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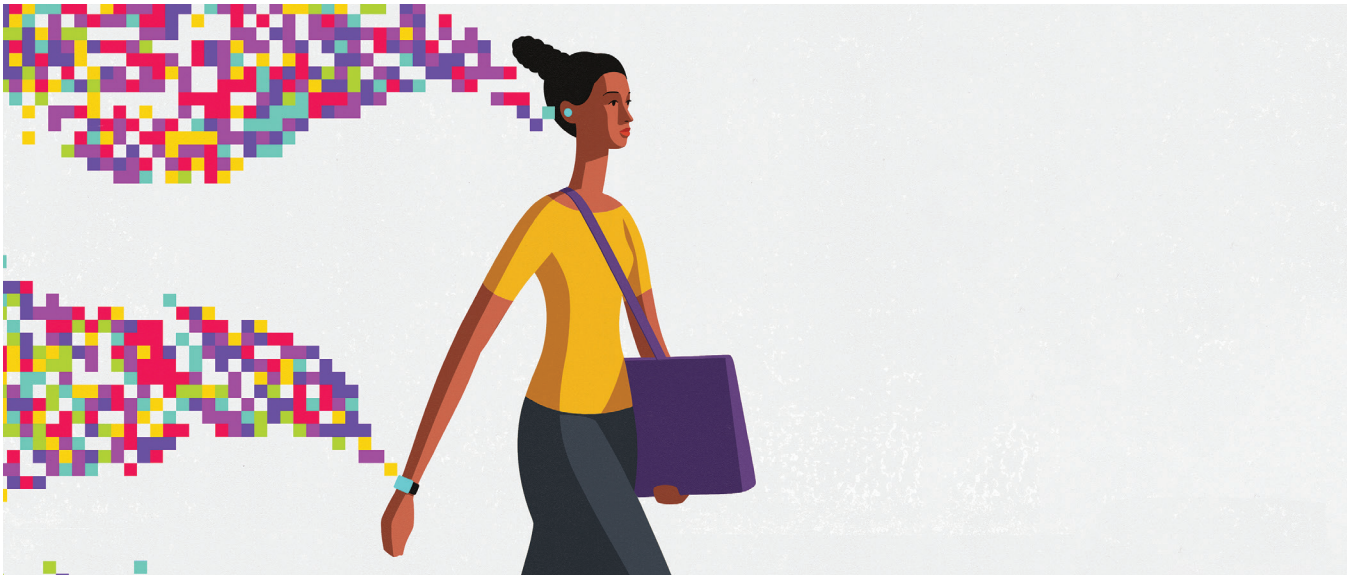


Technologies that touch you

by Maggie Wooll, Steve Hatfield, and Duleesha Kulasooriya

ILLUSTRATION BY JON KRAUSE

Deloitte. Insights

Technologies that touch you

How technology can help people bring their best selves to work

BY MAGGIE WOOLL, STEVE HATFIELD, AND DULEESHA KULASOORIYA

ILLUSTRATION BY JON KRAUSE

Taylor pops into the lobby vending space on the way to the elevator. She considers the day ahead as the scanner reads her bio-card: She's low on iron and B-3, a bit overhydrated, and shows early signs of the cold virus going around. Today is a group day, so she dials down focus and dials up the energy and collaboration selections. "Good morning, Taylor," the vending host, Shelley, waves from her stool. "New seasonal flavors today." Taylor pauses, then overrides her default flavor and chooses pumpkin—it is the first day of fall, after all, she thinks.

As the smoothie machine begins humming, Shelley mentions a favorite new TV series, then asks, "You doing okay? You seem preoccupied." "Just a little tired," Taylor says. "I've been heads-down working with a remote team for a month. I get to lead a session today, though." "You'll do great," Shelley says. "And if you want a nutrition consultation, I have slots after 2 p.m." Taylor takes a slot tomorrow afternoon and grabs her personalized smoothie—this should get me through the customer-needs profiling, analytics challenge, and new-member onboarding*, she thinks as she turns to go. Her wrist vibrates, and she looks down to see a pulsing smiley face. "Thanks for chatting, Shelley—I'll definitely check out that show."*

What does it mean to thrive at work today?

Technology enthusiasts have conjured utopian visions of the *workplace of tomorrow* for nearly as long as there have been workplaces. But actual workers—as distinct from bean-counters focused on efficiency—don't always see innovations as improvements. Now, new technologies aimed at elevating human performance have the potential to change the workplace in fresh ways.

BEYOND TOUCHY-FEELY

Over the years, technologies aimed at improving performance have often heightened stress and pressure, doing little to either ease employees' workload or boost their creativity. But as work itself changes, along with the demands on individuals in the workforce, organizations—aided by cognitive technologies—are starting to shift the way they approach human performance.

