



Beyond productivity

The journey to the
quantified organization

April 2023

Introduction

As work becomes increasingly digitized, organizations have access to an unprecedented volume of work and workforce data.

In a recent survey of information technology, data science, and data engineering professionals in North America, respondents said that, on average, data volumes in their organizations are growing by 63% every month, and organizations are collecting data from an average of 400 different sources—computers, smartphones, websites, social media networks, and more.ⁱ One new stream of this data has been the adoption of new worker monitoring tools. Between the beginning of the pandemic and late 2022, around one in three medium and large companies had adopted new tools for monitoring their employees.ⁱⁱ But in the rush to adopt such new tools, organizations may be alienating their workers and undermining the very

productivity they are attempting to optimize. And perhaps more critically, they are missing out on opportunities to use work and workforce data to drive efficiency and growth, improve strategy, and create shared value at the individual, team, organizational and societal levels.

It is critical to emphasize the importance of obtaining workers’ consent for data that is being used in these efforts. This becomes particularly relevant as AI increasingly enables us to take advantage of this data, it becomes important to focus an organization’s efforts on a deep understanding of what data should be collected—not just what can be collected—and linking those initiatives to specific organizational goals and outcomes can allow the organization

to tap into important sources of value that might otherwise be left on the table. This approach can also help organizations develop responsible approaches to collecting data that improve workforce trust. Indeed, it is Deloitte’s position that any type of employee data collection should be done with consent of employees or in a transparent way.

Drawing from in-depth interviews conducted with global executives, this report, *Beyond productivity: The journey to the quantified organization*, highlights opportunities to use work and workforce data to gain a holistic view of the organization to help create value for individuals, teams, the organization, and society.



Chapter 1: New data, new opportunities

In the opening rounds of the 2022 World Cup, famed striker Cristiano Ronaldo sparked an intense debate for “trying to sneakily claim credit” for scoring a goal on a cross he had not touched.¹

To award credit for the goal, officials relied on the ball itself—a smart ball collecting and transmitting location data every two milliseconds—to determine that when the ball breezed ever so slightly past Ronaldo’s head, it did not experience any measurable impact.²

The technology used during the World Cup offers a preview of where enterprise tracking technology might be headed. The smart ball used the same ultra-wideband technology that is now being introduced into smart factories to allow object tracking on factory floors with centimeter-level accuracy.³ Ronaldo’s location in relation to the ball was determined using cameras tracking each player’s precise location 50 times per second, illustrating how discrete sources of data can be used to help build a comprehensive picture of a whole system.⁴

As work becomes increasingly digital, organizations likely have access to an unprecedented volume of newly available data, and efforts to track work and the workforce are accelerating. Between the beginning of the COVID-19 pandemic and late 2022, approximately one third of medium and large companies surveyed adopted new worker monitoring tools that analyze key strokes, mouse activity, and more to determine how much a person is working and on what—a rate of adoption that outpaces even the steepest part of the curve of smartphone adoption in the U.S.⁵

And, according to a recent trust benchmarking analysis, some two thirds of respondents say that their organization leverages data and analytics to make talent decisions.⁶



New data, new opportunities

But in the rush to adopt such new tools, organizations may be alienating their workers and undermining the very productivity they are attempting to optimize. Increased productivity monitoring may encourage some workers to engage in “productivity theater”—an effort to look busier than they are. A recent study found that desk-based knowledge workers spend an average of 67 extra minutes a day online to show availability even if they aren’t working.⁷ This kind of productivity monitoring may not help workers or organizations.

78%
of employers surveyed are using remote tools to monitor their employees.⁸

There is a wealth of newly available and largely untapped data generated by the workforce in the course of their everyday work. This can help organizations improve their business with greater agility, innovation and customer satisfaction, but could also help workers be happier, safer, more employable with relevant skills, and enjoy a fairer, more inclusive experience at work while increasing trust between the two entities. Organizations that focus on individual worker productivity could miss out on bigger efficiency gains, shared value, and growth.

Drawing from in-depth interviews Deloitte conducted with senior global business executives, this report highlights opportunities for organizations to consider to help create value across the enterprise over time. Much like Ronaldo’s phantom goal, these opportunities could provide a path to move beyond the era of “the quantified employee”⁹ and begin to quantify activity across multiple levels of an organization, unlocking new value for workers, teams, organizations, and society at large.

The rise of the quantified organization

The Deloitte definition

A quantified organization takes a strategic approach to measuring what it should, not just what it can. It takes a responsible approach to using new data sources and AI tools to create value for stakeholders across the organization, improving workforce trust and driving the organization forward to new levels of financial, reputational, and operational performance.

In a world saturated with data and a host of emerging AI tools to mine it, how does an organization know what data it should be collecting and measuring to create value?

In recent years, organizations have started to augment data collection from traditional surveys and enterprise resource systems by collecting passive data through workplace tools and technologies, creating real-time insights that more accurately reflect how people and organizational systems are actually working.¹⁰

Passive data is generated and collected without the direct input, and sometimes even awareness, of an individual. For example, location information is passively generated when an individual keeps their phone with them while running errands.

The growth in passive data from common workplace applications like email, collaboration and social tools, and shared calendars may already be outpacing many organizations' capacities to process and use the data, resulting in too much data and too little insight.

Linking data collection efforts to intended outcomes could become increasingly difficult as organizations augment these tools with sophisticated new technologies—wearables, neurotechnology, biometric sensing tools, XR headsets, precision location tracking technologies, among others—and attempt to make sense of this data.



New data, new opportunities

As people and machines increasingly interact, they leave an ever-expanding digital trail of work that can be mined to create value. These data trails can then be analyzed by new tools, such as algorithms that judge the quality of a software developer’s code or writer’s article; the emotional tone of a call center employee interacting with a customer; worker behaviors that shed light on an organization’s culture and sense of equity; the physical safety of workers in the field; or how people are interacting with one another.

Whether applying analytics, machine learning, or human judgement, sense-making is what allows organizations to convert data into insights, actions, and decisions that have the power to improve everything from innovation to agility to worker performance and well-being. But without the right context, even simple measurements can undermine efforts to turn data into value.

Consider worker fatigue as an example. There are numerous downsides to working when tired, particularly in fields that involve working with heavy equipment.

In recent years, some companies have started to measure worker fatigue using tools like smart hats that monitor brainwaves, smart glasses that monitor blink duration and frequency, and cameras that measure head and neck motion to look for signs of nodding off.¹¹ One project even used eyelid data from webcams to look for signs of drowsiness among office workers and automatically triggered the air conditioner to turn on at the first sign of sleepiness.¹²



We think that there is much more insight and value in unstructured data than there is in structured data... The structured data is probably what is more conveniently measured and managed, but it doesn’t really give you the right sense of how you improve the outcomes of the business, nor the satisfaction or the experience of the employees.”

COO, Financial Services Firm

But even if a system can identify a fatigued worker, it's not always clear what to do about it. Karen Levy, a sociology professor who has studied the impacts of monitoring technology in the trucking industry, notes that efforts to track trucker fatigue have traditionally focused on measuring the individual driver's state of alertness and then preventing the driver from working when data showed they were tired. But these tracking efforts ignore contributing factors, such as loading delays, that exist elsewhere in the transportation system.¹³

By focusing only on the individual worker, the organization could miss out on bigger opportunities to address the underlying contributing factors to worker fatigue, thus benefitting the enterprise while improving the health, safety, and happiness of individual workers.

This is a significant distinction between an organization that collects data without a strategy and a quantified organization: quantified organizations are likely willing to let data drive deeper—and often more challenging—organizational change to solve complex problems.

New data, new opportunities



Chapter 2: Creating shared value with data

The growth in passive workforce data—combined with other sources of information, analytics, and AI—is surfacing new opportunities to help create shared value at multiple levels of an organization: the individual worker; the team, group, or function; the enterprise; and greater society.

When an organization uses the data they collect about their workforce to benefit everyone—individual workers, teams and groups, the organization, and society as a whole—we call that creating shared value.

The value created at each level can flow between them, reinforcing and amplifying the value created at other levels. Consider worker happiness as an example. In addition to individual benefits of being happier at work, such as improved wellness and performance, worker happiness could also improve teamwork and social encounters at the group level.¹⁴ It has been linked to improved engagement, productivity, and culture, and reduces attrition risks at the enterprise level. Japan-based technology firm Hitachi experimented with improving the happiness levels of its employees using wearables and an accompanying mobile app that offered employees suggestions for increasing feelings of happiness.¹⁵

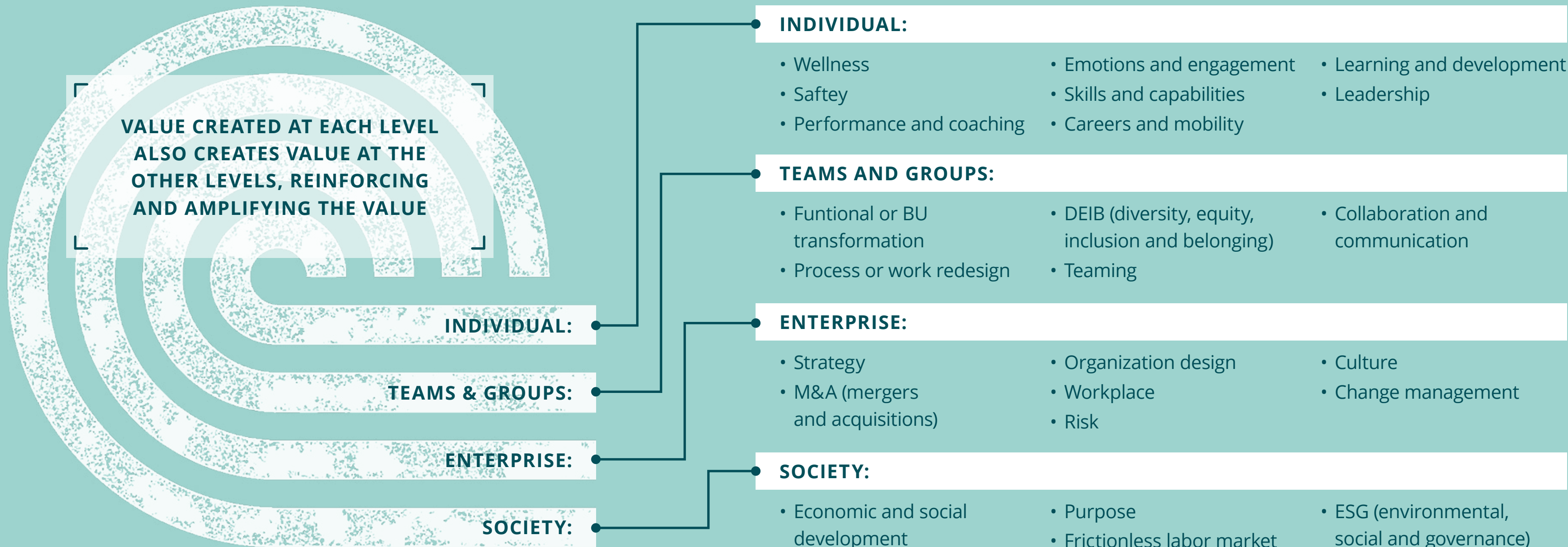
During testing, the psychological capital of workers rose by 33% and profits increased by 10%. Sales per hour increased 34% at call centers and retail sales increased by 15%, demonstrating how creating value at the employee level had far-reaching impacts on the business.¹⁶

Group or enterprise initiatives that achieve organizational benefits like cost savings or improved quality (e.g., a workplace or work redesign enabling more flexible or meaningful work) can also help amplify an individual's happiness. And as organizations improve their workforce's collective happiness, they could contribute to a better, happier society too.

