocking the Value of Workplace Data

Using new technologies, organizations can now mine a vast array of new data about people and their work. This includes work processes or products, employee behaviors that could signal security or attrition risks and who is doing what, how well, with whom and for how long. Organizations can also collect detailed data that reveals employee collaboration and communication patterns; safety and wellness; skills and capabilities; and emotions, values and passions.

Value	Percentage of leaders who expect to achieve a large or significant improvement	Example
Right People in Right Roles By assessing skills, cultural fit and passions in the context of work requirements.	**70%**	**Hilton** uses a platform using predictive analytics to analyze video interviews to improve hiring. As a result, it has reduced inherent human biases in interviewing, cut time to hire from 42 days to just five, improved the candidate experience, and surfaced better quality candidates.[28]
Productivity & Workforce Performance By analyzing work processes, how people spend their time and who they collaborate with.	**69%**	Health insurer **Humana** uses AI to analyze call center workers' customer calls to augment their emotional intelligence. It detects how the customer is feeling and how the call center rep is being perceived, providing real-time guidance on how to improve empathy and their interactions. As a result, customer satisfaction improved 28 percent and employee engagement during calls improved 63 percent.[29]
Agility By spotting and improving work patterns to speed time to market and adjusting change programs with customized incentives for individuals.	**61%**	One consumer packaged goods company shaved almost a year off time to market by identifying employees who were bottlenecks and then redirecting communications to others who had the potential to be good connectors.[30]

Value	Percentage of leaders who expect to achieve a large or significant improvement	Example
Engagement, Retention, Employee Growth By detecting sentiment and engagement, anticipating attrition risks and personalizing learning, rewards and other experiences.	**56%**	**Honda** uses AI to track real-time job performance, feedback and employee surveys to provide suggestions to managers and co-workers on how to recognize and reward employees. As a result, it experienced an 80 percent year-over-year rise in employee engagement in its U.S. R&D division.[31]
Innovation By identifying and rewarding innovators, and evaluating acquisition targets by assessing their risk profile, culture and talent.	**50%**	**Royal Dutch Shell's** GameChanger, a program that incubates and markets entrepreneurs' ideas, used a gaming technology with machine learning to quickly identify innovators to help decide whether to fund small projects developing potentially important business ideas. The algorithm helped narrow the ideas down by 80 percent, saving money and time for the company.[32]
Cybersecurity By using AI to detect abnormal patterns of employee behavior to identify potential threats.	**44%**	**Washington State University** uses advanced analytics to identify deviations from normal employee digital behavior. Security teams can identify threats and other issues before they become serious. Time to respond to potential threats decreased by roughly 80 percent.[33] MIT's AI2 system, meanwhile, has used machine learning to predict 85 percent of cyberattacks.[34]
Safety & Wellness By using wearables or video analytics to flag signs of stress and fatigue; and by improving the working environment in response to wider wellbeing trends.	**35%**	One of the world's largest construction companies, **BBMV**, armed their construction workers with wearable technology and used an algorithm developed by the U.S. Army to measure and predict the fatigue level of workers as they arrive for duty. In the first two months, BBMV saw a 24 percent reduction in time spent by workers who were fatigue impaired on duty.[35]

About the Research

The Accenture Research program was built on four proprietary research initiatives.

A **workforce survey** of 10,000 workers across skill levels and generations.

A **business leader survey** of 1,400 C-level executives.

Both surveys covered 13 countries (Australia, Brazil, China, France, Germany, India, Italy, Japan, Netherlands, Spain, Switzerland, the UK and the USA) and the following industry sectors: Automotive, Consumer Goods & Services, Healthcare Providers, Public Services, Software & Platforms, High Tech, Retail, Banking, Communication & Media, Travel (hospitality and airlines), Utilities, Energy, Insurance. These were carried out between October and November 2018.

In-depth interviews involving 31 Accenture clients, experts in the field and vendors. Interviews were conducted by Accenture Research.