Consider Taylor's technology-augmented arrival at work, with innovations throughout to aid her well-being and ability to contribute and collaborate. All of the technologies depicted in her story already exist in some form, albeit not necessarily yet at the price point, scale, or reliability to make them accessible and useful in the workplace. Many are becoming available to individual consumers. But most workplaces are unprepared to benefit from them—the work and the work environments aren't designed to support, accommodate, or benefit from advances in human performance. Too many leaders dismiss these technologies and their potential benefits as touchy-feely or irrelevant to productive work.

Work, though, is changing, on both an individual and organizational level, and that alters the equation of what workplace technologies are worth considering.

In this article, we will explore the ways in which work and the demands on individuals in the workforce are changing—and how that shifts how organizations can approach human performance in the workplace. First, we will look at the array of technologies emerging to support human performance and delve into what it means to thrive at work.

What are the technologies that touch you?

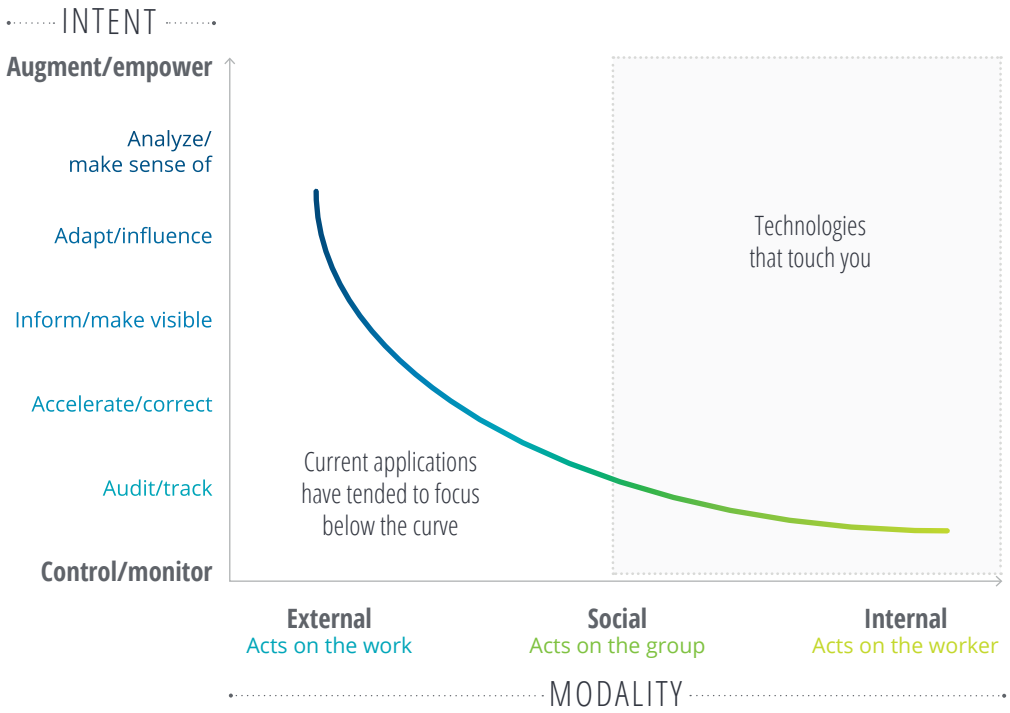
Technology is reshaping the day-to-day digital reality of the workforce through every aspect of employees' lives, and generating new tools to reshape their environment and performance. One fast-moving development: the emergence of technologies anchored on the individual.

As figure 1 suggests, technologies that might be used to improve performance can be thought of along a spectrum: from those designed to have an impact that is primarily external, focused on the work and how it is done, to those that are focused on the individual's body and physical, physiological, and psychological function. Somewhere in between are the technologies that act on the group—some focused on the functioning of a team or group, some on the dynamics and functioning of the collective organization, some on the participation and performance of the collection of individuals coming together in a group. Even the externally focused technologies can have significant impact on the individual's physical, cognitive, emotional, and social states—often in unexpected or unintended ways. And the same basic technologies can be deployed with very different effects depending on the use case and what they target.

Organizations have tended to focus on the left-hand side, on the work. Think about workflow

FIGURE 1

Technologies to help improve performance



Note: The vertical scale illustrates the range of possibilities, which are slightly different depending on whether they are being applied to the work, to the group, or to the individual.