By focusing on how to create value in and across these levels, organizations can magnify their impact while strengthening their long-term position.



The four levels of shared value



Source: Deloitte Analysis

Shared value for individual workers

Even as new and emerging technologies help enable organizations to measure and improve individual performance and activity in more detailed and helpful ways, a growing body of literature demonstrates that wellbeing and mental health are not only valuable to the worker, but important to team and organizational success. New advances in technology can now enable leaders and workers to better understand mental health, and take actions to improve it.

However, organizations could face a tricky balance between supporting wellness and happiness efforts and overstepping their bounds.

As the COO of a financial services organization told us, organizations may risk becoming “the be-all and end-all” for providing services that improve a person’s well-being and sense of belonging that used to come from civic groups, families and other entities. The COO also noted that obligations and liabilities, especially around sensitive health and wellness data, may not be clear. They said that other activities, such as facilitating skill and career development, offer clearer paths to creating shared value with workers by enabling them to develop in ways that enhance their skills and employability while also creating value for the enterprise.



Helping create value for the individual

Measuring and improving performance

Cultivating next-level leadership

Enhancing wellness

Ensuring safe working conditions

Supporting emotional well-being and engagement

Improving career mobility

Personalizing learning and development

Identifying skills and capabilities



Helping create value for the individual

Measuring and improving performance



Identify the activities, roles, actions, and workers that create the most value

Monitor workers and managers to identify the portfolio of activities, people, roles, or skill sets that determine 80% of effective outcomes. Use employee communication data and network analysis to identify “rockstar” performers and use AI to help others learn from them.

Provide evidence-based, real-time support

Use audio or video analytics (e.g., of a sales or call center employee, or a retail clerk) or work and collaboration data to identify behaviors that drive results. Use this data as input into algorithmic coaching. Individual worker data can also be mined to provide personalized insights that help improve skills such as communication, focus, self-awareness, and time management.

Enhance performance feedback

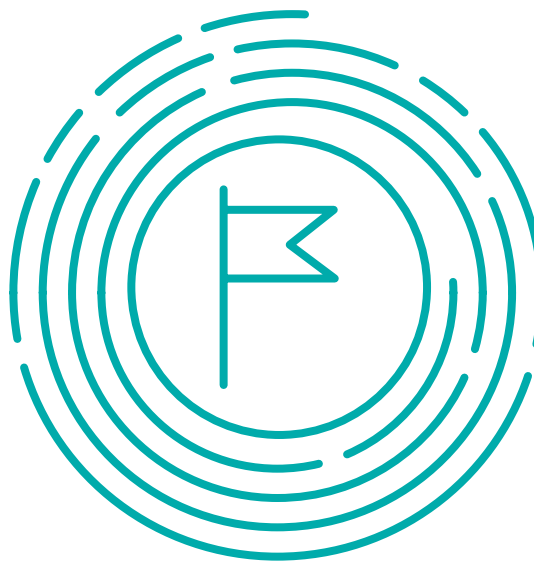
When gathering performance feedback, mine employee work application data to identify the coworkers an employee interacts with most frequently, who can provide the most relevant feedback.

Implement fact-based performance reviews

Quantify performance based on data from work applications or products to inform a manager’s assessment of performance, leading to more objective and less biased evaluations.

Helping create value for the individual

Cultivating next-level leadership



Identify inclusive leadership

Measure the degree of listening and communication with employees. Use video and audio analytics to infer qualities like a learning mindset.

Assess focus on strategic priorities

Assess the time spent on various activities as mined through work applications, comparing it to a leaders actual priorities and goals.

Unlock collaboration across boundaries

Use social network analysis to help determine presence of cross-functional leadership teams and the strength and type of a leaders connections across the enterprise.

Plan for succession

Use data based on projects, outcomes, or skills to identify the necessary skills and qualities of potential successors, as well as the number of potential successors per key role. Surface potential successors' flight risk through engagement data.



Spotlight: Fluid skill development

Jobs with narrowly defined boundaries are increasingly giving way to more fluid, skills-based work.

In a recent survey, we found that 63% of work being performed falls outside of a worker's core job description, requiring new models for understanding how to activate workers to get things done.¹⁷ These models have the potential to improve work processes for the organization and can provide development and growth opportunities for individuals

(e.g., taking on new tasks based on their transferrable or adjacent skills). Deloitte research found that those organizations that use skills data to make decisions about work and the workforce are not only more likely to have a reputation as a great place to grow and develop, but are also more likely to innovate and respond to change with agility.¹⁸

GE HealthCare recently launched an effort to apply machine learning to worker activity, learning history, job history and other workforce data to help identify opportunities for workers to use their existing skills to take on different work.

In addition to providing growth and development opportunities to workers, the company plans to use skill-based profiles to improve workforce planning and hiring efforts.¹⁹



The labor market is unbelievably competitive. So once you have someone you want to invest a lot of money in, what are the skills of this person? How can we grow those skills?

If we have openings in the company, how can we map their skills to other opportunities?"

Chief Operating Officer



Helping create value for the individual

Enhancing wellness



Improve physical well-being

Use wearables, sensors in the environment, or video analytics to track body movements to reveal patterns of physical wellness for those who opt in.

Enhance mental well-being

Detect patterns of stress, attention, and other mental states through wearable neuro-technologies like headphones and augmented reality headsets designed to measure mental state. Track amount of time spent on work (including after hours) through work applications to help detect potential burnout. Use audio, video, and wearable data to identify other signs of stress, as well as opportunities to help workers improve mental health.

Boost belonging and social connection

Collect data from employee communications, voice and video data, location data, or embedded sensors in the workplace to reveal relationship patterns, interactions, and socializing styles. Use this data to make suggestions to employees, managers, and leaders on improving interactions and relationships with others. This data can also be used to suggest mentors, coaches, or other colleagues an individual worker might want to connect with.

Helping create value for the individual

Ensuring safe working conditions



Create adaptive environments

Improve safety by connecting location or biometric data from wearables to smart devices in the physical environment that enable workspaces and processes to adapt to the worker (e.g., having robots or machinery move based on a workers' movements).

Practice cognitive ergonomics²⁰

Use neurotechnology wearables to measure the cognitive load of workers in physical work environments and detect and alert for overload, which can produce safety hazards, errors, and health issues.

Improve physical positioning

Use wearables, smart sensors on devices or in the environment, or video analytics to track and alert workers to improper physical movements (like posture) that could lead to injuries. Use this data to feed simulation tools that can predict injuries and lead to new safety policies.



Helping create value for the individual

Supporting emotional well-being and engagement



Use emotional data to help guide interventions
Deploy emotion detecting software that mines biometrics, voice and audio calls, and email and work application data to infer the emotional states of workers who agree to data collection efforts. This data can be used to improve learning and coach workers on how to be more attentive, less stressed, or work with customers.

Keep workers engaged
Use emotional data combined with other data such as degree of belonging, interactions with managers and peers, purpose, learning and growth, culture, and more to assess engagement and predict attrition.

Improving career mobility



Create opportunities for growth and movement
Use data on transferable or adjacent skills, interests, and worker activity to suggest which skills employees can develop to be more marketable and employable as organizations evolve. Also use this data to match them to new opportunities, projects, learning, or roles.

Access diverse and hidden talent
Identify hidden talents during recruitment and hire based on skills, cultural fit, or team fit instead of education and experience listed on resumes.

Spotlight: Automated coaching

Cogito is a provider of real-time data analytics for customer service centers.

They analyze customer service calls for tone, word frequency, speaking pace and more to understand agent interactions with customers and look for signs of distress. The tool is designed to then suggest subtle adjustments—such as encouraging an agent to speak faster or slower—to help improve the quality of the call. In a recent test with MetLife, call agents using this tool improved resolution rates by 3.5% and increased customer satisfaction by 13%.²¹

In work environments like call centers that feel more anonymized, a model like Cogito's can provide real-time coaching to individual workers about how best to communicate with customers, helping achieve organization-wide outcomes. Other technologies can analyze interactions with colleagues in a similar way, augmenting traditional approaches to mentorship and coaching by providing targeted, real-time feedback at scale.

In a recent test with MetLife, call agents using this tool improved resolution rates by 3.5% and increased customer satisfaction by 13%.²¹

Helping create value for the individual

Personalizing learning and development



Deliver adaptive learning

Track how well people are learning through VR/AR that captures reactions in real-time or through neurotechnology wearables that use AI to tailor learning to the individual.

Overlay learning onto the physical environment

Use wearables like AR goggles to overlay learning on top of physical reality as people move (e.g., providing directions on how to place objects in fulfillment centers).

Provide just-in-time learning opportunities

Track what workers are working on to recommend learning opportunities relevant to their work just-in-time, and suggest others with whom they may want to connect.

Capture informal learning and measure impact of learning

Mine work application data to track informal learning from social discussions, metaverse interactions, videos watched, articles read, use of performance support tools, and calls with mentors. Track behavior changes by capturing digital work products to visualize the impact of learning.