Econometric modeling to determine the relationship between employee trust and financial performance.

Measuring the Value at Stake

How can company worker data strategies create value for companies? We combine employees' and CXOs' survey insights on trust and different data use situations with econometric modeling to estimate company and industry-wide financial impact of responsible and irresponsible data use. We do so in four steps:
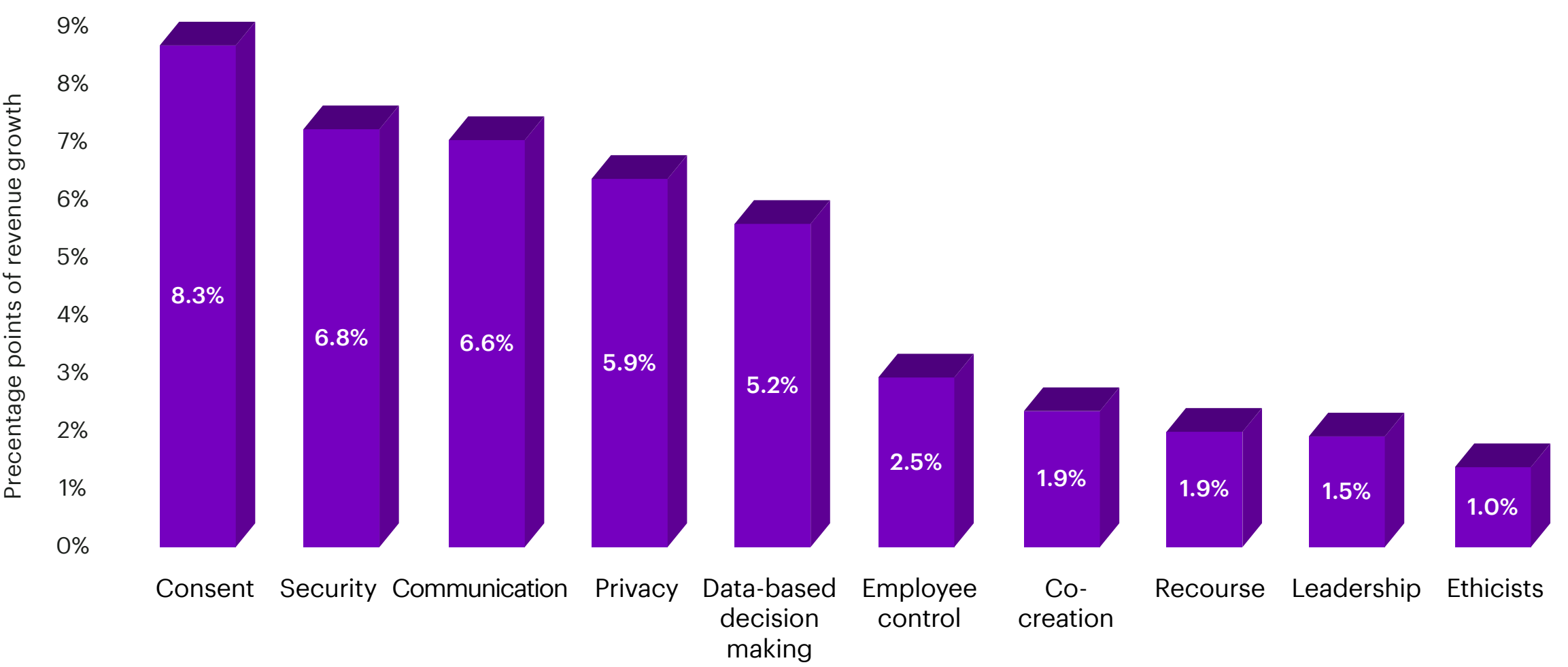
1. Employee trust response