Source: Deloitte analysis.

automation, data collection and analysis, pattern recognition, rudimentary triage, and routing—implementing technology specifically to boost productivity. The individual worker can do more of what they currently do or do more of the higher-value parts of what they currently do. In the best cases, the technology frees the individual from rote tasks to focus on creating new and expanded value.[1]

Less familiar is the right-hand side. We can think of *technologies that touch* as the array of technologies designed to track, influence, or support human performance by acting on the individual rather than on the work. These might target the mind or body directly, physically or physiologically, or indirectly through the spaces and communities that shape our emotional, mental, social, and physical well-being.[2]

As figure 2 illustrates, these less-familiar transformative technologies target solutions that help workers master distraction, quell anxiety, be open to new ideas, connect with others, break mental models, let go of unhelpful beliefs and regulate energy and emotion, have presence, build trust, and learn faster. There has been an explosion of interest and research in this space, from both practitioners and researchers as well as investors. In part, this is the result of advances in neuroscience, neuropsychology, and biochemistry, as well as in the exponential technologies related to sensors, processing, analytics, and materials. For example, the quality and accuracy of sensors have improved, and the types of sensors commonly available have become more sophisticated—measuring heart rate variability, blood pressure, skin temperature and conductivity, and even ambient light[3] rather than just steps and GPS location—providing more nuanced and clinically relevant insight into the individual through data that is increasingly contextualized and longitudinal.[4] As the cost of technologies used to enhance performance in professional sports and extreme work environments falls, individual consumers are beginning to access the products and services built off them, and organizations can start exploring how they can improve human performance in the workplace.

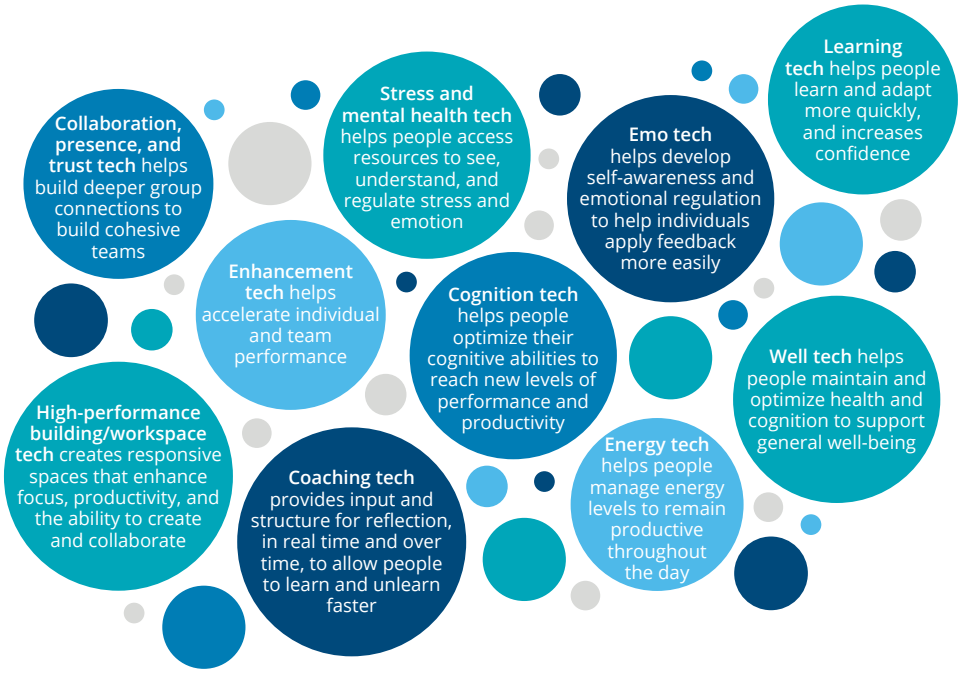
What *are* these technologies, and how do they work?

Many performance-enhancing technologies are "hacks." They work from the outside in, designed to augment our own awareness, motivation, and

Shelley's "good luck" echoes behind Taylor as she heads out. She feels more at ease, even before a tiny set of angel wings flutters across her wrist and a message asks her to rate the interaction; she gives it a 4/5 and is rewarded to see that her perception was aligned. Only day two of the Impact Tracker challenge, and she'd almost forgotten to even say thank you—guess that's why I'm doing it*, she thought. When Taylor steps off the elevator, her watch has interfaced with the scheduling system and flashes with a room number. As she nears the conference room, it pulses once with a "proximity opportunity," so she pauses to read the message on her phone: Dan, an old teammate, happens to be on this floor today, showing as available and potentially working on a related topic. With a few extra minutes before her meeting, Taylor accepts the opportunity and detours around a corner to where Dan is drawing at a digital wall. After some catching up, Taylor mentions her current project, and Dan highlights some interesting connections to the model he was sketching. They agree to talk again, their personal assistants lock in a time later in the week, and Taylor walks away with a link to the wall, excited to have an entirely new use case for the analytics problem on which she's been working. As a bonus, her impact tracker logs another in-sync interaction.*

FIGURE 2

Transformative solutions are built on an array of foundational sciences



Major methods of measurement

- Heart rate/heart rate variability
- Breath rate/CO_2 levels
- Muscle movement/tension
- Body movement/temperature
- Skin conductance
- Body fluid composition
- Electroencephalogram
- Posture
- Galvanic skin response
- Sleep quality/quantity
- DNA/RNA/biome
- Eye tracking
- Hormones
- Inflammation
- Blood pressure/glucose
- Mood/meaning tracking
- Pattern/behavior recognition
- Emotion detection
- Voice/tone/word recognition
- Facial recognition