Helping create value for the individual

Identifying skills and capabilities



Infer skills, capabilities, and adjacent skills

Infer skills and adjacent skills from project and work histories (including volunteering, military service, or other lived experiences), digital work products (e.g., code or support tickets), work applications (e.g., project systems), and text analysis (e.g., performance feedback, collaboration sites, etc.). Digital scenarios (e.g., simulations, job previews in VR, and games) can be used to assess human capabilities like emotional intelligence.

Identify next horizon skills needed internally

Analyze external data from job and project postings, social profiles, skilled vendor industry benchmarks, and more to predictively see future skills needed and skills migrations. Connect these trends with each workers' existing skills to suggest learning and work experiences needed to develop future skills, or to provide leaders with aggregate supply and demand data.

Spot hidden high potentials

Use organization network analysis to spot influencers with natural leadership skills and outsized impact.



Shared value at the team and group level

Efforts to understand individual workers can be analyzed, streamlined and remixed to help improve both formal and informal collaboration throughout an organization. These opportunities for shared value creation can cut across multiple dimensions. Some aim to use data on work and the workforce to improve outcomes like agility, speed, quality, or customer satisfaction while also improving the worker experience. Others, such as redesigning work processes, can point toward opportunities to develop evidence-based approaches to creating successful human—and machine—work teams.

These kinds of efforts can help organize and optimize teams based on preferred communications styles and provide feedback and coaching to enable more effective communication.

In addition to improving real-time interactions, some organizations may be able to use new data and analytics to identify underlying structural factors that should be addressed rather than re-enforce pre-existing biases and blind spots. For example, tools that help identify intentional, toxic efforts to undermine diversity, equity and inclusion (DEI) activities or pinpoint

microaggressions and unconscious biases can help improve DEI efforts. Taken together, these approaches to value creation at the team level can help teams be higher functioning, more inclusive, more flexible, and better aligned with the needs of individual workers as well as the organization.



Helping create value for teams and groups

Redesigning work

Building better teams

Enhancing collaboration and ways of working

Transforming functions or business units

Boosting DEI and belonging efforts



Helping create value for teams and groups

Redesigning work



Simulate work processes or human/machine interactions

Collect data on how workers interact with others and/or machines to create a digital twin of the workforce to simulate work redesigns and their impact.

Understand hidden work patterns

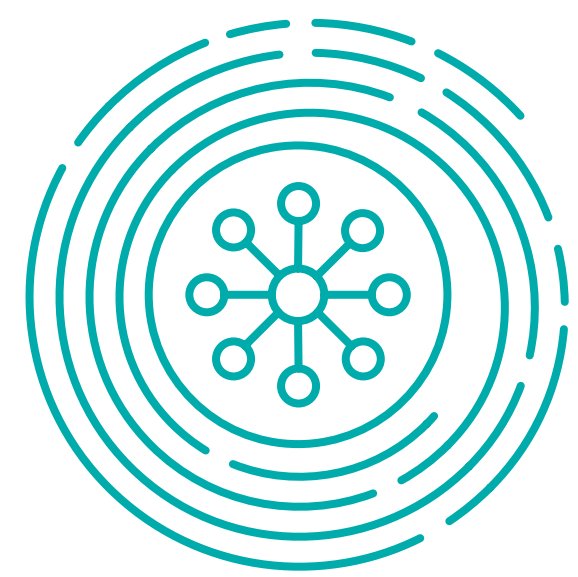
Use process mining of enterprise transaction systems, workflow data, or video analytics to help identify root causes of issues, the tasks underlying each job, and the strongest opportunities for improvements.

Identify bottlenecks and supplement formal processes with informal conversations

Use organizational network data to help identify employees who are bottlenecks or spots where more interaction can improve a process, adjusting communication patterns accordingly.

Helping create value for teams and groups

Building better teams



Optimize team composition

Mine data on skills, work styles, values, collaborative abilities, and more to optimize team composition and predict team performance based on the impact of each newly added member.

Enhance team performance

Mine data from team collaboration and project management sites to determine factors like interpersonal relationships that require special attention, points of conflict, and project decision makers using AI as a coach to suggest improvements.



Spotlight: Improving quality and cycle time



Sometimes you see a problem appearing, but it appears at a totally different place where it has its root cause... This is called process mining. It's very interesting that you see that what you perhaps consider as the standard process is absolutely not the standard process, but there are many workarounds which are used which create many disturbances at other places. These connections or dependencies you only understand if you use data."

COO, Industrial Services Company

Advances in technology like AI-powered audio and video analytics can help people understand how work is performed with employees, customers, or machines.

These tools can provide valuable insights into communication and collaboration patterns, continuous improvement of customer interactions, and speed and quality.

For example, a Tier 1 automotive supplier used AI-powered video analytics to provide detailed visibility into the activities that workers perform in the factory. Analytics revealed a slowdown in stations whose configurations inhibited workers and caused ergonomic issues. As a result, the organization reconfigured the stations and improved line balancing, reducing cycle time and helping their workers become healthier, happier, and more productive.²²



Helping create value for teams and groups

Enhancing collaboration and ways of working



Make meetings more effective

Use audio and video analytics to automatically summarize meetings and surface relevant information real-time. Personalize action items for each person using facial or voice recognition. Automatically set up future meetings with relevant people.

Improve emotional and relational intelligence

Use organizational network data to reveal relationship patterns and interactions. Or use audio and video analytics to reflect the emotional tenor of interactions, prompting individuals to improve communications (e.g., stop interrupting). Advance customer communications by identifying which worker might be best matched to a customer based on personality and communications style.

Personalize communications

Use data from communication applications to suggest the optimal way to communicate with others. Emphasize communications important to you (e.g., if increasing the diversity of your connections is important, then e-mails from people in other social groups would be emphasized).

Helping create value for teams and groups

Transforming functions or business units



Improve agility

Use data from embedded sensors in plants that track workers and equipment to create self-adapting, non-linear assembly lines or work orders. These orders can be generated by AI and modify the steps in the process to meet changing demands and build customized products.

Reduce time to market

Mine communications or work application data to spot and improve work/collaboration patterns within or across functional groups that can reduce time to market.

Capture continuous improvement

Evaluate the digital trail of people's routines and actions to capture the details of how workers creatively try new approaches to continuous improvement. Use this data to help improve outcomes and suggest areas for improvement.

Boost customer satisfaction

Use sound sensors to understand how employees interact with customers to help identify potential improvements in customer service or reduce the need for managers to intervene.



Helping create value for teams and groups

Boosting DEI and belonging efforts



Understand how attitudes and behaviors spread
Based on the strength, diversity, and number of connections with others as determined through organizational network data, identify influencers who can drive greater DEI and Belonging efforts, as well as gaps in belonging or inclusion.

Spot and mitigate implicit bias
Mine text in work, communications, and performance feedback platforms to identify biases, gaps in inclusion efforts, and toxic pockets of conversation that undermine broader DEI and Belonging efforts. Provide personalized feedback on factors like tone and language choice in emails to help limit bias or microaggressions.

Increase inclusion
Use calendar and communications data to measure indicators of inclusion, including formal and informal interactions with senior leadership and mentors across diverse populations, and participation in resource groups.

Create greater pay equity
Instead of relying solely on jobs to benchmark pay, create greater equity in gender compensation by mining work applications and performance management data to benchmark pay based on actual responsibilities and performance.

Spotlight: DEI beyond representation

In addition to mining collaboration, communication, and voice data to identify bias or microaggressions, data and technology can also provide insights into inclusion based on people's interactions with leaders, mentors, and resource or affinity groups.

Organizational network analysis (ONA)—a way to measure and graph connections and patterns of collaboration between people within and across organizations—performed on this data could be particularly helpful in identifying inequities and strengthening DEI efforts.²³

One large service-based organization wanted to better understand whether it was achieving true gender diversity on its teams. On the surface, gender diversity appeared balanced with approximately 44% of the teams made up of women. But how were the teams functioning?

Using ONA, the organization was able to map its networks by gender, revealing that while there was some gender clustering present, the center of the network was solidly gender-mixed—confirming that diverse perspectives were represented at the core of their organization. This is the kind of deep analysis of diversity organizations can use to extend beyond traditional representation metrics to help gain a more nuanced understanding of diversity.²⁴ This also highlights the importance of not zeroing in on an identity characteristic but using new sources of data to understand diversity in more holistic ways.



“If you never go to a social event, never go to a Christmas party, never go to a coffee talk, lunch-and-learn thing and your performance is poor, is that a direct reflection or is it something else? We have that data, but I’m really trying to identify answers to questions like: Are managers doing the right thing? Are they discriminatory? Do they bring in the right development to the right staff? Are we supporting our high performers, or are they just high performers regardless of what you do for them?”

**Managing Director,
Head of Technology,
Financial Services Firm**



Shared value across the organization

By aggregating data across the enterprise, organizations can gain new insights on how practices, behaviors, and decisions may impact the organization. New tools are going beyond a qualitative and imprecise understanding of culture and can now quantify how subtle elements of culture—such as the use of different terms and phrases across the enterprise—highlight potential issues and opportunities for improvement. Similarly, data around how individual workers move, work, and interact throughout the day can greatly improve understanding of how to optimize workplace design, help accelerate change management, and mitigate workforce risk.

Data on work and the workforce can also be used to take a broader, evidence-based approach to strategic decisions and execution. Passively generated, enterprise data on work and the workforce can be combined with other data sources to identify competitive threats, spot acquisition targets, and gain insight into how an organization is positioned in the market. In addition, it can help leaders take a fact-based approach to creating organizational designs that align to core strategies.



Helping create value for the organization

Strengthening agility and change

Building strong cultures

Making the most of M&As

Shaping strategy

Designing organizational structures

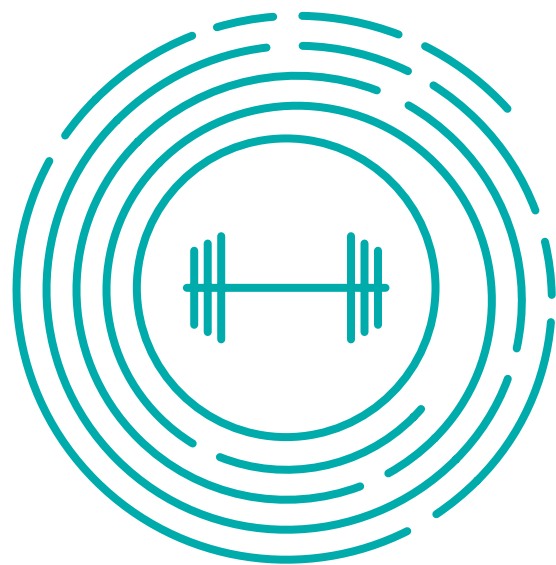
Optimizing the physical workplace

Managing and mitigating risk



Helping create value for the organization

Strengthening agility and change



Determine “as is” state

Use process mining of enterprise transaction systems to start with an “as is” picture of the way people perform work through a process, identifying root causes of issues and opportunities for improvements. Once implemented, measure new process compliance.