Our approach begins by analyzing how employee trust responds to 31 different data usage strategies grouped into 16 different action areas.
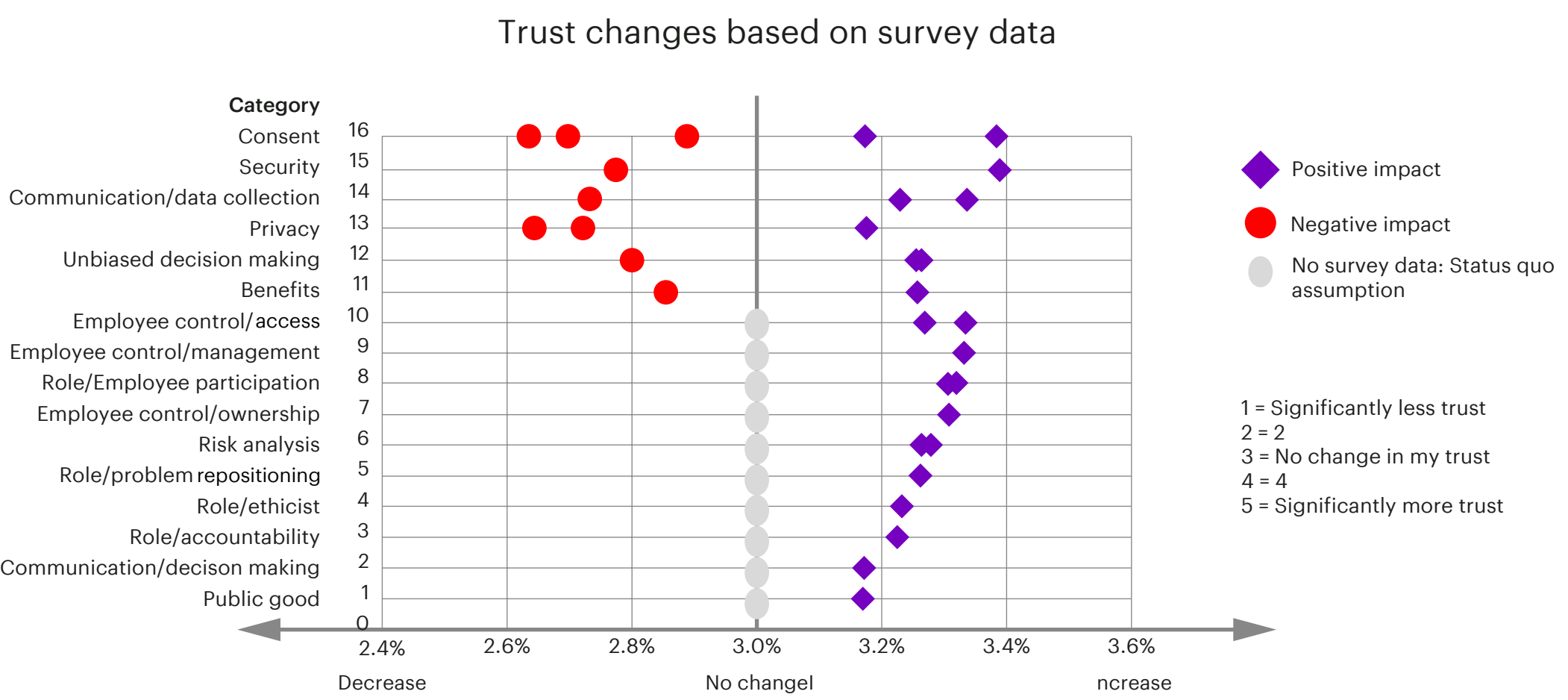
2. Responsible data premium

Next, we estimate how changes in trust coming from extreme strategies within each action area could impact company revenue growth. This is the "premium" on growth following from a responsible data strategy.

