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]

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.

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."
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> **COO, Financial Services Firm**

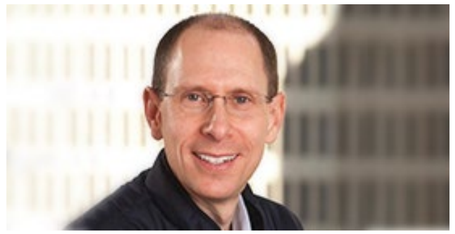
But even if a system can identify a fatigued worker, it's not always clear what to do about it. Karen Levy, a sociology professor who has studied the impacts of monitoring technology in the trucking industry, notes that efforts to track trucker fatigue have traditionally focused on measuring the individual 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.

Despite the potential this new data on work and the workforce brings, there may also be significant risks to consider. Biased algorithms that scale the wrong decisions, risks to privacy, worker rights violations—poorly planned approaches to quantification have the potential to undermine trust and fairness and impact an organization's brand, reputation, and financial performance. The winners will likely be those who manage these risks by focusing on creating relationships with workers based on trust, transparency, and sharing benefits broadly across the enterprise and beyond.

Key Contacts



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Endnotes

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.

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