Identify change agents

Use organization network data from work applications to help identify influencers who can help organizations navigate change.

Match people to work

Use AI to analyze a change project and map the skills required at each stage based on learning from previous projects. Use individual data on skills and work styles to predict the potential synergy of team members. Analytics can also be used to identify people most likely to flourish in the new, changed environment so people can move into roles and work that best motivate them.

Create a heat map to localize solutions

Take an employee-centric, end-to-end view of change to understand how each employee is being asked to change across multiple change initiatives. Adjust accordingly to prevent change fatigue. Use AI to comb through data from sensors or email and social networks to determine what works for various employee groups and replicate or scale around those efforts. Tailor local solutions based on emotions related to change, trust levels, and hot button issues or concerns.

Helping create value for the organization

Building strong cultures



Analyze culture

Use natural language processing, text analysis, computational linguistics, audio analysis of business meetings, and biometrics to identify and quantify potential declines in sentiment across the workforce or identify microcultures.

Drive culture change

Use organizational network analysis to identify barriers to cultural change as well as target opportunities to spread new values and practices.

Making the most of M&As



Spot potential deals

Use automated tools to scout for potential acquisition or merger opportunities, using data from public social media sites that reveal data on engagement and culture; data on leaders or founders that is predictive of results or indicative of cultural fit; and data on work such as open-source contributions, patents, and citations.

Integrate acquisitions

Use organizational network analysis to spot and solve for organizational silos and bottlenecks. Use this same data to identify informal leaders and those who can act as cultural ambassadors in the acquisition to prioritize for retention and monitor integration effectiveness.

Spotlight: Organizing for innovation

Advances in organizational network analysis are creating new insights into creating connections among individuals and, when appropriate, when to let some members of a group stay separate from the larger organization.

In his book *Adaptive Space*, Michael Arena, former Chief Talent Officer at General Motors (GM) and former Vice President of Talent and Development at Amazon Web Services, writes about how he used data from organizational network analysis to drive innovation and change through agile teams. Teams were formed using four identified network roles—brokers (or boundary spanners), connectors, energizers, and challengers, with these roles being leveraged in different ways depending on whether the goal was to drive innovation in products, services, or new ways of working.

When GM acquired self-driving technology company Cruise Automation, it was careful to not fully absorb the team in order to protect its cohesion and its leadership by the founder—a connector acting as a passionate expert within a network of similarly focused experts. As Arena notes in his book, GM leveraged brokers to connect the entrepreneurial team with the core operational side of the business as needed for access to additional resources such as engineering or testing. This approach helped GM become the first in self-driving test vehicle assembly in a mass-production facility.²⁵



Helping create value for the organization

Shaping strategy



Inform strategic direction

Infer skills and adjacent skills to determine existing capabilities that could lead to new strategic directions.

Use data to create predictive KPIs

Mine data on workers, coupled with financial, customer, and operational data, to derive strategic KPIs based on facts rather than assumptions.²⁶

Perform competitive analysis

Analyze competitor's job posting data to determine competitors' strategy, timing of execution, and create early warning signals of potential workforce poaching.

Execute strategy

Analyze workflow and performance management data to reveal alignment with strategy.

Speed innovation

Use organization network analysis to uncover information about brokers or energizers who can infuse new ideas throughout the organization.



Helping create value for the organization

Designing organizational structures



Determine how work really gets done

Mine work applications to understand what people are really working on and how.²⁷ Use organization network analysis to see the informal organization and roles to inform a new organization design.

Decentralize decision-making rights

Mine project histories, goal setting, project assessments, and more to help track decisions and grant those successful in making decisions more decision-making power. Consider creating a system in which employees transparently rate one another's credibility on several dimensions to create a "believability" rating, giving those with higher believability ratings greater weight in decision-making.²⁸

Empower self-organizing teams

Use AI to help people create self-organizing teams, by mining skills and interests data to suggest people who might wish to join a team. Use data in work applications to help identify others who are working on similar work or objectives.

Helping create value for the organization

Optimizing the physical workplace



Monitor movement

Track movements of people in physical space through smart sensors in the workplace, digital badges, or wearables to inform collaboration strategies or real estate design.

Optimize physical and hybrid workplace design

Pair communications and organizational network data with people's movement data to inform strategies around hybrid and physical workplace design.

Create augmented social reality

Use location tracking from devices to layer social context on top of everyday interactions, surfacing information about people as you encounter them to increase the likelihood of "collisionable encounters."

Helping create value for the organization

Managing and mitigating risk



Monitor workforce risk in real-time

Drawing on data from work applications, wearables, and more, create a dashboard that surfaces workforce risks such as attrition, burnout or wellness risks, compliance challenges, or failures to create an inclusive environment.

Improve cybersecurity

Use advanced analytics to identify deviations from normal employee digital behavior to identify threats and other issues before they become serious.



Spotlight: Rethinking physical proximity

Formal workflows aren't the only processes that can improve with data.

Organizations can also identify areas where informal conversations can augment and improve formal processes. A major energy company recently used workplace badge data to analyze where and how different groups were interacting.

It found, for example, that as cross-functional teams became more dispersed, they had fewer informal interactions and instead relied too heavily on occasional, informal meetings. The company used this information to inform how to best locate teams during an office relocation and, in the process, improved workflow efficiency by 5.3%.²⁹



Shared value for society

Beyond the traditional pressures associated with running an organization, many leaders are likely facing new expectations to add greater value for external stakeholders and society at large. Some investors are raising expectations around ESG goals, while the public is increasingly looking to private businesses to fill the gaps left by civic and government institutions.

In a recent survey, seven in 10 people said the ability for their job to have a societal impact would affect whether they would accept or reject a job.³⁰ Likewise, executives see a strong link between an organization's purpose and its ability to retain talent.

A recent Deloitte survey of C-suite leaders found that 79% agreed that purpose supports talent recruitment, engagement and retention.³¹

Despite this, there is a gap between the perceived importance of purpose and what organizations are currently measuring. The same survey showed that while 79% of executives said their company had a clear and defined purpose strategy, 22% of that group said their company does not prioritize collecting and reporting on purpose-related data.

As new sources of data and technology continue to emerge, organizations can work to overcome this gap and directly connect workforce and organizational measures to larger goals around shared societal priorities. This can allow better alignment of worker activities with an enterprise's purpose, and can create value for workers, as well as the larger ecosystem, by connecting their work to economic development efforts or efforts to develop a more frictionless labor market, for example.

Leading organizations value human sustainability as much as environmental stewardship—which can create value for workers as human beings, not just employees. Society at large could benefit in the long run, as organizations unleash individuals' potential, and help them become healthier, more skilled, employable, and have a greater sense of belonging and purpose.

Helping create value for society

Supporting a frictionless labor market

Meeting ESG goals

Unleashing and reinforcing purpose

Contribute to economic growth and resilience



Helping create value for society

Supporting a frictionless labor market



Share skills demand and supply data

Share data on the supply and demand for skills publicly and in data-sharing consortiums with other organizations to help workers and educational institutions develop high-priority skills.

Make data portable

Using technologies like skills passports, make worker data on skills, performance, training, etc. portable across organizations.

Create talent-sharing consortiums

Share data regarding tasks, projects, and skills needed with other organizations so workers can be temporarily shared across organizations. Talent sharing can serve as an alternative to layoffs, to smooth supply and demand differences across industries, or to spur innovation or worker development.



Helping create value for society

Meeting ESG goals



Monitor and improve the “S” in ESG
Benefits to worker wellbeing and happiness can add up to broader impacts. Organizations can mine data from work applications, and wearables to understand how an organization is contributing to worker’s emotional and physical well-being, skills development, social and relational health, and more.

Measure and report emissions per employee
Mine data on employee commuting (e.g., through company provided cell phone data), business travel, and remote work habits through work applications to assess energy use and emissions. Combine this data with fleet or logistics data, office energy consumption, and supplier data on the same factors to measure and report emissions per employee.

Dynamically quantify reputational risk on ESG issues
Combine private workforce data with social media scraping and other public data sources to identify reputational ESG risks, identifying whether an organization walks their talk when it comes to human rights, labor standards, corruption, and environmental issues.³²

Spotlight: Measuring office activity to reduce emissions

Workforce data can be a key component of how organizations measure their progress toward meeting ESG goals and emission reduction targets.

For instance, Deloitte has equipped more than 2,500 video conference rooms with machine learning capabilities to analyze how many people are in each space and how long they are expected to be there.

This information is used to adjust thermostats to optimal levels for comfort, while lowering energy consumption within a building. This small change—aggregated to an entire workforce and physical real estate space—have the potential to contribute to an organization’s efforts to hit sustainability goals.³³

In the coming years, it may be possible to connect these data sources such as those from conference rooms to other sources of activity within a building to lower emissions while improving the experience of working in a building.



Helping create value for society

Unleashing and reinforcing purpose



Align organizational purpose with how workers understand and experience it

Use natural language processing tools to analyze data from internal social and communication tools to pick up on worker skepticism around authenticity of commitments, awareness, or inconsistent workforce experiences when it comes to organizational purpose.³⁴ Mine data on individuals' goal setting to see workforce alignment with purpose and correlate with satisfaction, engagement, turnover, performance, and other metrics.

Personalize digital nudges

Mine data on the type of work employees are doing to create personalized digital nudges that remind them how their purpose is connected to their everyday work.

Helping create value for society

Contribute to economic growth and resilience



Use location data to spur economic development

Share employee location data (e.g., through company provided cell phones) with other organizations to track mobility patterns of workers across organizations and in local communities to address issues of social equity, racial and socio-economic segregation, and economic development.

Develop thriving communities

Use data on latent, adjacent, and transferrable skills in disadvantaged or pre-worker populations to create public-private partnerships that develop in-demand skills, place workers in jobs, or build their own businesses to contribute to the supply chain.



Spotlight: Advancing economic development through geolocation data

The pandemic scrambled traditional relationships between employers and local communities and undermined many of the casual connections between organizations that can spark innovation.