Trust changes based on survey data

Positive impact
Negative impact
No survey data: Status quo assumption

1 = Significantly less trust
2 = 2
3 = No change in my trust
4 = 4
5 = Significantly more trust
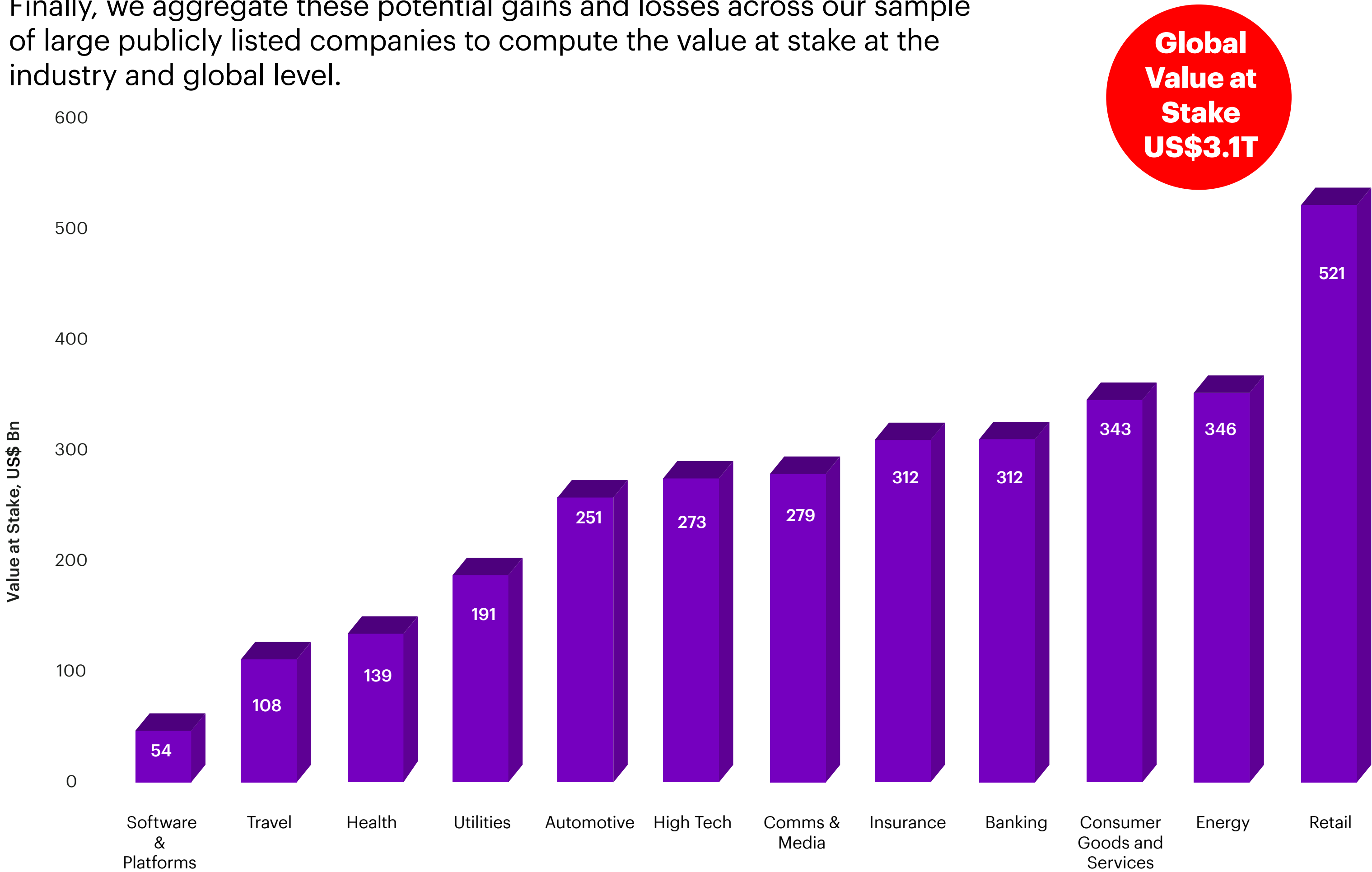
3. Company Value at Stake

Considering current business data practices as reported in our CXO survey, we then compute the value to be gained or lost for the average global publicly listed company in two situations:

1. adopting a responsible data strategy and

2. adopting an irresponsible data strategy
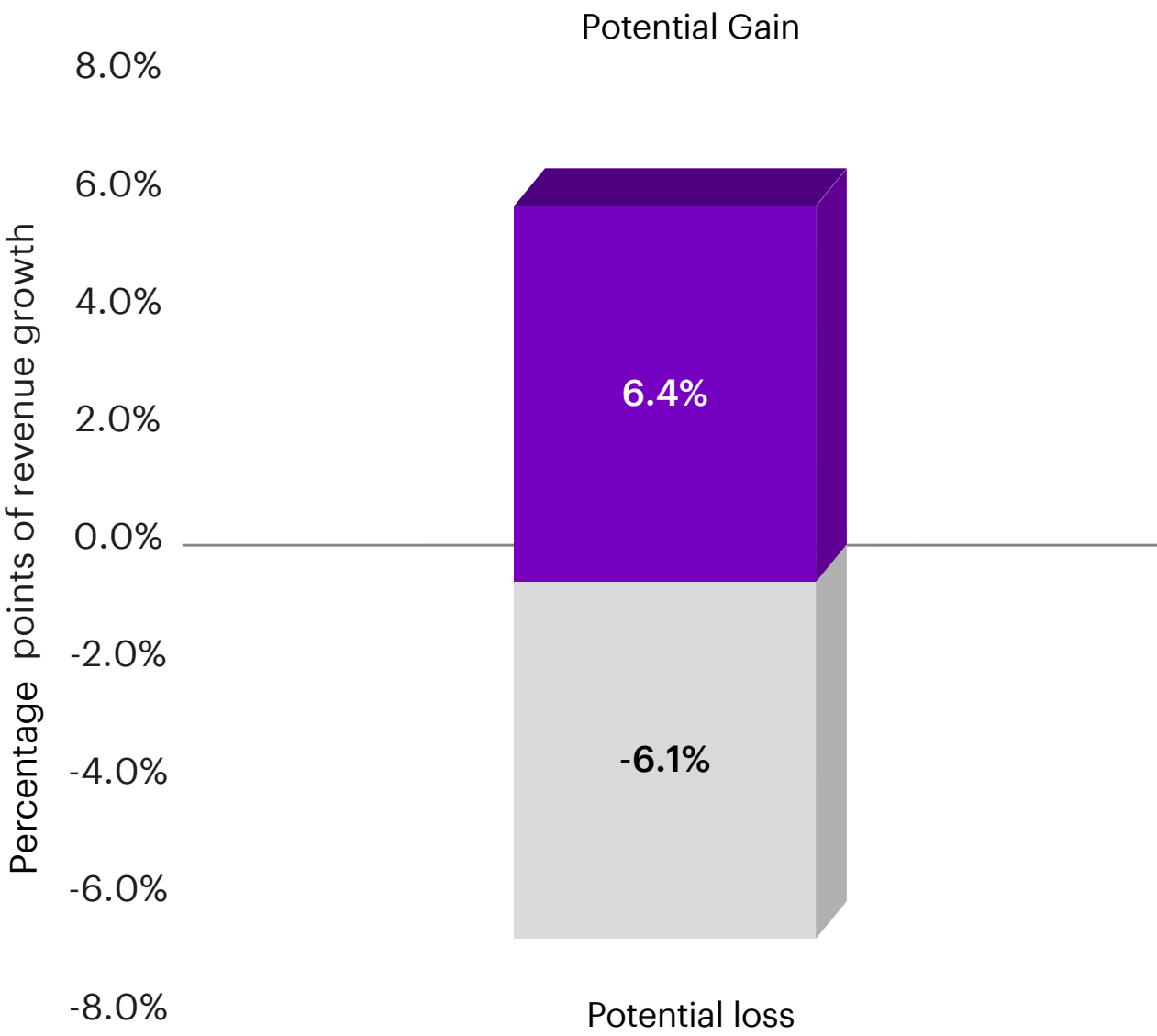
4. Global and Industry Value at Stake

Finally, we aggregate these potential gains and losses across our sample of large publicly listed companies to compute the value at stake at the industry and global level.