Enabling technologies

- Artificial intelligence/ machine learning
- Robotics
- Pattern/emotion recognition
- Advanced sensors/mobile
- Networks
- Massive data sets
- Biotechnology
- Bioinformatics
- Nanotech
- Digital fabrication
- Augmented/virtual reality
- Blockchain

Underlying research domains

- Neuroscience
- Medicine
- Genetics
- Physiology
- Behavioral psychology
- Behavioral economics
- Awe/flow
- Compassion
- Resilience
- Meditation
- Happiness/meaning
- Immersion (AR/VR)
- Affective computing
- Persuasive computing

Source: Nichol Bradford, Transformative Tech Lab.

understanding to accelerate cognition, access productive states of consciousness, or achieve levels of self-regulation and control that were previously accessible only through long commitment to a disciplined practice, such as Zen meditation.

For example, a behavior-trainer device might use a combination of sensors that measure heart-rate variability, electrodermal responses, and body temperature, as well as a motion or ambient light, to detect and log an individual's emotional responses throughout the day. Applying more advanced machine learning to process and analyze these data sets, such a device can allow the user to see in context their emotional response patterns, bringing greater self-awareness. It might also feed the user a personalized check-in or intervention at the moment a certain emotional response has been registered, helping to develop individualized tools for self-regulation and control in addition to self-awareness.[5] This type of data can reveal patterns and inform personal or guided reflection and, with some guidance, can generate insights that can spur motivation or effect behavior change.

Not every one of these technologies works through tracking. Virtual reality (VR) technologies can create immersive environments that modify our sensory experience to induce or shift mood as well as provide opportunities to repeatedly experience highly emotional events—such as standing on a high beam, facing an angry customer, or giving feedback to a staff member—either for training or other types of therapy.[6] Cognition tech such as neurostimulation works by actually delivering an electric current directly into the brain to trigger neuron-firing to speed up the rate of forming new pathways while learning a new skill.[7]

As these examples make clear, these technologies can't necessarily replace a disciplined practice. But they can be a gateway for many just getting started. The potential is that by delivering noticeable results sooner, more people will be motivated to achieve greater mental, physical, emotional stability—and capable of adopting the practices that will keep them there, ready to learn, adapt, and thrive.

Great power, great responsibility

These technologies are deeply personal. By opening windows onto our behaviors, habits, and interactions, and even our patterns of thought, emotions, and biological and mental processes that we ourselves are often not fully aware of, they have the potential to aid both productivity and creativity. Many of these technologies are operating on, or generating, data that is direct and unmediated, collected straight from our physical, biological, and chemical selves, charting our physiological responses, our self-reported moods, and our emotions.

From these robust, high-fidelity data points is the promise of insight, self-knowledge, and self-control—the potential to connect the dots and name the constellations of our biology and psychology. But because this data is so powerful, there is a real risk of getting it wrong—and getting it wrong in a way that violates trust and damages relationships with customers and the workforce.

Companies need to be extremely careful and rigorous in questioning their intent, and the intent of their managers, in adopting a technology and keeping the potential for unintended consequences front-and-center. *Adopting the individual's perspective* and *making trust paramount* must form the basic guardrails of any foray into elevating human performance through technologies that touch. Doing so will go a long way toward setting the right tone to avoid getting it wrong—abusing the technology, damaging trust, or otherwise destroying its potential value for the workforce.

THE PERFORMANCE MENTALITY

We don't tend to talk about the human body and its physicality in business, preferring the bloodless realm of numbers, strategies, and controls or the leadership mind. So while the science is more complex than we can cover here, a brief explanation of physiology may be useful.

First, when we talk about the brain, we're really talking about the nervous system, which encompasses the brain as well as the body, because so much of our body and our biological systems interface with the nervous system. Among the most basic mechanisms neurobiologists are studying is how breath, heart rate, and levels of autonomic arousal interface with how the brain processes information, forms connections, and makes decisions. If an individual can become aware of and control their breathing and heart rate, they can begin to self-regulate and choose to operate from a state—whether that is calm or intense, focused or diffuse—that is more appropriate or effective for the situation at hand, where previously they might have been reactive, stressed, or dysfunctional.

It isn't hard to see how this would begin to materially change people's decisions and their ability to focus and persevere, accommodate others, incorporate new information, and develop or adapt plans, especially in environments of rapid change, pressure, and uncertainty.[8] Ultimately, the various technologies and practices associated with them can be thought of as a set of tools. Being able to master multiple tools, to select a new tool for a given situation, is when you start getting to higher levels of performance.