Understanding how mobility patterns and networking habits have changed, it is possible to track and encourage casual connections between workers of different organizations, improving development and innovation.

In a joint effort funded by the National Science Foundation that launched in early 2023, scientists from Northeastern University and Massachusetts Institute of Technology plan to build a public mobility data platform for the Boston area that is meant to help communities use cell phone-generated data to address issues of social equity, racial and socioeconomic segregation, economic development, and climate resilience.

Knowing how and where people move can help organizations better understand how innovative community networks form, and how they can contribute to economic growth and partnership with diverse communities.³⁵ As the project roles out, researchers hope that this knowledge will contribute to business innovation while improving community resilience.

Chapter 3: Trust: The key to unlocking a quantified organization

How can organizations chart a course toward responsible use of workforce data and technology that creates trust, while navigating trade-offs between risk and opportunity?

Trustworthy companies outperform the S&P 500 by **30-50%**³⁶

While regulation can help steer organizations in the right direction, regulations often lag behind the pace of technological innovation. And with significant variations across the globe, the regulatory landscape can be challenging for multi-nationals to navigate.

A lack of harmonious regulations means that many organizations may be using new technologies and sources of workplace data however they see fit, without taking any additional measures to ensure responsible data use. This haphazard approach can erode worker trust.

Three common scenarios could play out, often at the same time, in how organizations are gathering and using workforce data:

1. They're collecting data but are not sure how to use it, effectively gathering data for the sake of having it.
2. They're gathering and using it without a plan, governance, or responsibility practices in place (beyond meeting regulatory requirements), setting themselves up for significant risk and potential damage to workforce trust.

3. They're underinvesting in technologies that gather or use workforce data, either paralyzed by concerns of worker backlash or unknowledgeable about how to manage data responsibly, leaving a great deal of value on the table.

Organizations can avoid these pitfalls and create value for themselves and other stakeholders by focusing quantified organization efforts around using responsible practices that build trust.

Trust: The key to unlocking a quantified organization

Harnessing new data on work and the workforce and turning it into insights and action can be both a promise and a challenge, creating a tension between the potential for significant rewards but also the potential for significant risks. Done right—in a transparent, responsible way that benefits both workers and organizations—it can increase trust. But done wrong—where biased algorithms scale poor decisions and workers fear rights violations and wrongful terminations—it can damage fairness and trust, with significant impacts to an organization's brand, reputation, and financial performance.

Tensions—between transparency and privacy, between worker agency and organizational need, and between quantifying work and the workforce and recognizing that no one can ever be reduced to a sheer number—must be managed. Quantified organization leaders will likely be those who navigate these tensions to create a new relationship with workers based on trust, through responsible practices like workforce empowerment, transparency, and sharing the benefits in a way that can create new value opportunities for the organization and the worker alike.

Moving at the speed of trust

Trust can be just as important as growth, profitability, and other key performance indicators on the organization's balance sheet. It may not be enough to consider “what” a company does; it can also be equally important to consider “how” it does it.

79% of employees
feel motivated to work
for a trusted employer.³⁷

The relationship between trust and quantification initiatives can be nuanced. Trust is often fragile and easily lost. Missteps can be costly, even for organizations where there is already a strong trust that exists between the worker and the employer. For organizations that are already facing a culture of mistrust, that hill can be an even steeper climb. In short, the potential of the quantified organization can be realized at the speed of trust.

Trust: The key to unlocking a quantified organization



Humanity
Demonstrating empathy and kindness and treating everyone fairly.



Transparency
Openly sharing information, motives, and decisions in straightforward and plain language.



Capability
Creating good work experiences.



Reliability
Consistently delivering on promises and commitments.⁴⁰

To unlock trust and realize the opportunities of the quantified organization, organizations should develop their own frameworks of responsibility that encompass what Deloitte has defined as the essence of trust.³⁸

The factors of trust—humanity, transparency, capability, and reliability—can help guide organizations in collecting, using, and managing data responsibly. Managing an asset as complex as trust requires understanding trust-driving activity enterprise-wide at a level of sufficient depth that enables targeted actions in areas related to













































the workforce and beyond like data integrity and protection as well as customer experience, technology and innovation among others.³⁹

A framework for responsibility

From having a clear understanding of what should be measured to prioritizing shared value, transparency, and worker empowerment, the following principles can provide a starting point for developing a framework for responsibility for using work and workforce data to create shared value.

The four principles of responsibility



A key to unlocking shared value? Building workforce trust by activating principles of responsibility in quantified organization initiatives

Measure the right things	Share responsibility, share value	Practice transparency and privacy	Give workers agency and control
<p>Regularly evaluate links between metrics and outcomes: measuring what is intended and ensuring accurate cause and effect reasoning</p> <div></div> <hr/> <p>Continually audit for bias: using new advances to ensure fairness and impartiality</p> <div></div>	<p>Give to get: offering workers benefits in exchange for their data</p> <div></div> <hr/> <p>Focus on development and growth: avoiding using data and technology as surveillance or a source of punishment</p> <div></div> <hr/> <p>Share governance horizontally and vertically: distributing governance and responsibility across the c-suite and down to individual workers</p> <div></div>	<p>Guard worker privacy: ensuring data is secure and that it is aggregated and anonymized</p> <div></div> <hr/> <p>Transparency first: being open and clear with workers about data collection and use</p> <div></div>	<p>Make it opt-In: granting workers agency and consent in participating in data collection</p> <div></div> <hr/> <p>Empower workers with data management tools: enabling workers to see, manage, and challenge their data</p> <div></div> <hr/> <p>Co-create practices with workers: involving workers from the start in creating the data initiatives themselves</p> <div></div> <hr/> <p>Share ownership of data: enabling some data to be portable, going with the worker</p> <div></div>

Source: Deloitte analysis

Principle 1: Measure the right things

Regularly evaluate the links between metrics and intended outcomes

Trust factors:	 Capability	 Reliability
It is important for organizations to determine that the initiatives they undertake are measuring what they intend to, that cause-and-effect reasoning is accurate, and that analyses aren't oversimplifying complex problems. Consider our earlier example of monitoring truck driver fatigue. While the data collected led to actionable outcomes, they may have not been the right outcomes. Focusing on the individual worker likely oversimplified the problem and overlooked the organizational and structural problems at the root.	Using data to treat the symptoms of a problem only offers a temporary solution—organizations should be willing to go beyond the surface and allow the data to point to organizational changes that may be more challenging or difficult to implement but could ultimately help an organization solve problems and achieve their intended outcomes. Organizations should ensure that the data they collect reflect the metrics they are seeking to capture accurately and reliably.	Case in point: a meta-study concluded that it is impossible to judge emotion by simply looking at a person's face, using technology like facial recognition. ⁴¹ Likewise, productivity likely cannot be accurately evaluated by measuring one's activity. Productivity, instead, should be measured with specific outcomes. Be careful of becoming more enticed by the data and numbers than the actual goals, always asking: just because it can be measured, does it really need to be, and if so, why?



One of the changes I think that we're going to see is not just can I hold the data, can I use the data, but do I want the data? Because the risk to organizations now is so much higher than it was before. Data and big data was always seen as a competitive advantage, for whatever use case. There is now a discussion about whether actually big data is more of a risk than a competitive advantage. So what data do I actually want to hold? Why do I want to hold it? How do I want to use it? Is the risk of holding that data higher than the benefit that I'm going to get from it?"

**Chief Operating Officer,
Financial Services Firm**

40%
of surveyed
employees who give
their employer high
ratings on reliability,
are more likely
to share personal
information with
their employer.⁴²

Trust: The key to unlocking a quantified organization

Continually audit for bias

Trust factors:



Humanity



Capability



Reliability

Organizations need to ensure that data collection and use is fair, equitable and ethical. Quantified organizations approach all parts of the organization with ethics and transparency and embrace technology responsibly such as including responsible AI to ensure AI systems are impartial, transparent and explainable, respectful of privacy, and more (see Deloitte’s framework for responsible AI: Trustworthy Artificial Intelligence (AI)TM).⁴³

New advances in technology can help. Vendors like TrueEra now offer testing tools designed to take a continuous, automated approach to test against bias,⁴⁴ and other vendors like Arthur offer a monitoring and governance solution meant to monitor, measure, and improve machine learning to ensure that models are delivering accurate, transparent, and fair results.⁴⁵


Other advances, like supplementing human data with synthesized data created by software, help enable AI to fill in the gaps of “edge cases” that haven’t happened in the real world and include more-inclusive, less-biased datasets.


Such tools can also enable organizations to measure workforce trust in the enterprise. These trust measurement activities should be executed repeatedly to monitor worker trust levels over time.

Principle 2: Share responsibility, share value

Give to get

Trust factors:

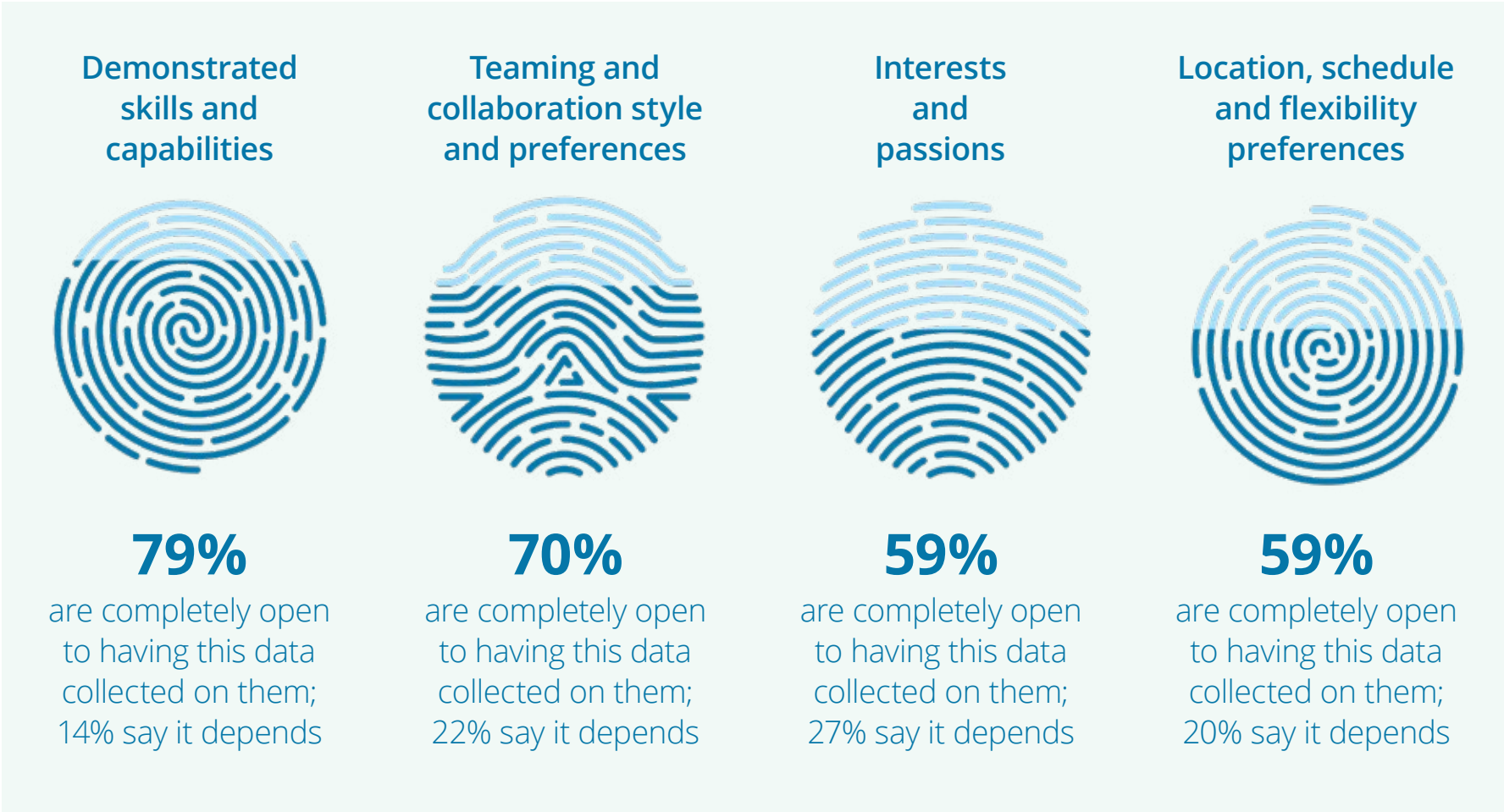
 Humanity

 Transparency

Workers are willing to share data—but there are some conditions. According to a study published in Harvard Business Review, 90% of employees surveyed are willing to let their employers collect and use data about them and their work, but only if it benefits them in some way.⁴⁶ A more recent Deloitte study on skills-based organizations confirmed that the vast majority of workers surveyed are willing to share their data on everything from their skills, interests and passions, preferences, and performance on informal work in projects or internal gigs not directly related to their job, but that many say it would depend on whether their employer offered them benefits in return.⁴⁷

By designing with worker benefits in mind from the start, organizations can create new value propositions for workers—for example, a more customized work experience based on their own unique needs, preferences, and capabilities. Keep in mind that creating this shared value should be a principle applied to the entire workforce ecosystem, including contract workers, partners, and freelance or gig workers.

Figure 1: Workers surveyed are willing to share their data



Source: Deloitte Skills-Based Organization Survey, May-June 2022.

Trust: The key to unlocking a quantified organization

Give to get

Figure 2: But willingness to share is often based on whether they get benefits in exchange



Source: Deloitte Skills-Based Organization Survey, May-June 2022.

Trust: The key to unlocking a quantified organization

Focus on development and growth

Trust factors:

 Humanity

 Capability

When workers feel like their data is being used to judge them, and it leads to a potential dismissal or other penalty, distrust and other overall negative consequences can result. Although there may be situations where data mining can reveal a need for consequences—for example, a pattern of bad behavior or failing to follow security protocols, in general, data should be used to help workers learn, grow, make their jobs easier, find meaning or happiness at work, and realize their potential.

53%
of board members and C-suite executives surveyed are confident that their organization is able to effectively manage risks related to responsible use of workforce data and AI.⁴⁸



We have created confidential channels, public channels, and lots of different ways for employees and others to raise questions and concerns. We have an Ethical Use Advisory Council, which contains both external tech ethics specialists and internal employees. Overall, we’ve created an infrastructure meant to take in as many inputs as possible before we make these really hard decisions. This is a muscle that we have built—everyone in the company owns it.”⁴⁹

Paula Goldman, Salesforce’s first chief ethical and humane use officer, in discussing what it takes to help ensure technology as a force for good with Deloitte’s Beena Ammanath, Deloitte LLP Trustworthy and Ethical Technology leader

Trust: The key to unlocking a quantified organization

Share governance horizontally and vertically

Trust factors:



Transparency



Reliability

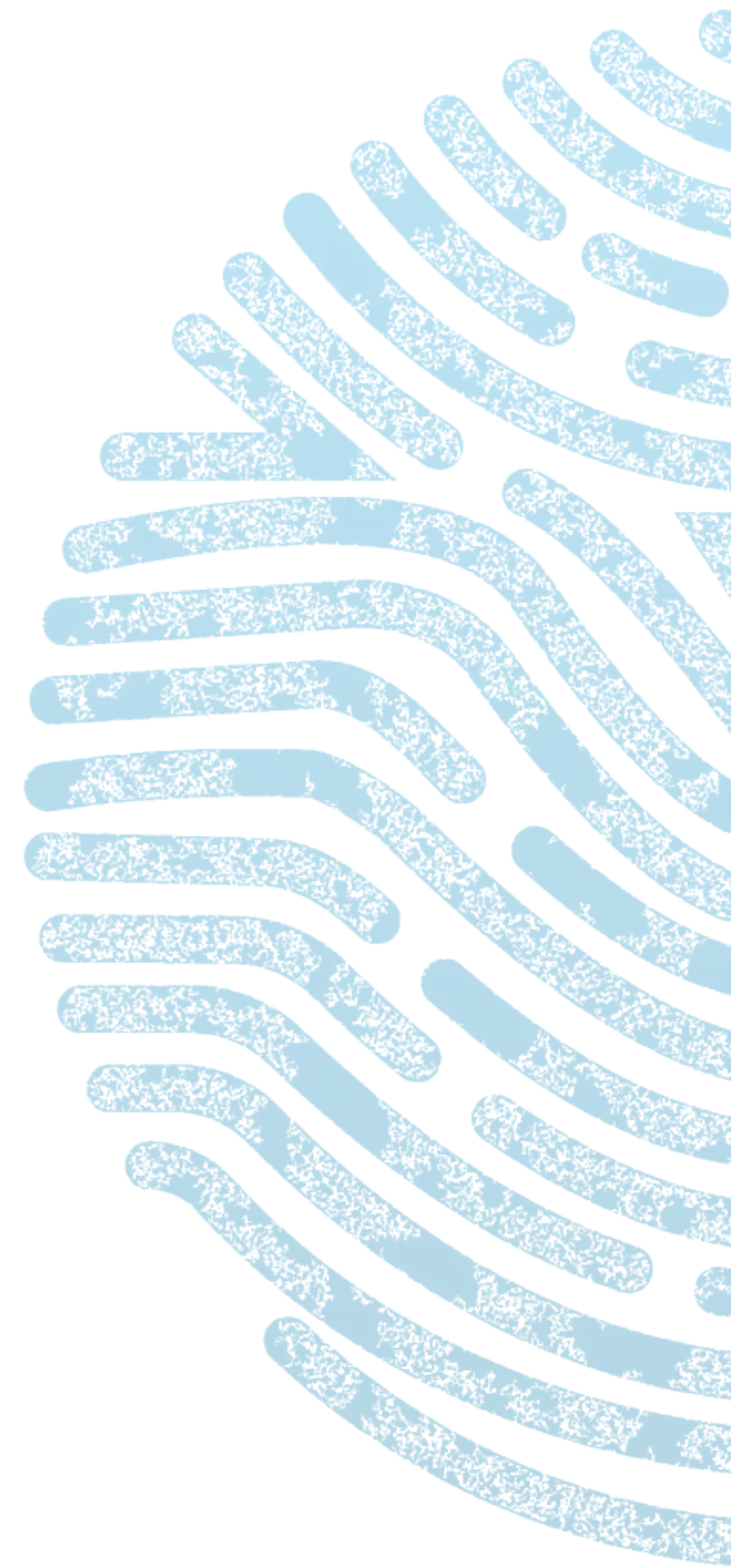
A key to reliable, trust-worthy quantification initiatives is creating a governance system to determine the responsible use of data that includes a plan for collecting, storing, analyzing, and using it – either by AI or human decision making. Although one accountable C-suite level executive may own governance, they should be supported by a cross-functional executive coalition.

For example, a chief human resources officer may be responsible for ensuring that data is being used to improve worker and organizational performance.

A chief technology or information officer may carry responsibility for securing access to data and planning for how to respond to data breaches. A chief finance officer may need to integrate workforce data with operating and financial data, as well as oversee risk and reporting to external stakeholders. And a chief marketing officer may monitor the impact of data-based initiatives on the organization's employer or customer brand.

New roles are emerging as well that can help provide effective oversight, such as Chief Ethical and Humane Use Officer, or in some companies, Chief Trust Officer, Chief Ethics Officer, Chief AI Officer, and Chief Data Officer.⁵⁰


But sharing responsibility shouldn't stop at the C-suite. Everyone from the board down to individual workers has a role to play. Managers, for example, can use new sources of data to help their teams learn, grow, and improve. And employees can play an active role in deciding what data they are willing to share with their employer.




Principle 3: Prioritize transparency and privacy

Guard worker privacy

Trust factors:

 Humanity

 Reliability

Preventing security breaches of worker data is an important factor that builds organizational trust. When asked what pressing issues are most important for their own generation (vs. future generations) to solve, workers surveyed named safeguarding privacy as a top priority—tied with tackling climate change but ranking above issues like encouraging sustainability, balancing purpose and profit, or achieving gender parity.⁵¹

Yet only 28% of workers surveyed strongly agreed that their leadership understands the implications and responsibility of protecting data confidentiality and ensuring security.⁵² Keeping data secure can be helped by new approaches such as limiting data storage time, deleting any incidental data inadvertently collected, and using advanced technology to store and protect data. Some new technologies could even make it possible to acquire insight from data without acquiring or transferring the data itself.⁵³

Workers surveyed named safeguarding privacy as a top priority—tied with tackling climate change but ranking above issues like encouraging sustainability, balancing purpose and profit, or achieving gender parity.