Global Value at Stake US$3.1T

Chart: Company Value at Stake. Percentage points of revenue growth. Potential Gain: 6.4%. Potential loss: -6.1%.

Chart: Value at Stake, US$ Bn by industry. Software & Platforms 54; Travel 108; Health 139; Utilities 191; Automotive 251; High Tech 273; Comms & Media 279; Insurance 312; Banking 312; Consumer Goods and Services 343; Energy 346; Retail 521.

Additional notes

1. Employee trust response

We used the Employee survey of 10,000 respondents in 13 countries from 13 industries to estimate
a) the current level of employee trust in their employer,
b) employees' rating of their employer as a "great place to work," and
c) response of trust levels to 31 different data strategies grouped into 16 action areas to understand how different uses of workforce data may impact employees' trust levels and "great place to work" rating. We built a regression model to estimate the relationship between employees' "great place to work" rating and their level of trust. We then analyzed how different uses of workforce data may impact trust levels and, subsequently, the "great place to work" rating.

An example of the questions we used goes as follows:

If the following was true when your employer used technology to collect data on you or your work, how would that impact your level of trust in your employer? Please rate 1-5.

My employer clearly asks for permission to collect data on me or my work EVERY TIME they do so.

2. Responsible data premium

We calculated the responsible data premium for each action area in the following way:

Responsible data revenue growth premium in area i	=	Trust effect on financial performance	x	Change in Trust from least to most responsible action in area i

To calibrate the **"trust effect on financial performance"** parameter, we collected estimates from various academic papers published in peer-reviewed publications. For the specific case of the impact on revenues we used the econometric estimation in Green, Huang, Wen, and Zhou, 'Crowdsourced Employer Reviews and Stock Returns' (2018), Journal of Financial Economics. This parameter estimation captures the relationship between changes to employer rating (based on employees' reviews of companies as places to work on Glassdoor) and revenue growth. To estimate the financial impact of changes in trust level, we adjusted this parameter with an econometrically informed relationship between "great place to work" and trust ratings as reported in our employee survey. To produce dollar revenue growth estimates, we sourced from S&P CapIQ financial data for more than 6,000 of the largest publicly listed companies from countries and industries under scope.

3. Company Value at Stake

The CXO survey of 1,400 executives from 13 countries and 13 industries allowed us to estimate the status of workforce data strategies currently in place, i.e. the share of companies already following a specific data strategy. This in combination with the responsible data growth premium estimations across the 16 different action areas enables us to estimate for the average company a) the potential growth still to be gained if it followed more responsible data strategies and b) the potential growth to be lost, should it follow more irresponsible data strategies. Formally:

$$\text{Potential gain} = \sum_{i=1}^{16} \text{Share of companies with maximum responsible data premium in area } i \;\times\; \text{Responsible data revenue growth premium in area } i$$

$$\text{Potential loss} = \sum_{i=1}^{16} \text{Share of companies with minimum responsible data premium in area } i \;\times\; \text{Responsible data revenue growth discount in area } i *$$

* Responsible data discount = - responsible data premium

4. Global and Industry Value at Stake

The global value at stake estimation extrapolates the revenue gains and losses of the average company to the 6,000 companies in our sample. The industry value at stake was calculated following the same procedure using parameters calculated at the industry level.

$$\text{Value at Stake} = (\text{Potential gain} + \text{Potential loss}) \;\times\; \text{Number of companies in our sample}$$

The global estimate comprises the following industries headquartered in the countries under scope (between brackets the number of companies included):

Health (188),
Travel (129),
Software & Platforms (473),
Consumer Goods & Services (1045),
Banking (861),
Comms & Media (614),
Retail (756),
Insurance (173),
Energy (301),
Utilities (393),
Automotive (121),
High Tech (1183).

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