Centering on trust and adopting the individual's perspective means going beyond legal disclaimers, transparency of data collection and usage, and protection of personal data. Those are table stakes. Your workforce doesn't care that the company has the right to monitor everything they do, and no amount of messaging will help if managers insist on using technology primarily to track and evaluate employees rather than putting it in the hands of employees and trusting (and supporting) them in supercharging themselves.

Taylor takes her seat in the conference room just as the session is about to begin. The first agenda item is a focusing exercise: Everyone slips on a VR headset and spends 10 minutes immersed in the same meditation program designed for expansiveness. For the working session to follow, each person picks up a small wand that offers personalized feedback. As Taylor introduces the goals for the session, an image of a balloon begins to inflate on her display—only she can see it—getting bigger the longer she speaks. When it "pops," she wraps up her sentence and asks for questions. An unobtrusive monitor, visually indicating participation patterns and blended stress markers, turns yellow as others join the discussion but soon shows bifurcation, indicating lack of balance. Jay stops himself midsentence: "Whoa, that's me, isn't it?" Everyone chuckles, and lines indicating the group's collective stress responses fade. In the ensuing calm, two of the more reserved members jump in to offer alternative assumptions. Taylor, a facilitator-in-training, is pleased, looking forward to going over her own and the group data record with her coach later, but a small vibration subtly alerts her that her attention has wandered, and she's immediately back in the action.

Technologies to support thriving at work

Technologies that touch you can support thriving at work, *if* that is the intent behind implementation.

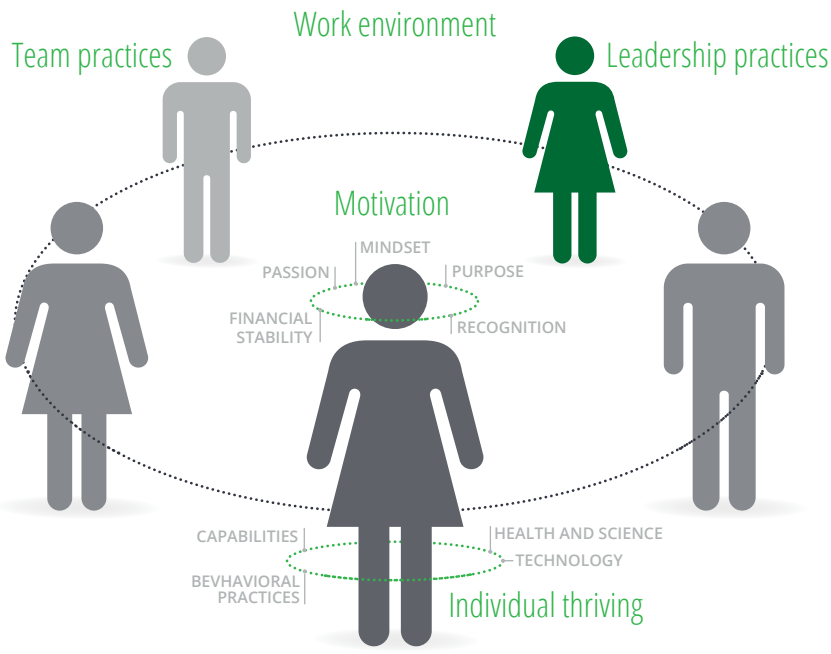
What does it mean to thrive at work? Thriving at work is about *how* we are at work. While work shouldn't bear the burden of fulfilling all our social and emotional needs or substitute for rewarding pursuits and relationships outside of work, work and the workplace should be congruent, rather than at odds, with each of us living at our best. Thriving means excelling—in a way that is healthful and sustainable. It is the foundation of performance, a combination of our own perception of how we feel in my day-to-day—am I clunking along, on the verge of breaking down, or humming along with an open road ahead, calibrated with an organizational assessment of our performance, delivering work that matters to the organization.

Of course, as figure 3 illustrates, thriving at work is much broader than the technologies that touch us. Our ability to thrive at work depends upon our health, behaviors, and the degree to which we develop our enduring human capabilities. It is also influenced by individual motivation, itself a complex construct, and affected by the management, leadership, and work practices around us. Technology is one piece, but an important piece, of the puzzle.

To the extent that we can shape the future, we might expect that the technologies in our daily lives integrate with our (group and individual) practices to help us do our best work *and* be our best selves, rather than working to exhaustion and retreating

FIGURE 3

Organizational performance driven by the workforce is a combination of individual thriving and group performance



Source: Deloitte analysis.

to recover. In that respect, even the external technologies that remove rote work and stress around compliance can help us to thrive.

But as we know, work and the conditions, expectations, and tools to succeed are changing.

We are in the midst of a shift from a world of scalable efficiency—in which our organizations, systems, and practices were oriented around predictability—to a future state of scalable learning, in which conditions and requirements change more rapidly and our organizations, systems, and practices have to reorient around learning, adapting, and shaping. In this shift, doing the same things faster and cheaper won't suffice. Companies will capture financial value through differentiation and deeper relationships, continuously learning how to better address a diverse and growing customer base. This has huge implications for workforce performance and development.