Regional, local, and global regulations around data privacy will likely continue to guide how organizations collect and use data and the internal policies they develop to manage it. For example, an organization with employees distributed globally may be able to gather employee data in some countries but not others due to regional or local privacy laws. The organization may need to choose a path: maintaining different policies for different locations or creating a blanket policy that adheres to the most restrictive regulations.

Trust: The key to unlocking a quantified organization

Guard worker privacy

Organizations will also need to consider the evolving nature of regulations across regions when making this determination. For example, employee privacy has historically been stronger in regions such as Europe, but is now gaining traction and evolving in places like the US. Even at the US state level, the regulatory landscape is evolving. The California Privacy Rights Act 2023, for example, affords employee data an array of privacy protections previously only afforded consumer data.

As a result, California employers are now required to notify employees (and prospective employees) as to the kinds of data they collect, what they will do with that data, and ways for affected parties to correct and, in most cases, request deletion of the data.⁵⁴

When possible, it’s also important to help workers control how their individual, personal data is shared across an organization. While workers may be open to sharing their individual skills data with the entire organization, for example, they may not be so open to sharing their individual data about their emotions or performance data. Aggregating and anonymizing data before sharing it can help, as well as involving workers in creating data privacy policies.

Lloyds’s Banking Group’s ethics charter for data and analytics

To help provide guidance and consistency for the responsible use of people data and analytics, Lloyd’s Banking Group created an ethics charter, consisting of nine guiding principles. Included are principles like: “Protect colleagues by using anonymous or aggregated data and never name or allow the identification of individuals in published findings,” “Strive to improve the working lives of colleagues by applying consistent, fair, and unbiased analytical methodologies,” and “Provide data-led insights that empower decision-makers to drive impact for their colleagues, customers, and stakeholders.”⁵⁵

Corporate culture may be the biggest barrier to realizing value from worker data

When respondents to Deloitte’s 2023 Human Capital Trends survey were asked to identify top barriers to realizing value from worker data, 27% of respondents cited culture, making it the most common barrier. However, “culture” may be a broad proxy for misaligned values or disagreements over if, how, or when worker data should be used.⁵⁶ To realize value from data, organizations should strive for a culture of trust and transparency.

Trust: The key to unlocking a quantified organization

Guard worker privacy

Trust factors:

 Transparency

 Capability

Being transparent with workers about what an organization is tracking and why can help mitigate the risk of potential backlash and elevate trust. Gartner found that only 30% of employees surveyed were comfortable with their employer monitoring their email. But in the same study, when an employer shared what they would be monitoring and explained why, more than 50% of workers reported being comfortable with it.⁵⁷

Organizations should also be transparent about their data governance rules—how long the data is being stored, whether the data will be shared in individual or aggregated form, and who (internally or externally) will have access to the data (see Deloitte’s framework for Technology, Trust and Ethics).⁵⁸



Principle 4: Give workers agency and share control

Make it opt-in

Trust factors:

 Humanity

 Transparency

 Capability

While opt-in isn’t possible in some situations—for example, when an organization monitors workers’ digital applications to detect abnormal patterns of behavior that could represent potential security threats—there are also situations where organizations can provide opportunities for workers to choose to share their data. Asking permission shouldn’t be buried in legalese at the bottom of worker’s employment contract, however.

It should be presented in clear, straightforward language when any new data is collected, and clearly spell out what data is being collected, who will see it, how it will be protected, and the benefits that can be achieved, as well as a means for the employee to correct and potentially delete certain employer-held data. The time frame for data collection should also be clear, as well as what data might be collected when a worker isn’t working (e.g., when location data from company-provided cell phones is being used).

A global health provider offers workers opt-out options

When one global health care provider mined employee data from communications and collaboration systems to conduct an organizational network analysis to optimize cross-functional collaboration, they offered employees the ability to opt out of data collection. To ensure that they respected employee permissions, the organization used technology from TrustSphere, a relationship analytics platform with embedded privacy and data protections to help ensure compliance with global privacy legislation (e.g., GDPR), ethical codes of conduct and other regulatory frameworks—including data de-identification, data aggregation, and data minimization. The approach is based on notification and opt-out to ensure trust, transparency, and choice.⁵⁹

Trust: The key to unlocking a quantified organization

Empower workers with data management tools

Trust factors:  Transparency  Capability  Reliability

By providing workers a platform to see the data collected on them as individuals, as well as the aggregate data collected on them as part of teams or groups, organizations can provide greater transparency and build trust by giving employees an opportunity to ensure their data is correct and challenge it if they feel it isn't. Organizations should build in processes to allow workers to question or voice concerns when their data is used in algorithms—either through the platform itself, or by connecting with groups like an internal ethics review board.

New technologies and platforms can also help workers control who has access to their data and see who has accessed it, and grant permission (or not) for their data to be used for a purpose other than the one for which it was originally intended. They can also provide workers with any interpretations or analyses drawn from their data.

Co-create practices with workers

Trust factors:  Humanity  Transparency  Capability

Instead of designing quantified organization initiatives that collect and use worker data as a top-down exercise, consider involving workers from the start in co-creating the practices themselves. This could include involving them in choosing what metrics will be useful and relevant in improving their experience at work and collaboratively deciding how the data can be used to inform action by AI or human judgement.

30%
of organizations surveyed by Deloitte's 2022 State of AI survey say they are involving workers in participative design of AI⁶⁰

SLB co-creates an updated work environment with workers

Wall-mounted cameras observe workers and assets at a maintenance and manufacturing facility for the oil and gas company SLB, with AI turning the aggregated and anonymized video data into insights that look at patterns of productivity. Workers are involved from the start, choosing to opt-in to data collection, viewing the results of the AI analysis, and collaboratively problem solving on how to use the data to improve their experience and results. For example, data insights led employees to modify rest areas and take more frequent breaks to minimize fatigue.⁶¹

Trust: The key to unlocking a quantified organization

Share ownership of data

Trust factors:



Humanity

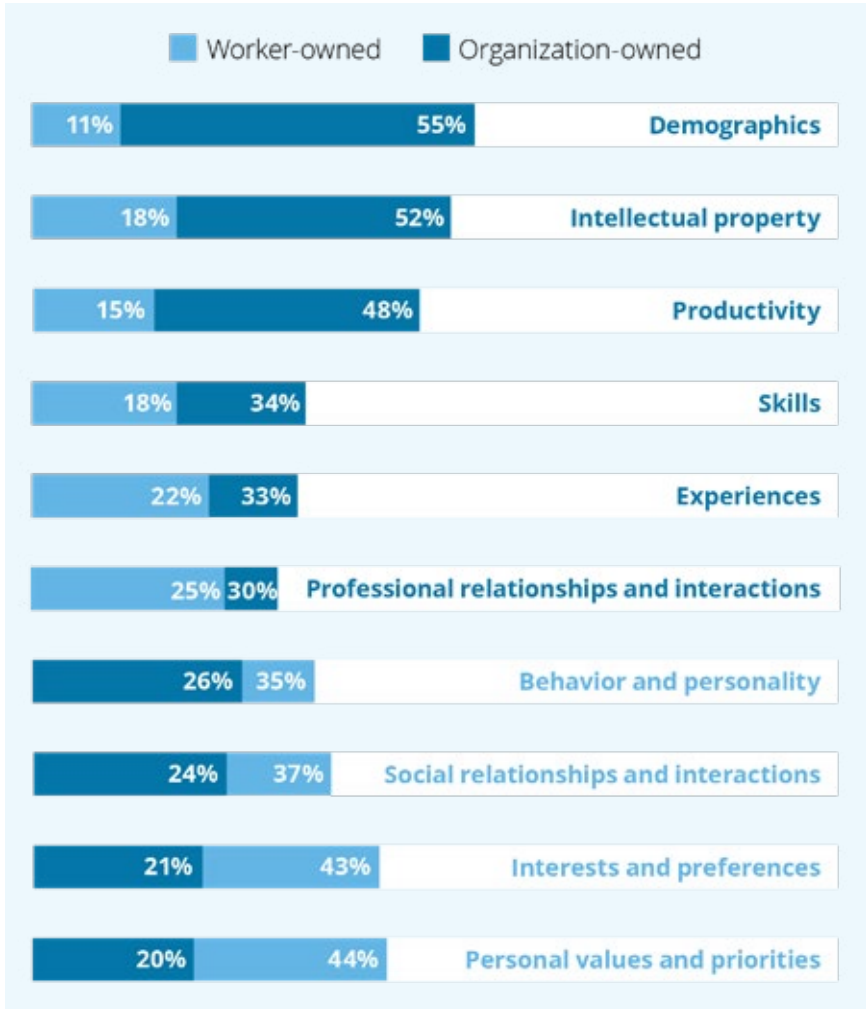


Capability

Increasingly, organizations seem to be moving to a data ownership structure that is either shared or worker-owned, giving workers more power and control over their personal data and influence over how it's used. According to the Deloitte 2023 Global Human Capital Trends survey, a majority of organizations (61%) describe their existing data ownership structure as either shared or worker-owned.⁶²

When data is owned by the worker, new technologies help allow employer-verified data to be portable, going with the worker when they leave an organization. According to our Deloitte Skills-Based Organization survey, 76% of workers surveyed say they want their data to be portable, and just over half of business and HR leaders are open to it.⁶³ Portable, trust-worthy data can benefit both employers and workers by creating a more transparent and efficient labor market.

Figure 3: Perspectives on worker data ownership by organization vs. workers



Source: Deloitte 2023 Global Human Capital Trends survey.

The quantified organization, today and tomorrow

As organizations continue to gain richer, more high-resolution data on work and the workforce, there may be potential to gain new insights and advance organizational strategy and growth. Where recent efforts may have focused primarily on individual worker data, the new era of the quantified organization can allow leaders to have a holistic view of their organization across levels and use data to identify the areas where true organizational change can have an impact—for employees, for teams and groups, for the organization as a whole, and for society at large.

With an exponentially-growing volume of data available, focusing an organization's efforts on a deep understanding of what data should be collected—and linking those initiatives to specific organizational goals and outcomes can allow the organization to tap into important sources of value that might otherwise be left on the table. In a quantified organization, when value is created at one level of the organization, it can reinforce and amplify value across other levels.

The quantified organization journey is likely not without its risks, however. Collecting the wrong data, failing to link analytic efforts to intended outcomes, and alienating employees in the process can erode worker trust and derail the best efforts. Advances in technology will likely continue to pose new questions and create additional challenges for quantified organizations to consider:

How can an organization balance privacy with sharing data for the greater good?

How should it weigh the qualitative with the quantitative—ensuring people are never turned into reductionist numbers?

Will quantifying workers' performance, skills, and achievements result in a kind of hyper-meritocracy, in which the most highly valued workers will be more easily discovered and disproportionately rewarded? Or will it cause an organization to fall into what Daniel Markovits calls "The Meritocracy Trap," which he claims leads to greater inequality and stifled social mobility?⁶⁴

The Quantified Organization

Many of these challenges—such as questions around worker privacy—may be well-known but could intensify as technical advances allow enterprises to infer detailed, highly personal information. Other dilemmas, such as balancing questions around customization with digital determinism—where workers inadvertently get locked out of opportunities based on efforts to customize their work experience—could become increasingly tricky as management is increasingly done algorithmically.

But these challenges don’t need to be limiting. Done right, implementing a quantified organization strategy can both build trust between organizations and their employees and yield critical information that can improve an organization’s financial, reputational, and operational performance. Organizations that focus on building trust when collecting workforce data and using that data to create shared value should be able to manage these challenges and thrive in the years ahead.



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Endnotes

- i. “Matillion and IDG Survey: Data Growth is Real, and 3 Other Key Findings,” Matillion, January 26, 2022.
- ii. Christopher Mims, “More Bosses Are Spying on Quiet Quitters. It Could Backfire.” Wall Street Journal, September 17, 2022.
1. Mark Ogden, “Despite Ronaldo’s sneaky attempt to take credit, stellar Fernandes powers Portugal to World Cup knockouts.” ESPN, November 28, 2022.
2. Ben Dowsett, “The World Cup’s New High-Tech Ball Will Change Soccer Forever,” FiveThirtyEight, November 22, 2022.
3. “Ultra-Wideband (UWB) Enables Smart Factory of the Future,” Qorvo, August 2022.
4. Ben Dowsett, “The World Cup’s New High-Tech Ball Will Change Soccer Forever,” FiveThirtyEight, November 22, 2022.
5. Christopher Mims, “More Bosses Are Spying on Quiet Quitters. It Could Backfire.” Wall Street Journal, September 17, 2022.
6. 2022 Deloitte TrustIQ Benchmark Survey.
7. “Killing Time at Work ’22,” Qatalog, Accessed March 21, 2023.
8. Mark Banfield, “78% of Employers Are Using Remote Work Tools to Spy on You. Here’s a More Effective (and Ethical) Approach to Tracking Employee Productivity.” Entrepreneur, Dec. 23, 2022.
9. Jon Mariani and Kelly Monahan, “Will IoT Bring us the Quantified Employee?” Deloitte Insights, May 24, 2016.
10. Christopher Mims, “More Bosses Are Spying on Quiet Quitters. It Could Backfire.” Wall Street Journal, September 17, 2022.
11. Karen Levy, Data Driven: Truckers, Technology and the New Workplace Surveillance, Princeton University Press, 2023.
12. Johnny Wood, “Feeling sleepy in the office? This Japanese technology detects tired workers and blasts cold air into the room” World Economic Forum, July 31, 2018.
13. Karen Levy, Data Driven: Truckers, Technology and the New Workplace Surveillance, Princeton University Press, 2023.
14. Roger Dean Duncan. “Workplace Engagement is Good. Happiness is Even Better.” Forbes. July 27, 2021.
15. Suchit Leesa-Nguansuk, “Hitachi’s AI for Employee Joy,” Feb 7, 2020, Bangkok Post.
16. Suchit Leesa-Nguansuk, “Hitachi’s AI for Employee Joy,” Feb 7, 2020, Bangkok Post.
17. Sue Cantrell, Michael Griffiths, Robin Jones, and Julie Hiipakka, “Building tomorrow’s skills-based organization”, Deloitte, November 2, 2022.
18. Sue Cantrell, Michael Griffiths, Robin Jones, and Julie Hiipakka, “Building tomorrow’s skills-based organization”, Deloitte, November 2, 2022.
19. “Why GE Healthcare introduced TechWolf” Techwolf, accessed March 21, 2023.
20. Nita A. Farhany, “Neurotech at work” Harvard Business Review, March-April 2023.
21. Alejandro de la Garza, “This AI Software Is ‘Coaching’ Customer Service Workers. Soon It Could Be Bossing You Around, Too” Time, July 8, 2019.
22. John Sprovieri, “Video Analytics Help Auto Parts Assembler Improve Cycle Time” Assembly Magazine, December 18, 2022.
23. Michael Arena, “Diversity at the Core of the Network,” HR Exchange Network, September 18, 2019.

The Quantified Organization

24. Michael Arena, "Diversity at the Core of the Network," HR Exchange Network, September 18, 2019.

25. Rob Cross, Heidi Gardner, and Alia Crocker, "Adaptive Space. Networks for Agility: Collaborative Practices Critical to Agile Transformation" Connected Commons, March 2019.

26. Dave Kiron, "AI Can Change How You Measure — and How You Manage" MIT Sloan Management Review, March 8, 2022.

27. Tom Malone, What AI will do to corporate hierarchies, WSJ, April 1, 2019.

28. Ray Dalio, Principle: Life and Work, 2017.

29. "Energy Company Relocation Case Study" Humanyze, accessed March 21, 2023.

30. "Special Report: Trust in the Workplace" 2022 Edelman Trust Barometer, accessed March 21, 2023.

31. Shira Beery, John Mennel, and Kwasi Mitchell. "How purpose delivers value in every function and for the enterprise." Deloitte. 2022.

32. RepRisk | RepRisk methodology overview. Accessed March 27, 2023.

33. Internal interview. Feb 28, 2023.

34. Julie Lodge-Jarrett, "Ford's employee sentiment strategy: Ask/listen/observe," The Institute for Corporate Productivity, April 1, 2020.

35. Alena Kuzub, "Northeastern and MIT researchers pledge to unlock power of cellphone-generated mobility data to benefit neighborhoods" Northeastern News, October 19, 2022.

36. Lawrence A. Cunningham, "Opinion: Why high-quality, trustworthy companies have beaten the S&P 500 by 30%-50% ," Market Watch, July 3, 2021.

37. Deloitte HX TrustID survey, May 2020.

38. Michael Bondar, Natasha, Buckley, and Roxana Corduneanu, "Can you measure trust within your organization?" Deloitte Insights. Feb 9, 2022.

39. Michael Bondar, Natasha, Buckley, and Roxana Corduneanu, "Can you measure trust within your organization?" Deloitte Insights. Feb 9, 2022.

40. Ashley Reichheld, Amelia Dunlop, "The Four Factors of Trust, How organizations can earn lifelong loyalty," John Wiley & Sons, 2022 (page 25).

41. Lisa Feldman Barrett, Ralph Adolphs, Stacy Marsella, Aleix M. Martinez, and Seth D. Pollak, "Emotional Expressions Reconsidered: Challenges to Inferring Emotion From Human Facial Movements," Psychological Science in the Public Interest, July 17, 2019.

42. Ashley Reichheld and Amelia Dunlop, "How to Build a High-Trust Workplace," MIT Sloan Management Review (Digital), January 24, 2023.

43. Trustworthy Artificial Intelligence (AI).™

44. Sean Michael Kerner, "TruEra brings automated AI testing to dev workflows for accelerated model development" Venture Beat, October 25, 2022.

45. Arthur Recognized in 2022 Gartner® Hype Cycle™ for Data and Analytics Governance, July 1, 2022.

46. Ellyn Shook, Eva Sage-Gavin, and Susan Cantrell, "How Companies Can Use Employee Data Responsibly," Harvard Business Review, February 15, 2019.

47. Sue Cantrell, Michael Griffiths, Robin Jones, and Julie Hiipakka, "Building tomorrow's skills-based organization", Deloitte, November 2, 2022.

The Quantified Organization

48. Deloitte Workforce Risk research, 2022.
49. "Salesforce's Chief Ethical Use Officer: 'People Won't Use Tech They Don't Trust,'" Wall Street Journal, April 20, 2022.
50. "Chief Trust Officer Rising: Technology companies like SAP are making trust a C-level leadership priority to help boost business performance" Wall Street Journal, January 17, 2023.
51. P. Renjen, "Industry 4.0: At the intersection of readiness and responsibility" Deloitte Insights, January 20, 2020.
52. P. Renjen, "Industry 4.0: At the intersection of readiness and responsibility" Deloitte Insights, January 20, 2020.
53. Hossein Rahnama and Alex "Sandy" Pentland, "The New Rules of Data Privacy," Harvard Business Review, February 25, 2022.
54. Nate Garhart and Rebecca Stephens, "Employer Exemptions Under the CCPA," SHRM, January 20, 2023.
55. Jonathan Ferrar and David Green, Excellence in People Analytics: How to use Workforce Data to Create Business Value, 2021.
56. Steve Hatfield, Tara Mahoutchian, Nate Paynter, and Nic Scoble-Williams, "Negotiating worker data: Organizations and workers vie for control of worker data when they should focus on mutual benefits" Deloitte Human Capital Trends 2023, January 9, 2023.
57. Reid Blackman, "How to Monitor Your Employees – While Respecting Their Privacy" Harvard Business Review, May 28, 2020.
58. Technology Trust Ethics Framework | Deloitte US.
59. David Green, "The Role of Network Analytics (ONA) in Ensuring Team Collaboration and Well Being" my HRFuture, April 27, 2020.
60. "Fueling the AI transformation: Four key actions powering widespread value from AI, right now." Deloitte's State of AI in the Enterprise, 5th Edition Report. October 2022.
61. "Digital Equipment Monitoring with OneStim," SLB solutions, May 2, 2018.
62. Steve Hatfield, Tara Mahoutchian, Nate Paynter, and Nic Scoble-Williams, "Negotiating worker data: Organizations and workers vie for control of worker data when they should focus on mutual benefits" Deloitte Human Capital Trends 2023, January 9, 2023.
63. Sue Cantrell, Michael Griffiths, Robin Jones, and Julie Hiipakka, "Building tomorrow's skills-based organization", Deloitte, November 2, 2022.
64. Daniel Markovitz, The Meritocracy Trap: How America's Foundational Myth Feeds Inequality, Dismantles the Middle Class, and Devours the Elite, Penguin Press, 2019.



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