In a recent survey, 81 percent of executives said they anticipate use of artificial intelligence (AI) and automation to increase significantly over the next three years, dramatically affecting employees' daily work. Only a quarter of leaders, though, report being ready to put this new technology into use.[9] At least some of the burden will fall on workers: Increased pressure on companies to continuously achieve higher levels of performance and deliver new and better customer value translates into increased pressure on individual employees to learn and adapt faster—and to draw on a wider range of capabilities and skills to create new value. As companies take risks and work fluidly across boundaries with a diverse ecosystem of organizations and individuals, they will need a workforce that is diverse, healthy, collaborative, adaptable, and motivated to constantly learn. High performers will be those who can shift states more readily, switching back and forth between a diffused mode in which ideas, creativity, imagination arise (and body and mind reset) and a focused mode that plans and executes actions against a goal.[10]

Individuals as leaders and workers will need to be resilient to adapt to massive change. We will all need to know how to be mentally and emotionally healthy, to trust and build trust. We will also need to be rapidly learning and improving, and to embrace new tools and insights and put them to use for ourselves and our institutions. As leaders, we will need to know how to bring out the highest levels of communication, creativity, collaboration, and performance across diverse and distributed environments. And we will need to help people connect—to their colleagues, to their customers, to their passion, to purpose—and bring that to their work.

The key question: How can organizations bring technologies that touch to bear for individual thriving in ways that power organizational performance, business strategy, and competitiveness in the future? The possibilities are open, and it's easy to imagine that some of the use cases and solutions defined by today's technology offerings will prove less valid or useful over time, while new tools built around the same technologies will emerge to address more finely tuned problems. Consider just a few of the ways that technologies that touch might help us thrive:

- **What if you could learn to overcome your fears?** When you overcome barriers, negative stress decreases and possibilities open up, with the organization benefiting from your fuller contribution as you unlock more of your own potential. Immersive virtual reality–based training experiences and psychological interventions mediated through VR are already helping professionals conquer career-limiting fears such as public speaking.

- **What if you could shape your mood?** Mood affects everything from physical

performance, focus, and cognition to how we perceive and interact with others or take in new information. Sensors and stress wearables offer visibility into your physiological responses to activities and emotions throughout the day. Combined with tools that make mindfulness practices more accessible and facilitate deeper meditative states, individuals have the power for awareness and self-regulation.

- **What if you could learn without limits?** In a fast-shifting landscape, we need the ability to continuously connect ideas, adapt skills, and deepen capabilities. To do that, you need to form and strengthen new connections in the brain. Neurostimulation and training tools enhance the brain's plasticity by using small electric currents to activate neurons during training sessions to build pathways faster.

Questions such as these, and the potential solutions, underpin some of the most pressing issues for business leaders today. Understanding these questions from the perspective of the individual and the solutions possible through technologies that anchor on the individual, opens up new ways to approach the bigger organizational challenges. Consider how different the question of *how to retool today's workforce for tomorrow* looks through the lens of individuals overcoming fears, being open to new ideas, and being trained in a neurologically optimized environment. The question of *how to attract and access the right capabilities and develop them to create broader value* might be reframed through the lens of creating healthy work environments, fostering high performance, or developing managers to coach teams in a less predictable, more fluid ecosystem-based future.

What's holding us back?

The technologies that touch us face two fairly significant obstacles to adoption in the workplace.

For one thing, some dismiss these technologies, and the problems they address, as touchy-feely and irrelevant to business performance. This is largely a denial that the human elements the technologies affect are vital to organizational performance—and reflects a deeper lack of understanding about how the work and work environment of the future need to change for companies to succeed. This is particularly challenging for adopting team/group solutions. Individuals can still adopt personal consumer technologies at their own pace, but adopting group dynamic technologies requires both acknowledgment that the way meetings or teams or departments have always been run needs to change, and then changing group work practices to accommodate the new technologies. Without thoughtful implementation, this will likely run into resistance from managers and workers who see it as a waste of time or a threat to their status quo.

The second, and perhaps higher, barrier is suspicion and lack of trust between company and workforce. Consider the numerous recent articles about the ways our employers are keeping tabs or "spying" on us, using combinations of sensors to track our movements, technology for screen tracking, AI to parse text, IM and email communications, and website activity. Some surveillance is focused on tracking employee productivity, time spent on or off "work" activities, and response times; other surveillance is tracking potential mishandling or theft of company IP, of client data, and even sentiment analysis to try to get a read on morale and who is ready to quit. All of it seems intended to monitor, and much carries the implicit, if unstated, threat of informing punitive action, even if that is not the employer's intent.

While there are valid concerns motivating these uses—making sure valuable IP and sensitive client data isn't being improperly handled, for instance—it can create a surveillance, compliance, command-and-control dynamic rather than one of trust, value, or innovation, and potentially pits the workforce against both the organization and

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technology. When you combine that with the other most-hyped technologies—automation, algorithms, and AI—it's no wonder that the future of work is so often depicted as bleak. A 2015 the *Economist* article pointed to what the author termed *digital Taylorism*, asserting that emerging technologies were being used primarily as a way to supercharge well-worn precepts of management science: breaking activities into smaller tasks, measuring everything workers do, and paying for performance against preset metrics.[11]

But what about technology that empowers, enables, and amplifies? What about technology that can give the worker insight into their own performance and behaviors, and give them the tools to supercharge their performance, learning, and achievement in the work environment and beyond? There is a huge difference in both intent and impact depending on who the data is collected for and what types of insights and actions derive from it. For example, one large technology firm started giving personalized dashboards to sales-team members so that individuals could gain insight into how they spend their time day-to-day and even get recommendations for expanding their network or otherwise improving performance. The dashboards aren't visible to managers[12]—this is technology to empower the individual. Who benefits? Both worker and organization.

In a similar vein, consider the difference in how some logistics companies are equipping the long-haul truck fleet with similar technologies to those used to differentiate insurance rates by driving behavior or to control autonomous vehicles (GPS, speed and motion sensors, video and other data recording, adaptive response tech). When brakes are applied at a certain force or the vehicle swerves, in-cab systems automatically start recording, capturing both the driver's actions and reactions and their perspective, and outside the cab to show proximity of other vehicles. Instead of using it to reward or punish behavior, this data serves as potent, tangible feedback to the driver, letting them reexperience the incident in a training room, complete with all of the additional layers of information that surrounded the moment, to support the driver's awareness, investment in stopping risky behaviors, and adoption of more effective tactics. The aim: drivers who feel more supported, engaged, and accountable—and safer roads for everyone. Other emerging technologies, well and thoughtfully deployed, can produce similar dual benefits.

How to move forward and take advantage of the tech for human performance?

Centering on trust and intent, and anchoring on the individual, leaders face numerous tech-aided options, some leading to dead-on-arrival big brother monitoring and devices collecting dust, others leading to individual empowerment, a thriving workforce, and supercharged organizational performance. There are a couple of paths available to safely navigate that rocky terrain.

- **Opt for a hands-off approach, waiting and seeing while individuals adopt consumer offerings on their own.** For the organization, it's low-risk and limited-reward. By taking a slightly more active role, possibly through learning or talent development, the organization can support employees in experimenting and evolving their own sets of technological tools and practices to enhance their own learning and performance. This might include curation to identify the most valid and effective products, sharing success stories from those who are embracing them, connecting workers with each other in affinity groups around certain solutions or issues so that they can learn from and support each other's efforts, providing opportunities to further develop the practices associated with a

By taking a slightly more active role, the organization can support employees in experimenting and evolving their own sets of technological tools and practices to enhance their own learning and performance.

technology, and offering flexible subsidy programs to allow individuals to explore options and figure out what works best for their needs.

- **Embrace and harness the performance potential of technologies that touch.** As has already been discussed, these are powerful tools for performance, but they have the potential for unintended negative consequences. Proactively harnessing these tools would entail deploying technologies in a targeted way with a tailored strategy specific to the work, workforce, and work environment. In particular, this might mean deliberate interventions to enhance group performance or to take on longstanding, intransigent problems.

Organizations that choose the second path, that seek to proactively embrace and harness this trend's potential, should take the following considerations as a guide:

- **Get educated on the underlying science and methods for any tech under consideration,** and develop a framework for how the measures targeted by these technologies relate to the objectives of your organization. That begins with better understanding what type of workforce you need—what behaviors, dispositions, and capabilities the organization needs—to support the business strategies and thrive in both the near and longer term. With those objectives in mind, understand which factors related to physiology, neurobiology, biochemistry, etc. are most significant for enhancing or degrading those objectives. In some cases, the science and research already exist to draw those connections, but individual performance and organizational performance are complex. While competitive cyclists may share an understanding of the benefit of increased VO2 on their race performance, researchers don't yet have such robust evidence about how changes in CO2 levels or heart rate variability directly affect the performance that matters in the workplace.

- **Design work and work environments that optimize for these factors** and for the behaviors, dispositions, and capabilities the business strategy requires. Creating work environments that allow organizations and individuals to experiment with the tools that may enhance performance, and generate meaningful data and feedback to understand what is helpful or harmful for a given individual and use case.

- **Be selective—don't layer on technology for technology's sake.** Improving human performance doesn't necessarily *require* technology. If the organization can redefine the work itself to be more meaningful or aligned to the values and interests of the talent the company needs, that will likely have positive impact on the emotional well-being and experience of stress by the individual. The hoped-for result: less-harmful physiological

responses and better cognitive performance, social interaction, group connection, ability to learn, adapt and adopt new perspectives, endurance, and ability to access core human capabilities such as creativity, imagination, curiosity, and empathy. Similarly, redesigning the work environment, including management practices and systems, to be more congruent with this type of work and the desired behaviors can be expected to reduce physical, mental, and emotional stressors that hamper individual performance today. However, having changed what can be changed in work and work environment, these technologies can be deployed to ameliorate what can't be changed (some types of work are stressful, friction—even productive friction—can be exhausting, and our lives will still prove challenging) and to give tools and insights to those working in an optimized environment to take their performance to new levels.

- **Deploy technology in a way that is least intrusive and most aligned to existing behaviors.** Maximize the chance of success by choosing solutions and designing the environment in ways that are most likely to be adopted and used by individuals to move the needle on their own and their groups' performance. Implement solutions for human performance that employ the best thinking from behavioral economics and human and organizational psychology, not just the latest technologies.[13] Leaders looking to equip the workforce with performance-enhancing tools and technologies need to be thoughtful in selecting tools that don't add more stress, distraction, or cognitive load. Some of the solutions coming out make good use of haptics—forms of visual or sensory feedback that don't rely on voice, text, or standard smartphone interfaces.[14]

- **Plan for emergence and evolution.** Individuals will find value in different technologies and will combine them and develop practices around them in ways that uniquely support their needs and preferences. And as the technologies change and mature, and new ones emerge, so too will the opportunities to use them evolve. Avoid over-specifying. Reevaluate the way technology is deployed through the lens of how it affects individual performance, both in the immediate task and people's ability to thrive more broadly over time. Ultimately, bias toward putting technology and data into individuals' hands in ways that allow them to gain insight and improve and refine their own performance.

As we shift from a world in which standardization and speed win the day to one oriented around people, where deep relationships and new value win the customer, it's worth remembering that the goal is not to settle on one single approach or silver-bullet technology to empower and elevate your workforce. The goal—for these technologies and the work environment around them—is to support the individual as consumer, worker, leader, and group member. Leaders should look to help people be their best selves and do their best work, not just once but time and again, realizing more of their potential and achieving higher performance without burning out or fading away.

MAGGIE WOOLL, Deloitte Services LLP, leads research at the Deloitte Center for the Edge and speaks and writes on issues related to learning, human potential, and the future of work. She is based in San Francisco.

STEVE HATFIELD is a principal with Deloitte Consulting and the global leader for Deloitte's Future of Work initiatives. He is based in Boston.

DULEESHA KULASOORIYA is a partner, internal services, Deloitte Asia Pacific, where he leads the Deloitte Center for the Edge in Singapore.

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5. A behavioral trainer would likely involve pairing the device and data with external support, such as by creating an ongoing log of reactions and interactions that a user might choose to share with a therapist or counselor. One example of this combination of digital therapeutics and biometrics is Feel, which combines a wearable tracker with virtual cognitive behavioral therapy. Another form of behavior training, Pavlok, uses a wearable that uses aversive conditioning, delivering a small shock to associate negative stimuli with the behavior.
6. One example of VR for mood is TRIPP. The company has developed an immersive meditation that helps users who aren't meditators quiet their minds and experience augmented visualization that can help them to achieve a more calm or focused state. Mursion and Oxford VR are two examples of offerings that use VR in ways that enhance performance through immersive practice and developing emotional awareness and regulation.
7. The Halo headset is one example of this neurostimulation technology being directed at accelerating neuroplasticity.
8. Much of the modern research on understanding the relationships between our nervous system and our physical and mental performance comes from work with specialized athletes, astronauts, and special forces. There are many sources for additional information; Steven Kotler's book *Stealing Fire* provides an accessible overview of the topic. For additional information about the implications for organizational and individual performance, see Deloitte, "Workplace burnout survey," accessed November 19, 2019; Human Performance Institute, "Home page," accessed November 19, 2019; Flow Research Collective, "Home page," accessed November 19, 2019.
9. Erica Volini et al., *Leading the social enterprise: Reinvent with a human focus—2019 Global Human Capital Trends*, Deloitte Insights, 2019.
10. Neuroscientist Andrew Huberman leads the Huberman Lab in Stanford School of Medicine's Department of Neurobiology. The author attended a talk given by Dr. Huberman at Deloitte University, Westlake TX, February 2, 2018. Related information can be heard in the podcast Unbeatable Mind: Dr. Andrew Huberman talks about the practical uses of neuroscience, October 3, 2018.
11. *Economist*, "Digital Taylorism," September 10, 2015.

12. Sarah Krouse, "The new ways your boss is spying on you," *Wall Street Journal*, July 19, 2019.

13. Jim Guszcza, "The last-mile problem: How data science and behavioral science can work together," *Deloitte Review* 16, January 27, 2015.

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